North American Association of Central Cancer Registries, Inc.

Standards for Cancer Registries
Volume V

Pathology Laboratory Electronic Reporting

Version 4.0

Edited by
W. Ted Klein
Lori A. Havener

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The other volumes in the series, Standards for Cancer Registries, are:

- *Volume I: Data Exchange Standards and Record Description.* Intended for programmers, this provides the record layout and specifications for the standard for data exchange, including correction and analysis formats.

- *Volume II: Data Standards and Data Dictionary.* Intended for central registries, this provides detailed specifications and codes for each data item in the data exchange record layout.

- *Volume III: Standards for Completeness, Quality, Analysis, and Management of Data.* Intended for central registries, this provides detailed standards for many aspects of the operation of a population-based cancer registry.

- *Volume IV: Standard Data Edits.* This standard document currently is only made available electronically as program code and a database. It documents standard computerized edits for data corresponding to the data standards Volume II.

Copies of all standards documents can be viewed or downloaded from NAACCR's website at www.naaccr.org.

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Preface

The first version of pathology laboratory electronic reporting guidelines was documented in Standards Volume II, Version 10, Chapter VI, Pathology Laboratory Electronic Reporting. Standards for Cancer Registries, Volume V, Pathology Laboratory Electronic Reporting, Version 2.0 documents recommended message or format standards for electronic transmission of reports (pathology, cytology, and hematology) from pathology laboratories to central cancer registries. Standards Volume V Version 2.1, evolved from modifications made to Version 2.0 as pathology laboratories and central cancer registries developed tools to transmit electronic laboratory reports to cancer registries. In Standards Volume V Version 3.0, the Health Level 7 (HL7) section was upgraded to HL7 Version 2.5.1 which includes more robust guidance for handling specimen information. In this current guide, Standards Volume V Version 4.0, Chapter 3 Synoptic Reporting, has been expanded to include additional guidance on the transmission format of synoptic cancer pathology reports and complex cancer pathology reports examples. Effective with Standards Volume V, Version 4.0 the Pipe-Delimited Data Dictionary was removed from the appendix and is a standalone document. In addition, many of the use case models have been moved to the NAACCR Electronic Pathology (E-Path) Reporting Guidelines; the purpose of this manual is to describe procedural guidelines for electronic pathology reporting from a pathology laboratory to a cancer registry and serves as a compliment to Volume V.

This Volume retains the standard specifications for electronic pathology reporting using HL7 Version 2.5.1. Although HL7 Version 2.6 was an approved ANSI standard prior to the date of this publication, national standards organizations are recommending HL7 Version 2.5.1. While it is recognized that HL7 Version 2.3.1 remained the most widely supported version among pathology laboratory information systems, it is no longer actively supported by HL7 and does not contain the robustness to handle specimen specific information. For this reason, the North American Association of Central Cancer Registries, Inc. (NAACCR) Pathology Data Work Group decided to define this standard using HL7 Version 2.5.1.

This Guide defines construction rules and guidelines that result in a number of enhancements to the structure and format of the HL7 messages that carry the Pathology Reports. Please note that the HL7 constructs that result from the application of these rules differ from older interfaces, thus sending facilities must ensure that receiving facilities are able to accept and process them before reports formatted this way may be transmitted. New codes to identify concepts, especially in the area of Synoptic Reporting, are also introduced, and senders must ensure that Registries are able to receive and process these codes. See Chapter 3 for more detail.

It is the hope of the NAACCR Pathology Data Work Group that making these consensus standards available to the community will make it easier and less costly for pathology laboratories, central cancer registries, and software vendors to implement uniform, standard methods for the transmission and receipt of electronic pathology reports. Ultimately, our goal is to develop resources that will support current and future initiatives toward standardization through the recommended communication protocols that will assure the collection of reliable, accurate, and timely pathology reports of cancer specimens examined by pathology laboratories. The content of this Volume will assist pathology laboratories in transmitting electronic reports to cancer registries by utilizing the recommended format standard. It is not intended to be the final revision of the standard, which will evolve over time as more is learned about laboratory technology, electronic reporting, new information technologies, vocabulary and codes, reporting regulations, and confidentiality.

The NAACCR Interoperability Ad Hoc Committee Chair and the Pathology Data Work Group Chair would like to acknowledge the dedicated members of the Pathology Data Work Group and the Pathology CAP Checklist Work Group who contributed countless hours. Special acknowledgements are given to the Pathology CAP Checklist Work Group co-chairs: Robin Rossi and Wendy Aldinger. Special thanks are warranted to Ted Klein of Klein Consulting Inc. who provided critical guidance toward the development of an HL7 compliant

implementation guide with financial support from the Canadian Partnership Against Cancer and the Centers for Disease Control and Preventions' National Program of Cancer Registries. Thanks are also extended to Lori Havener of NAACCR, who edited the Standards document and prepared all materials for the many conference calls; to David Lyalin for the development of UML (Unified Modeling Language) models; to Andrea MacLean for leadership and practical experience; and to the Canadian Provincial /Territorial Registries for the provision of actual synoptic cancer pathology report implementation expertise and examples.

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1 Introduction

Monitoring the occurrence of cancer, referred to as cancer surveillance, is a cornerstone of cancer control decision-making and can be used to trigger case investigations, follow trends, evaluate the effect of prevention measures, and suggest public health priorities. Because most cancers are definitively diagnosed by histology, cancer surveillance programs use pathology reports to identify new cases and collect information on previously reported cases.

1.1 PROBLEM STATEMENT, GOALS, AND SCOPE OF THIS DOCUMENT

The Problem

The diagnosis and treatment of cancer patients is increasingly occurring in non-hospital settings. This shift from the traditional domain of hospitals presents a problem for central cancer registries in their need for complete and accurate case ascertainment because non-hospital cancer cases are often under-reported. It is essential that central cancer registries develop standards for electronic case ascertainment of cases from these non-hospital sources. One non-hospital source necessary for complete cancer data collection is the pathology laboratory. The lack of a standardized system for reporting by pathology laboratories results in under-reporting of such cases as well as each central registry developing its own procedures for capturing these cases. In turn, pathology laboratories must comply with the different specifications from each state or province/territory cancer registry to which they are required to report.

The Proposed Solution

The Pathology Workgroup has developed a recommended approach for pathology laboratories to report electronically to central cancer registries. The result of this Work Group's efforts is in this document. HL7 is the recommended data format for transmitting electronic pathology laboratory reports. The pipe-delimited format is an alternative transmission method. A standard pathology laboratory dataset, data dictionary, and HL7 transmission format and flat file were developed to enhance the completeness, timeliness, consistency, and efficiency with which cancer data are transmitted by pathology laboratories and received and processed by central cancer registries. Electronic pathology reporting implementation guidelines were created to provide assistance in implementing the recommended standards and are available on the NAACCR pathology standard web-site (see Section 1.2 below).

The Pathology Laboratory Reporting Goals

The goals of this document are to define the data standards for cancer registration as used by cancer registries, pathology laboratories, vendors, and other groups, and to provide guidelines for the implementation of these standards.

Scope of This Document

The scope of this document is limited to standards and guidelines to transmit cancer information from pathology laboratories to cancer registries. The standard format documents address data items, data item definitions, and transmission specifications. Implementation guidelines and business rules are incorporated to help cancer registries, pathology laboratories, and vendors within North America respond to the call for cancer cases in a uniform method. In addition, the use of HL7 as the primary recommended clinical data interchange standard will provide a cost-effective solution to addressing data exchange in the 21st century.

The reportable tumor definitions are not included in the Scope of this document. Standards for reportability are defined by national standard-setting organizations in Standards Volume II, Chapter 3 and are available from the central cancer registries.

1.2 STANDARDS AND GUIDELINES FOR ELECTRONIC TRANSMISSION OF REPORTS FROM PATHOLOGY LABORATORIES TO CENTRAL CANCER REGISTRIES

This document provides two formats for transmitting electronic pathology laboratory reports to central cancer registries. NAACCR recommends using the Implementation Guide for Transmission of Laboratory-Based Reports to Cancer Registries Using Version 2.5.1 of the Health Level Seven (HL7) Standards Protocol (see Chapters 2 and 3). Use of these standards will greatly increase the efficiency and consistency with which laboratories and central registries meet reporting and data collection requirements. Effective with Standards Volume V, Version 4.0 the Pipe-Delimited Data Dictionary was removed from the appendix and is a standalone document provided for registries that already have the pipe-delimited format in place and have yet to implement HL7 messaging.

In addition to this document, Volume V, NAACCR has developed an additional document providing guidance on the transmission and receipt of pathology reports, NAACCR Electronic Pathology Reporting Guidelines. These Reporting Guidelines are being updated to address issues related to synoptic reporting of the CAP Cancer Checklists, and to contain expanded definitions and descriptions of the reporting process. This "Guidelines" document serves as a complement to Volume V. The purpose of the Reporting Guidelines is to describe procedural guidelines for electronic (narrative and synoptic) pathology reporting from a pathology laboratory to a cancer registry. Whereas Volume V is designed for those in information technology, the "Guidelines" document is designed for those in registry and laboratory operations. The document is available on the NAACCR website (www.naaccr.org). Any updated iteration of these guidelines will also be posted on the NAACCR standards website.

Implementation Guide for Transmission of Laboratory-Based Reports to Cancer Registries using Version 2.5.1 of the Health Level Seven (HL7) Standards Protocol
These chapters of Volume V are for electronic communication of reportable cancers and benign/borderline intracranial and CNS tumors, consistent with recommended reporting of reportable conditions from laboratories to cancer registries using HL7 Version 2.5.1. It follows the specifications described in the HL7 Standard Version 2.5.1 and focuses on one type of HL7 message, the Observational Report - Unsolicited (ORU).

Pipe-Delimited Data Dictionary
Effective with Standards Volume V, Version 4.0 the Pipe-Delimited Data Dictionary was removed from the appendix and is a standalone document that remains unchanged from the prior version of Volume V. For pathology laboratories and cancer registries that have the pipe-delimited format in place no updates to their systems will be necessary for the transmission of traditional text-based cancer pathology reports. The required data items comprise the minimum dataset needed to process a report by the central registry. The Pipe-Delimited guidance will not suffice for the transmission of synoptic cancer pathology reports.

1.3 HIPAA

The Health Insurance Portability and Accountability Act (HIPAA, or the Act), P.L. 104-191, enacted on August 21, 1996, includes provisions related to insurance coverage and a section that is relevant to electronic reporting of health care information. HIPAA requires that standards be adopted for certain uniform financial and administrative transactions, data elements, and security of electronic health information systems. It also includes provisions for adopting standards for the privacy of health information. The Act pre-empts state laws and imposes civil monetary penalties and prison terms for certain violations.

HIPAA also imposes changes in the membership and duties of the National Committee on Vital and Health Statistics (NCVHS). There is a provision that the NCVHS will make recommendations and legislative proposals to the Secretary, Department of Health and Human Services, on the adoption of uniform data standards for patient medical record information and the electronic exchange of such information. HIPAA addresses state regulatory reporting by stating, "[N]othing in this part shall limit the ability of a State to require a health plan to report, or to provide access to, information for management audits, financial audits, program monitoring and evaluation, facility licensure or certification, or individual licensure or certification."
For public health authorities, HIPAA states, "Nothing in this part shall be construed to invalidate or limit the authority, power, or procedures established under any law providing for the reporting of disease or injury, child abuse, birth, or death, public health surveillance, or public health investigation or intervention." Covered entities that are named in the HIPAA legislation are "health plans, health care clearinghouses, and health care providers who transmit any health information in electronic form in connection with a transaction referred to in Section 1173(a) of the Act." The regulation implementing the HIPAA privacy provisions allows public health exemptions for disclosure without patient consent of individually identifiable health information for the purposes quoted above.

Under HIPAA, state cancer registries qualify as public health authorities operating as agencies authorized by law to "collect or receive such information for the purposes of preventing or controlling disease… and for the conduct of public health surveillance, public health investigations, and public health interventions" (45 CFR 164.512). As such, public health reporting to state agencies from pathology laboratories is exempt from HIPAA privacy rules. Pathology laboratories, as covered entities, may report this public health information to state cancer registries using the HL7 Standard as described here; HIPAA provisions will not alter these reports.

1.4 PATHOLOGY REPORT DESCRIPTIONS AND DEFINITIONS

This section identifies the formal names and terms which are used throughout this Guide. There are a variety of ways in which pathology reports are captured, formatted, and transmitted to cancer registries in existence today. Detailed descriptions of these may be found in the ePath Reporting Guidelines document. The relationship between the different concepts outlined below is shown graphically in section 2.3.1 Registry Reporting Domain Model below.

1.4.1 Kinds of Pathology Reports

Many kinds of reports may be transmitted to cancer registries depending upon jurisdictional rules and local customary practice. In addition to the Pathology Study Report itself, there may be supplemental reports on additional cancers, special studies, other laboratory procedures, supporting clinical information, etc. The most common kinds of reports sent to registries are listed below.

Primary Report
This is the principle pathology report that contains all of the pathologic and prognostic information associated with the patient's surgical case (specimen(s)).

Supplemental Pathology Reports
These reports contain additional information attached to the pathology report, generally after the original report has been issued[1], and may address subsequent testing or stains, comparison with previous specimens, second opinions from other pathologists or laboratories, or a change in diagnosis resulting from re-examining the specimen(s) or sampling new areas within the specimen. Some kinds of supplemental reports have specific LOINC codes, and others may not. For those that do not have a particular LOINC code for the report itself, the

[1] Goldsmith et al, Surgical Pathology Report Recommendations Arch Pathol Lab Med: Vol 132, Oct 2008: 1608-1616

general code 22639-9 Pathology report supplemental reports may be used to identify the report. This code can be used for any type of supplemental report, but since there are explicit LOINC codes for consult reports and addenda, the use of this code is discouraged for these report types.

Addenda:
An addendum report is a type of ancillary report that contains additional information, typically the results of ancillary diagnostic studies completed after the original pathology report has been released.

Amendments:
Amended reports are created to correct errors or discrepancies in the original final report. Typical reasons to create an amended report include correction of typographical errors, modification of the final diagnosis, or documentation of the resolution of a specimen-labeling discrepancy. Note that no special LOINC code is required for Amendments. The LOINC code selected is the code for the report that is being amended, whatever kind the report is, and whatever style the amendment is.

Consultation notes (consults):
A consultation report is a report that provides advice or guidance by a second or additional expert; or a deliberation by pathologists on a diagnosis and/or interpretation of diagnostic test results. This may be a second opinion of the specimen diagnosis.

Autopsy Report:
This is a pathology report that contains all clinical and pathologic information obtained at the time of death and at a postmortem examination[2].

Pathology Report Collection
Sometimes several kinds of reports are transmitted together in a single HL7 message. These are grouped together as a comprehensive collection, as they often need to be interpreted together as a set. For a more complete description of this structure, see section 2.3.1 Registry Reporting Domain Model below.

1.4.2 Styles of Pathology Reporting

Currently, there is a wide spectrum of styles of reporting in terms of level of detail, structure, and levels of encoding, in common use and in the literature. For more details on these levels, refer to the descriptions in the ePath Reporting Guidelines document.

Traditional Narrative
Traditionally, cancer pathology reports are in a text-based or narrative-style format with specific information contained in the narrative. These reports are generally dictated by a pathologist and then transcribed by a transcriptionist.

Synoptically structured
A synoptically structured report is a narrative report that is formally divided into explicit items covering specific observations on a specimen, and laid out in a predefined format. Note that the LOINC code that identifies a report as being synoptic is used for both synoptically structured narrative reports, and fully encoded synoptic reports.

Synoptic
A synoptic report is one where the information has been fully separated into an explicit set of defined question and answer pairs of data items, and fully encoded for all questions, and for all answers that are not numeric

[2] AJCC Cancer Staging Manual, 2010, 7th edition, page 13

values or free text entry. Note that the identification of whether a report is fully encoded synoptic, or synoptically structured, is identified with LOINC codes contained within the observations of the report itself (see section 2.3.2 and 3.4 rule N below).

1.4.3 LOINC coding for Reports

The kinds and styles of reports are labeled by a LOINC code contained in the HL7 message carrying the transmitted report, and are carried in the OBR-4 for the report. These are summarized in the table below:

Kind of Report	Style of Reporting	LOINC code	LOINC Component
Primary Report	Narrative Text	11529-5	Study report
Consult Report	Narrative Text	60570-9	Consultation note
Addendum	Narrative Text	35265-8	Path report.addendum
Autopsy Report	Narrative Text	18743-5	Autopsy note
Primary Report	Synoptic	60568-3	Synoptic report
Consult Report	Synoptic	60571-7	Consultation note.synoptic
Addendum	Synoptic	60569-1	Report addendum.synoptic
Pathology Report Collection	any	60567-5	Comprehensive pathology report panel

Amended reports do not have any special LOINC codes; the code of the original report should be used, with a Result Status (OBR-25) of ‘C’ indicating that the message contains a correction to the previously transmitted report; this differentiates them from the original sent, which carries the Result Status of ‘F’ for Final. Note that Preliminary reports (Result Status ‘P’) should generally not be sent to the registry.

Many supplemental reports may be custom laboratory studies or other types of reports. These should be reported with the LOINC code for the study done, carried in the OBR-4.

1.4.4 Sections of Pathology Reports

Pathology reports are often split into sections, both on paper reports which are printed, and also in the HL7 messages. The common sections used when this is done are detailed below. Note that the division of a report into all of these sections is done primarily for narrative reports; synoptic reports have their own layout defined in the published synoptic templates for a number of these sections (but not all). Note that synoptic reports will nearly always have some sections that contain information to be reported that is not part of the checklists. The reporting of sections has been done historically using LOINC codes some of which are components of the NAACCR Volume II panel; these may be incorporated into narrative reporting without the requirement for all components of the panel, or the panel header.

Clinical History Section (may also contain Reason for Study)
LOINC code: 22636-5 Pathology report relevant history
The clinical history section provides a brief account of the patient’s past and present state of health that is relevant to the tissue sample the pathologist is examining. Note that this section often exists as a separate section in synoptic reports in addition to specific structured history items in the synoptic template itself.

Diagnosis Section
LOINC code: 22637-3 Path report.final diagnosis
In general, the text diagnosis section contains all the information that pertains to the pathologic diagnosis of each specimen submitted during the course of one surgical procedure.
The final diagnosis section is generally a summation of the “final word” on pathologic and prognostic finding by the pathologist. This section is used in narrative reports.

Gross/Macroscopic Section
LOINC code: 22634-0 Pathology report gross observation
The gross/macroscopic description section contains the written description (e.g. size, weight, color, etc.) of all tissue or removed foreign materials received by the surgical pathology laboratory; it also includes vital documentation of the specimen's handling within the laboratory (e.g. type of fixative used, length of time in fixative, etc.) and the tissue's disposition. This section may also include information on intraoperative consultations such as frozen sections or intraoperative cytology (e.g. fine-needle aspirations, smear preparations). This section is typically contained within specific synoptic templates, and so is generally included separately only in narrative reports.

It should be noted that the reporting of intraoperative consultations or frozen sections (IOC) as part of the gross description or as a separate header in the report has not been standardized, thus registries cannot expect to find this data presented in a uniform manner. Generally speaking the final diagnosis on a specimen where IOC has been performed is included in the diagnosis field, and if there is any discrepancy between IOC and final diagnosis, a comment is typically included in the comments field.

Microscopic Observation Section
LOINC code: 22635-7 Path report.microscopic observation
The microscopic description section describes the salient histopathologic findings of the case. Specific attributes that the pathologist may look for and report in the microscopic section include: histologic grade, tumor margins, assigning of TNM pathological staging, etc. This section is typically contained within specific synoptic templates, and so is generally included separately only in narrative reports.

Comments/Notes Section
LOINC code: 22638-1 Pathology report comments
The comments/notes field is optional and typically includes supplementary information that provides further clarification on the clinical findings and/or diagnosis contained within the body of the report. Synoptic templates have structured components for pathology comments, and so this separate section is typically used only in narrative reports.

Hospital Specific Section
LOINC code: 46443-8 Hospital-specific section Set NAACCR
Section containing information specific to the hospital where the specimen was collected from the patient. This information is generally received from the hospital with the specimen, and incorporated into the final report. This section may exist in either narrative or synoptic reports.

Text/Miscellaneous Section
LOINC code: 46450-3 Text-miscellaneous section Set NAACCR
Other areas of text that are not specified in the list above. This section may exist in either narrative or synoptic reports.

1.5 SAMPLE PATHOLOGY REPORTS

Below are some sample reports that illustrate many of the data items that this Guide provides rules for encoding in HL7 Messages to Cancer Registries. For more examples of Synoptic Reports, see Chapter 3.

1.5.1 Sample Traditional Narrative Pathology Report

The anatomic pathology report example below is a typical simple report whose content is to be transmitted from a laboratory or hospital to a cancer registry. See Appendix D for an example of an ORU message that supports the sending of the data as illustrated in the sample pathology report below.

PATHOLOGY REPORT

Report Identification		**Patient Information**			
Facility ID:	33D1234567	Chart/MRN:	**00466144**	Address	**495 East Overshoot Drive**
Pathology ID:	97 810430	SSN/SIN:	**123456789**		
Report Date:	2004-07-28	Surname:	**MCMUFFIN**	City/Town:	**Delmar**
Report Type:	Final	Given Name:	**CANDY**	State/Prov:	**NY**
Requester ID:	594110NY	Sex:	**F**	Zip/Post Code:	**12054**
Requester:	CARING, CAREN M.D. Albany Medical Center, 43 New Scotland Ave. NY, Albany 12208	Date of Birth:	**1957-07-06**	Country:	
Procedure Date:	2004-07-20	Age:	**47** (at procedure date)		
Surgeon ID:	123456	Insurer:	**USHC**		
Surgeon:	MYELOMUS, JOHN	Insurance No:	**3270686987**		
Pathologist ID:	109771	Race:	**White**		
Pathologist:	GLANCE, JUSTIN	Ethnicity:			
Clinical Dx/ Comment	Carcinoma of breast. Post operative diagnosis: same.				
Clinical History	47-year old white female with (L) UOQ breast mass				
Tissue Submitted	left breast biopsy apical axillary tissue contents of left radical mastectomy				
Gross Pathology	Part #1 is labeled “left breast biopsy” and is received fresh after frozen section preparation. It consists of a single firm nodule measuring 3cm in circular diameter and 1.5cm in thickness surrounded by adherent firbrofatty tissue. On section a pale gray, slightly mottled appearance is revealed. Numerous sections are submitted for permanent processing. Part #2 is labeled "apical left axillary tissue" and is received fresh. It consists of two amorphous fibrofatty tissue masses without grossly discernible lymph nodes therein. Both pieces are rendered into numerous sections and submitted in their entirety for history. Part #3 is labeled "contents of left radical mastectomy" and is received flesh. It consists of a large ellipse of skin overlying breast tissue, the ellipse measuring 20cm in length and 14 cm in height. A freshly sutured incision extends 3cm directly lateral from the areola, corresponding to the closure for removal of part #1. Abundant amounts of fibrofatty connective tissue surround the entire beast and the deep aspect includes and 8cm length of pectoralis minor and a generous mass of overlying pectoralis major muscle. Incision from the deepest aspect of the specimen beneath the tumor mass reveals tumor extension gross to within 0.5cm of muscle. Sections are submitted according to the following code: DE- deep surgical resection margins; SU, LA, INF, ME -- full thickness radial samplings from the center of the tumor superiorly, laterally, inferiorly and medially, respectively: NI- nipple and subjacent tissue. Lymph nodes dissected free from axillary fibrofatty tissue from levels I, II, and III will be labeled accordingly.				
Microscopic	Sections of part #1 confirm frozen section diagnosis of infiltrating duct carcinoma. It is to be noted that the tumor cells show considerable pleomorphism, and mitotic figures are frequent (as many as 4 per high power field). Many foci of calcification are present within the tumor. Part #2 consists of fibrofatty tissue and single tiny lymph node free of disease. Part #3 includes 18 lymph nodes, three from Level III, two from Level II and thirteen from Level I. All lymph nodes are free of disease with the exception of one Level I lymph node, which contains several masses of metastatic carcinoma. All sections taken radially from the superficial center of the resection site fail to include tumor, indicating the tumor to have originated deep within the breast parenchyma. Similarly, there is no malignancy in the nipple region, or in the lactiferous sinuses. Sections of deep surgical margin demonstrate diffuse tumor infiltration of deep fatty tissues, however, there is no invasion of muscle. Total size of primary tumor is estimated to be 4cm in greatest dimension.				
Final Dx	Infiltrating duct carcinoma, left breast. 2. Lymph node, no pathologic diagnosis, left axilla. 3. Ext. of tumor into deep fatty tissue. Metastatic carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of 18 lymph nodes - Level I (12), Level II (2) and Level III (3).				
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1.5.2 Sample Synoptically Structured Pathology Report

The anatomic pathology report example below is a typical simple report whose content is to be transmitted from a laboratory or hospital to a cancer registry. See Appendix D for an example of an ORU message that supports the sending of the data as illustrated in the sample pathology report below.

Report Identification		**Patient Information**			
Facility ID:	33D1234567	Chart/MRN:	**00466144**	Address	**495 East Overshoot Drive**
Pathology ID:	97 810430	SSN/SIN:	**123456789**		
Report Date:	2004-07-28	Surname:	**MCMUFFIN**	City/Town:	**Delmar**
Report Type:	Final	Given Name:	**CANDY**	State/Prov:	**NY**
Requester ID:	594110NY	Sex:	**F**	Zip/Post Code:	**12054**
Requester:	CARING, CAREN M.D. Albany Medical Center, 43 New Scotland Ave. NY, Albany 12208	Date of Birth:	**1957-07-06**	Country:	
Procedure Date:	2004-07-20	Age:	**47** (at procedure date)		
Surgeon ID:	123456	Insurer:	**USHC**		
Surgeon:	MYELOMUS, JOHN	Insurance No:	**3270686987**		
Pathologist ID:	109771	Race:	**White**		
Pathologist:	GLANCE, JUSTIN	Ethnicity:			
Clinical Dx/ Comment	Carcinoma of breast. Post operative diagnosis: same.				
Clinical History	47-year old white female with (L) UOQ breast mass				
Tissue Submitted	Left breast lesion - short stitch superior. Long stitch lateral.				
Gross Pathology	SPECIMEN SITE DESCRIBED ON CONTAINER: left breast lesion SPECIMEN DESCRIPTION Tissue/s: consistent with breast lumpectomy, with attached skin ellipse Handling Prior to Receipt in Lab: specimen received intact Clinical Orientation: attached short suture, described on requisition as "superior" and attached long suture, described as "lateral" - used for the orientation of the specimen (below) Resection Margins: inked: red medial and lateral blue superior green inferior black deep Other Handling in Lab: sectioned and left for overnight fixation Approximate Fixation Time: > 48 hours/ < 7 days Specimen Size: breast 7.1 x 6.2 x 2.5 cm in greatest dimensions skin ellipse 3.3 x 0.6 cm Diagnostic Imaging for Identification of Suspect Area/s: not required Breast Tumour: present - see below Size: difficult to measure accurately; a 0.6 cm area of hemorrhage immediately adjacent tumour, obscuring tumour margin approximately 2.0 x 1.2 cm in greatest dimensions Location: 11 o'clock - as per prior clinical history Appearance: spiculated, ill-defined, firm, grey-white Evidence of Spread or Complications: none Resection Lines: 0.3 cm from the closest resection margin - the deep 0.8 cm from the next closest resection margin – the junction of the superior and inferior (superficially) 1.2 cm from all remaining resection margins, the next closest being the medial Other Breast: moderately fibrous centrally, and surrounding tumour Nipple: not applicable - not included with specimen Skin: normal				

	Lymph Nodes: none seen Axillary Tissue: not applicable - none included with specimen Other Abnormalities/ Comments: none MATERIAL SUBMITTED FOR HISTOLOGY: entire tumour, and other representative sections BLOCKS SUBMITTED TO HISTOLOGY: A,B complete cross-section of tumour, in its largest dimension - split in two C tumour including closest (deep) resection margin D-G ? tumour including deep margin H fibrous breast including inferior resection margin I breast including lateral resection margin J breast including medial resection margin K section immediately superficial, but perpendicular to that in A,B including superior margin, and skin ellipse
Microscopic	Neoadjuvant Treatment: unknown - not provided clinically Specimen Type: lumpectomy Lymph Node Sampling: sentinel lymph node biopsy Specimen Size: Greatest Dimension (cm): 7.1 Comments: as described grossly Laterality: left Comments: as described clinically Features of Malignancy: Tumour Site: not specified clinically Comments: described as "11 o'clock" in the Clinical History for a previous core biopsy (S*-*****) - likely the same site as the tumour in the specimen here Invasive Carcinoma: present Histologic Type: invasive ductal carcinoma Comments: with prominent lobular differentiation; for instance, the carcinoma spreads as individual cells and small groups of cells at the edge of the main tumour mass Tumour Distribution: single focus only Comments: seen in the area described grossly Size of Invasive Component: Greatest Dimension (cm): 1.1 Comments: exact size difficult to be certain of, because of the effect of previous biopsy, but appearing greater than 1.0 cm in largest dimension, from the microscopic slides Histologic Grade: Tubule Formation: 3/3 Nuclear Pleomorphism: 2/3 Mitotic Count (40x): 1/3 Modified Nottingham Grade: Grade II/III - moderately differentiated Skin Involvement: absent Chest Wall Involvement: not applicable - none included with the specimen Venous/Lymphatic Invasion: absent Block(s) for Receptor Studies: being sent to: LHO Blocks Submitted: G In Situ Carcinoma: absent Comments: except in some very minute foci in and around the invasive tumour Lymph Nodes: Lymph Nodes Present: yes Number Examined: 1

	Number Involved: 0 AJCC Staging: Additional pTNM Descriptors: not applicable Primary Tumour (pT): pT1c - tumour more than 1.0 cm but not more than 2.0 cm in greatest dimension Distant Metastasis (pM): pMx - cannot be assessed Resection Margin(s): Involvement by Invasive Carcinoma: absent Closest Margin(s): deep, in a number of slides - and particularly close in Slide G Distance to Closest Margin (mm): 1 Comments: (0.1 cm) Correlation with IOC: not applicable Additional Pathologic Findings: reactive fibrosis around the carcinoma changes around the carcinoma consistent with the effect of previous biopsy some immunohistochemistry will be ordered to confirm some of the findings above - that will be reported in an Addendum Report to follow fibrocystic change in the background reactive changes in the lymph node
Final Dx	SKIN ELLIPSE AND UNDERLYING BREAST AND ADIPOSE TISSUE (LEFT), LUMPECTOMY: INVASIVE DUCTAL CARCINOMA - ADDENDUM AND CONSULTATION REPORTS WITH RECEPTORSTATUS TO FOLLOW
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2 Implementation Guide for Transmission of Laboratory-Based Reports to Cancer Registries Using Version 2.5.1 of the HL7 Standard Protocol

2.1 INTRODUCTION

2.1.1 Background

Each state, province and territory has requirements for cancer registries to conduct population-based cancer surveillance. Cancer registries often rely on pathology laboratories to report certain findings to registry officials. In the past, these reports were handwritten or printed in a format unique to each registry or laboratory. Today, laboratories send reportable data to cancer registries electronically. In order to facilitate a standard message format for the transmission of electronic pathology reports, this Guide was developed by NAACCR's Pathology Data Work Group, with extensive technical assistance from Klein Consulting, staff at the Centers for Disease Control and Prevention, Cancer Care Ontario and the Canadian Partnership Against Cancer.

This Guide contains the specifications for sending reportable cancers and benign/borderline intracranial and CNS tumors to appropriate hospital, state, provincial and territorial cancer registries using HL7 messages. The message is specific to any potentially reportable cancer or benign/borderline intracranial and CNS tumor diagnosis and is applicable for most laboratory-reportable findings as defined by NAACCR. This guide specifies the electronic communication of these tumors, consistent with recommended reporting of reportable conditions from laboratories to cancer registries, using HL7 Version 2.5.1. The Implementation Guide follows the specifications described in the HL7 Standard Version 2.5.1 and focuses on one type of HL7 message, the ORU. The Guide provides: (1) a description of the utility and requirement of each data field in the ORU message, (2) examples of complete messages, and (3) tables of recommended codes.

2.1.2 Scope

Although this Guide describes in detail a data exchange protocol for submitting anatomical pathology reports (traditional text-based and synoptic) for reportable tumors (cancers and selected benign/borderline intracranial and CNS tumors) to hospital and central cancer registries, it is not an HL7 or an interfacing tutorial. The reader is expected to have a basic understanding of interface concepts, HL7 messaging standards, and electronic laboratory-based reporting of public health information.

The document is an update to NAACCR Standards for Cancer Registries, Volume V, Pathology Laboratory Electronic Reporting, Version 3.0, which consists of an HL7 Version 2.5.1 implementation guide and the pipe-delimited guide. Any user-defined variations from the standard are described, and electronic copies of this document are available on the NAACCR web site (www.naaccr.org).

Reporting requirements for reportable tumors may vary by hospital, state, district, territory, or province. The NAACCR Standards for Cancer Registries, Volume II, *Data Standards and Data Dictionary*, describes the standards of tumor reportability for national standard-setting organizations in North America.

2.1.3 Works in Progress

Below is a list of topics to be explored in the future.

Customization of Synoptic Reports, Namespaces, and a Central Authority: Typically, anatomical pathology laboratories will customize synoptic cancer pathology report templates from the national standard, e.g. the CAP Cancer Protocols and the eCC. For example, new data items or concepts may be added, which may or may not be of interest to cancer registries, or additions may be made to the existing values or answers for specific data items or questions. The eCC envisions this possibility and recommends the creation of namespace codes to accommodate these local laboratory-specific customizations. The laboratory making the customizations need to

work with the state or provincial/territorial registries to ensure that the encoded values for the customized concepts are consistent with the state/provincial/territorial namespaces and values. The receiving cancer registry will need to be aware of these customizations and adjust mapping software accordingly. There are many issues related to these values including the namespace registration to a central authority at a national or an international level. Work is underway to explore development of a shared extension resource and making it accessible to the registry community on the World Wide Web.

Molecular Markers: A number of the Site-Specific Factors within the Collaborative Stage Data Collection System are related to molecular markers or genetic tests. Some of these molecular marker tests are included as part of the synoptic cancer pathology reports. Typically, an appropriate specimen is sent to a special laboratory to conduct such tests, e.g. CA 19-9. Some cancer registries have implemented systems to receive molecular marker tests results directly from these special laboratories or molecular laboratories. Molecular markers can be sent in the HL7 message identified by their associated LOINC code.

Tissue Inventory: As a result of the increasing interest in banking tissue specimens for research, guidelines for the inclusion of tissue inventory data elements into HL7 pathology messages are of interest to the NAACCR Pathology Data Work Group. An important consideration will be that derived specimens remain associated with their parent in HL7 messages carrying tissue inventory data—for example, a block derived from a specimen would be identified with its own identifier but should also carry an identifier for the parent specimen. The Digital Imaging and Communications in Medicine (DICOM) standards group has done work in this area.

Synoptic Surgery Reports: Standardized synoptic surgery reports have been developed for breast, colorectal, ovarian, head and neck in Canada and implemented in Quebec, Ontario, Manitoba, Nova Scotia, Alberta (as of July 2010). A similar interest has been expressed in the United States. This area needs to be explored to ascertain the implementation status in Canada (where SNOMED CT encoding is underway) and transmission format. There is also an initiative underway within the IHE community as well.

Synoptic Diagnostic Imaging Reports: The concept of synoptic diagnostic imaging reports has been discussed by leaders in the radiology informatics community via the RSNA (Radiological Society of North America). Again, this area needs to be explored to ascertain the status of development of national radiology standards, encoding, and an appropriate transmission format. Further information can be found at: http://reportingwiki.rsna.org/index.php?title=Templates#Oncologic_and_Quantitative_Imaging

Staging Parameters: Several different staging systems are in use. The possible format pertains to the American Joint Committee on Cancer (AJCC) system, but may be readily extended to other systems such as Collaborative Stage Data Collection System. Each staging element is incorporated into a separate OBX to accommodate submission individually.

2.1.4 Contacts

For information about HL7, contact:
Health Level Seven
Phone: (734) 677-7777
Fax: (734) 677-6622
E-mail: hq@hl7.org
Website: www.hl7.org

For information about this *Guide*, contact:
Lori A. Havener, CTR
NAACCR
Phone: (217) 698-0800, ext. 3
Fax: (217) 698-0188
E-mail: lhavener@naaccr.org

2.2 REGISTRY MESSAGING USING HL7

Electronic transmission of cancer pathology reports will flow to cancer registries using the Health Level Seven standard protocol. This guide remains true to the HL7 Version 2.5.1 Final Standard, accepted as an ANSI standard February 21, 2007. The entries below are derived from that Standard for use with electronic laboratory reporting.

2.2.1 HL7 Concepts and Definitions

Message: A message is the entire unit of data transferred between systems in a single transmission. It is a series of segments in a defined sequence, with a message type and a trigger event.

Segment: A segment is a logical grouping of data fields. Segments within a defined message may be required or optional, occur only once, or be allowed to repeat. Each segment is named and is identified by a segment ID, a unique 3-character code.

Field: A field is a string of characters. The segment it is in and the position within the segment identify each field (e.g., PID-5 is the fifth field of the PID segment). Optional data fields need not be valued. Whether a field is required, optional, or conditional in a segment is specified in the segment attribute tables. The designations are: R = Required, RE = Required or empty, O = Optional, C = Conditional on the trigger event or on some other field(s). The field definition should define any conditionality for the field: X = Not supported; B = Left in for backward compatibility with previous versions of HL7. For those fields marked X=Not supported, any data that is sent in these fields may be ignored by the receiver, and conformance and validation checking tools may flag a warning message when they are populated. A maximum length of the field is stated as normative information. Exceeding the listed length should not be considered an error.

Component: A component is one of a logical grouping of items that comprise the contents of a coded or composite field. Within a field having several components, not all components are required to be valued. Examples in this Guide demonstrate both fully valued and partially valued coded and composite fields.

Item number: Each field is assigned a unique item number. Fields used in more than one segment will retain their unique item number across segments.

Null and empty fields: The null value is transmitted as two double quote marks (“”). A null-valued field differs from an empty field. An empty field should not overwrite previously entered data in the field. The null value means that any previous value in this field should be overwritten.

Data type: A data type restricts the contents and format of the data field. Data types are given a 2- or 3-letter code. Some data types are coded or composite types with several components. The applicable data type is listed and defined in each field definition. Appendix B provides a complete listing of data types used in this document and their definitions. Note that as of HL7 version 2.5.1, all of the older ‘CM’ data types (‘composite’) have been renamed to explicit data types having explicit field definitions, and referred to by name in conformance profiles. For instance, the ‘CM’ that was used in OBR-32 Principal Result Interpreter has been changed to ‘NDL’; it has the same fields as the ‘CM’ in version 2.3.1, but they are now an explicit separate data type.

Delimiters: The delimiter values are given in MSH-2 and used throughout the message. Applications must use agreed-upon delimiters to parse the message. The recommended delimiters for laboratory messages are <CR> = Segment Terminator; | = Field Separator; ^ = Component Separator; & = Sub-Component Separator; ~ = Repetition Separator; and \ = Escape Character.

Note: Examples in this guide often include the notation "<CR>" at the end of segments. This is a document convention to aid the human reader and should be interpreted as a single ASCII carriage return character (13, 0x0D). HL7 messages do not have these four characters "<CR>" at the end of a segment, just the carriage return character.

Message syntax: Each message is defined in special notation that lists the segment 3-letter identifiers in the order they will appear in the message. Braces, { }, indicate that one or more of the enclosed group of segments may repeat, and brackets, [ ], indicate that the enclosed group of segments is optional.

Trigger events: The HL7 Standard is written from the assumption that an event in the real world of healthcare creates the need for data to flow among systems. The real-world event is called the trigger event. For example, the trigger event, a patient is admitted may cause the need for data about that patient to be sent to a number of other systems. The trigger event, an observation (e.g., a CBC result) for a patient is available, may cause the need for that observation to be sent to a number of other systems. When the transfer of information is initiated by the application system that deals with the triggering event, the transaction is termed an unsolicited update.

Z segments: All message types, trigger event codes, and segment ID codes beginning with Z are reserved for locally defined messages. No such codes will be defined within the HL7 Standard.

Field Lengths: As per standard HL7 encoding, the lengths of the fields in the segments are not normative; they are advisory only. Making the fields longer or shorter is subject to system requirements and limitations on both sending and receiving ends of the interface. The lengths that are published in this Guide are recommended maximum lengths for the fields.

2.2.2 General Message Construction Rules

Encoding Rules for Sending:

- Encode each segment in the order specified in the abstract message format.
- Place the Segment ID first in the segment.
- Precede each data field with the field separator.
- Encode the data fields in the order and data type specified in the segment definition table.
- Components, subcomponents, or repetitions that are not valued at the end of a field need not be represented by component separators. The data fields below, for example, are equivalent:
  `|^XXX&YYY&&^|` is equal to `|^XXX&YYY^|`
  `|ABC^DEF^^|` is equal to `|ABC^DEF|`
- Segments that are not valued to the end do not need to contain empty field separators.
- End each segment with the segment terminator (hex CR).

Encoding Rules for Receiving:

- If a data segment that is expected is not included, treat it as if all data fields within were not present. That is, if the missing segment contained required fields, error the message; if the missing segment did not contain any required fields, the message should not error.
- If a data segment is included that is not expected, ignore it; this is not an error.
- If a data field is included that is not expected, ignore it; this is not an error.

2.2.3 Data Types Referred To in this Implementation

All fields that carry data in NAACCR messaging (defined in the Static Model) are associated with an HL7 data type, which defines the internal structure and data layout of the field. Although some fields are simple unformatted strings or numbers, most are complex composites whose components are delimited.

Only a subset of the data types defined in the HL7 Version 2.5.1 Standard is used for NAACCR Cancer Registry Messaging. Those that are referred to in the Static Model definitions are listed here. For the complete definition of all of the details of these data types, please see *Appendix B Detailed HL7 Data Type Specifications*. Please also note that the data types for elements that are Not Supported in NAACCR messaging are not included here; for details on those data types, please refer to the HL7 Version 2.5.1 Standard, Chapter 2A.

CE - coded element
CF – coded element with formatted values
CNE – Coded with No Exceptions
CNN -composite ID number and name
CQ - composite quantity with units
CWE – coded with extensions
CX - extended composite ID with check digit
DLD – discharge to location and date
DR – date/time range
DT – date
DTM – date/time
ED – encapsulated data
EI - entity identifier
EIP – entity identifier pair
ELD – error location and description
ERL - error location
FN – Family Name
FT - formatted text data
HD - hierarchic designator
ID - coded value for HL7-defined tables
IS - coded value for user-defined tables
MSG - Message Type
NDL – name with date and location
NM – numeric
PL - person location
PRL – parent result link
PT - processing type
SI - sequence ID
SN - structured numeric
SPS – specimen source
ST - string data
TM – time
TS - time stamp
TX - text data
VID - version identifier
XAD - extended address
XCN - extended composite ID number and name for persons
XON - extended composite name and identification number for organizations
XPN - extended person name
XTN - extended telecommunication number

Please note that a number of data types (such as PN) which were used in the version 2.3.1 specification have been removed from HL7 Version 2.5.1. These obsolete data types are:

CK - composite ID with check digit
CM – composite
PN - person name
TN - telephone number

Please refer to HL7 Standard version 2.3.1 for details on these obsolete data types.

2.2.4 Default Values

A few of the fields in the message have default values, meaning that senders of messages must populate the field with the default value if they do not have a case-specific value for that field. Non-required fields that are left empty by senders if they do not have data for the field will have the default value applied when the message is processed at the central cancer registry. This applied default value is used for quality control monitoring purposes. The following table lists the defined default values for these fields.

Fields with NAACCR Default Values			
Field ID	**Field Name**	**Default Value**	**Comment**
MSH-21	Message Profile Identifier	VOL_V_40_ORU_R01^NAACCR_CP	Identifies the profile for the ORU^R01 message in this Specification
PID-3.5	Patient ID.Identifier Type Code	MR	When the repetition contains a Medical Record #
PID-3.5	Patient ID.Identifier Type Code	SS	When the repetition contains a Social Security #
PID-3.5	Patient ID.Identifier Type Code	PI	When the repetition contains a Patient Internal Identifier
PID-10.3	Race.name of coding system	HL7 0005	HL7 Race Table values (see Appendix A for table values)

2.2.5 Identifiers in HL7 Pathology Report Messages

There are a number of real-world entities that are referred to in cancer registry messaging, many of which have persistent unique identifiers. These include clinicians, facilities, instances of reports in laboratory systems, specimens, and patients, among other things. These are listed, with their associated message field position and specific HL7 identifier values that define what type of identifier is populated.

The table below lists a number of fields in the message that contain such identifiers, and notes the NAACCR item name and numbers for these. The identifier types are specified in the table where they are directly related to specific NAACCR data items; otherwise the column contains "others", which indicates all of the other identifier types listed in the second table below are mapped to the same NAACCR item.

Note that the NAACCR item numbers 7000 and higher in the table below (and referenced elsewhere in this Guide) were specifically added to the NAACCR set in support of HL7 Messaging as defined in this Volume V. Note also that "N/A" in any of the cells in the table indicate "Not Applicable".

NAACCR Item Name	NAACCR Item #	HL7 Field	HL7 Field Name	Identifier Type	Comments
Social Security Number	2320	PID-3	Patient identifier list	SS	Patient SSN
Medical Record Number	2300	PID-3	Patient identifier list	MR	Patient MRN
Path Patient ID Canadian	7570	PID-3	Patient identifier list	others	Any other types of patient identifiers, including the Canadian provincial health card number
Path Patient ID Other	7578	PID-3	Patient identifier list	others	Other types of Patient identifiers, including a Patient ID local to the laboratory
Physician Managing Other	7580	PV1-7	Attending Doctor	others	Other types of individual provider IDs
NPI Physician Managing	2465	PV1-7	Attending Doctor	NPI	National Provider ID
Physician Managing	2460	PV1-7	Attending Doctor	MD	State Medical license number
Physician Follow-up	2470	PV1-8	Referring Doctor	MD	State Medical license number
NPI Physician Follow-up	2475	PV1-8	Referring Doctor	NPI	National Provider ID
Physician Follow-up Other	7590	PV1-8	Referring Doctor	others	Other types of individual provider IDs
Physician 3	2490	PV1-9	Consulting Doctor	MD	State Medical license number
NPI Physician 3	2495	PV1-9	Consulting Doctor	NPI	National Provider ID
Path Physician 3	7600	PV1-9	Consulting Doctor	others	Other types of individual provider IDs
No NAACCR item	N/A	PV1-17	Admitting Doctor	others	Other types of individual provider IDs
No NAACCR item	N/A	PV1-17	Admitting Doctor	NPI	National Provider ID
Path Ordering Facility Number NPI	7195	ORC-21	Ordering Facility Name	NPI	National Provider ID
Path Ordering Facility Number	7190	ORC-21	Ordering Facility Name	AHA	American Hospital Association Number

Path Ordering Facility Number Other	7198	ORC-21	Ordering Facility Name	others	Other types of Facility identifiers
Path Number Hosp	7610	OBR-2	Placer Order Number	N/A	Requisition number or Surgical Pathology Number (from Hospital)
Path Report Number	7090	OBR-3	Filler Order Number	N/A	Laboratory Report Number
No NAACCR item	N/A	OBR-3	Filler Order Number	N/A	Accession Number
Physician Primary Surg Other	7620	OBR-10	Collector identifier	others	Other types of individual provider IDs
Physician Primary Surg	2480	OBR-10	Collector identifier	MD	State Medical license number
NPI Physician Primary Surg	2485	OBR-10	Collector identifier	NPI	National Provider ID
Ordering Client/Phys—Lic No Other	7108	OBR-16	Ordering Provider	others	Other types of individual provider IDs
Ordering Client/Phys—Lic No	7100	OBR-16	Ordering Provider	MD	State Medical license number
Ordering Client/Phys—Lic No NPI	7105	OBR-16	Ordering Provider	NPI	National Provider ID
Pathologist Lic Number Other	7308	OBR-32	Principal Result Interpreter	others	Other types of individual provider IDs
Pathologist Lic Number	7300	OBR-32	Principal Result Interpreter	MD	Medical license number
Pathologist Lic Number NPI	7305	OBR-32	Principal Result Interpreter	NPI	National Provider ID
Producer ID	7515	OBX-15	Producer's Reference	CLIA	Laboratory CLIA number
Path Responsible Observer	7630	OBX-16	Responsible observer	MD	Medical license number
Path Responsible Observer NPI	7635	OBX-16	Responsible observer	NPI	National Provider ID
Path Responsible Observer Other	7638	OBX-16	Responsible observer	others	Other types of individual provider IDs
Path Performing Organization Name	7640	OBX-23	Performing Organization Name	others	Other types of organizational provider IDs
No NAACCR item	N/A	SPM-2	Specimen ID	N/A	Specimen Identifier or Accession Number
No NAACCR item	N/A	SPM-30	Accession ID	others	Accession Number
No NAACCR item	N/A	SPM-31	Other Specimen ID	others	Other types of specimen identifiers

Identifier Types

The following table lists the identifier types commonly used in XCN and XON data types when identifying providers, either individual clinicians or organizations (hospitals and laboratories).

Identifier Type Code	Kind of Identifier	Individual or Organization
UPIN	Unique provider ID	Individual
NPI	National Provider ID	Individual
DEA	Drug Enforcement Administration #	Individual
DN	Doctor number (local)	Individual
MCD	Practitioner Medicaid number	Individual
MCR	Practitioner Medicare number	Individual
MD	Medical license number	Individual
PRN	Provider number (local)	Both
SL	State license number	Organization
LN	License number (other than State)	Organization
AHA	American Hospital Association Number	Both
CLIA	CLIA laboratory number	Organization

There are a large number of different identifiers in wide use for individual providers and provider organizations. The use of NPI (National Provider ID) is encouraged if available in order to reduce variability in the ways

providers are identified to registries. It is important to include the Identifier Type Code when sending one of these identifiers. In most cases, there will always be a national or jurisdiction-wide identifier available; it is preferable to use one of these to identify providers rather than local identifiers.

Laboratories typically assign an identifier for the information recorded for the analysis requested on a received specimen(s) when they arrive at the laboratory. This identifier is specific to the laboratory; when part or the entire specimen is sent out for additional or supplemental analysis to another laboratory, a new identifier will be assigned by the supplemental laboratory. In order to maintain traceability of these identifiers, when dataset from both laboratories are sent in a single message, the identifier assigned by the laboratory sending the message should be populated in OBR-3 Filler Order Number (see section 2.8.2 Observation Request Segment) of the OBR for the pathology report collection, and the OBR-3 value for each of the contained reports should contain the identifier assigned by the laboratory creating that report.

The identifier contained on the pathology study requisition form, commonly referred to as the requisition number, should be reported in the registry message in the OBR-2 Placer Order Number.

The specimen at a laboratory is typically identified with the same number as the overall report, record in the AP LIS, and the case itself – the accession number, generated when the requisition and specimen arrive and are accepted at the laboratory. However, in some circumstances, there will be multiple specimens, and the different specimens may end up generating different reports (see the complex use cases described in Appendix D). In such circumstances, it is recommended that identifiers of the different specimens be reported in the SPM-2; the message structure (see below) includes an SPM segment with each block of the message starting with an OBR.

Note that on rare occasion's different specimen IDs may be associated with various components of a large multi-specimen case, such as the example in Appendix D with eight different types of tissue included. If this circumstance occurs, and the additional specimen identifiers are to be transmitted to the registry in the message, then the field SPM-31 should be used for this purpose; do not send the additional specimen identifiers in OBX segments. If multiple accession numbers from the same laboratory are to be sent as part of a single report (with a single OBR segment), then the SPM-30 should be used to carry these extra Accession numbers.

2.3 CANCER REGISTRY MESSAGE DEFINITION

The transmitted reports sent to cancer registries may be of different kinds, arrive at different times from different sending facilities and institutions, and may be formatted and/or encoded using different styles of reporting. The message definition in this guide is designed to support all of these permutations in an unambiguous and straightforward manner.

The different kinds of reports that arrive at a registry relating to the same patient and specimen are linked and consolidated at a registry, regardless of whether they arrive together in a single message or arrive at different times in different HL7 messages. There is a report on the primary cancer, but there may also be any number of supplemental reports, or even additional reports. These contain additional information attached to the pathology report, and are often transmitted after the original report has been issued. These reports may address subsequent testing or stains, comparison with previous specimens, second opinions from other pathologists or laboratories, a change in diagnosis resulting from re-examining the specimen(s) or sampling new areas within the specimen, autopsy reports, etc. These reports may be encoded using any of the styles discussed above in section 1.4.2. e.g., an addendum to a primary report in narrative style could also be in traditional narrative style or could be encoded using synoptic style. These supplemental reports may be called Addenda, Consult Notes, Amendments, Supporting Studies, Second Opinion Notes, or by other local vernacular.

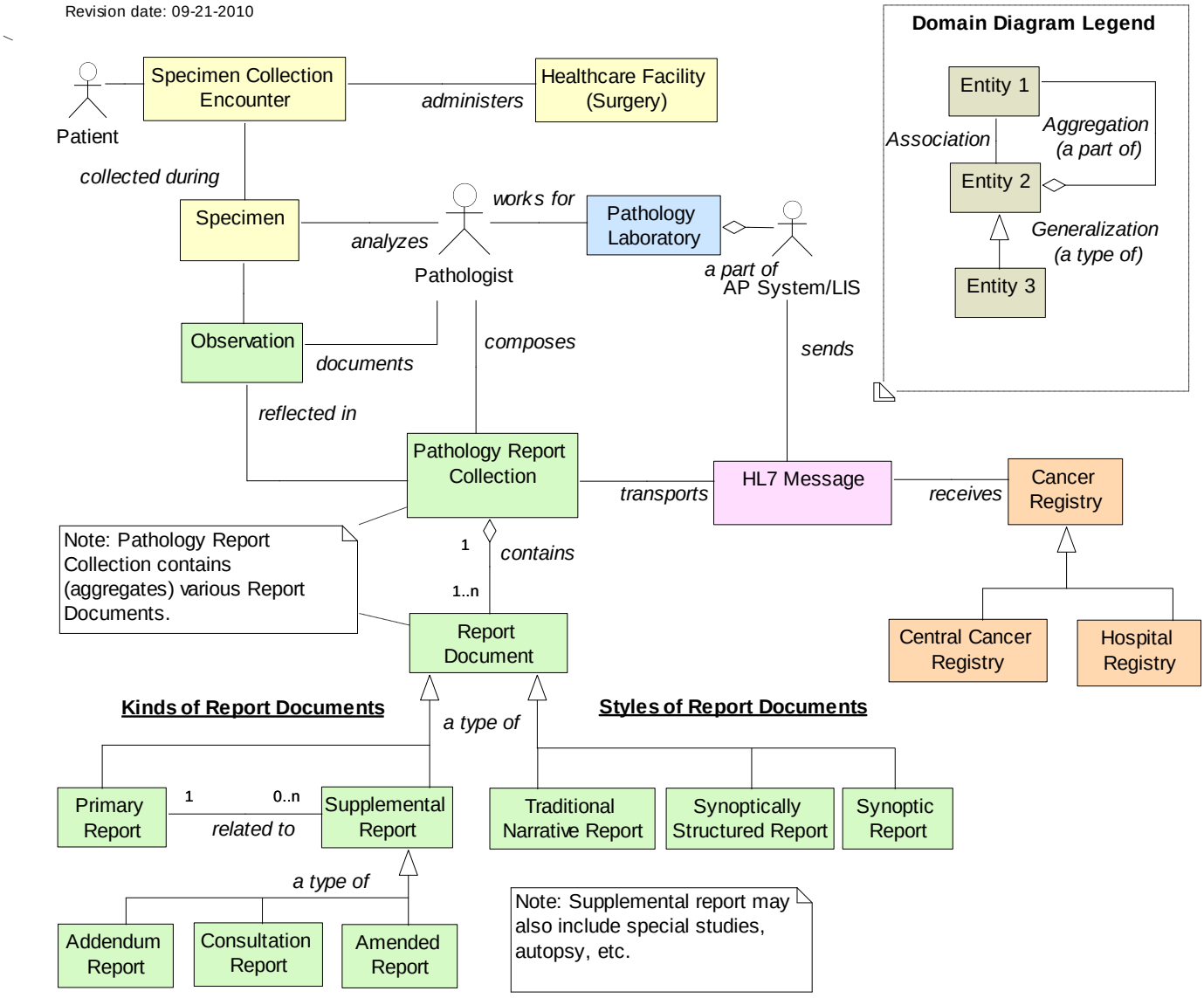
The overall *logical* structure of the complete package of information, regardless of whether it is transmitted to the registry in one or several messages, can be conceptualized as follows:

Pathology Report Collection	This may or may not be present, and if present functions as a 'container' or 'collector' of the several separate documents making up the overall reported data collection. This is a similar structure to a laboratory test panel. Each of the contained reports is a report document. This item is indicated in the message with a LOINC code of 60567-5 Comprehensive pathology report panel. This is particularly useful for transmitting the same Pathology Report in multiple styles in one message, such as both a narrative and a synoptic version of the same report. It is only used in a message when more than one document on the same patient for the same analysis are sent in a single message, such as a main report plus addenda and consults, or the report being transmitted in different styles of reporting.
Primary Report	This is identified with a LOINC code of "11529-5 Surgical pathology study", and represents the report generated by the Pathologist for the Primary tumor.
Consult Report	This is identified with a LOINC code of "60570-9 Consultation note".when the Consult is narrative, and with the LOINC code "60571-7 Consultation note.synoptic" when the report is synoptically structured or encoded.
Addendum	This is identified with a LOINC code of "35265-8 Pathology report addendum in Specimen Narrative" when the Addendum is narrative text or the LOINC code "60569-1 Report addendum.synoptic" if the addendum is synoptic in reporting Style. Additional Supplemental Report(s), such as "18743-5 Autopsy note", or an additional and essentially duplicate copy of the primary pathology report but encoded at a different reporting level, a pathology report which identifies multiple cancers or secondary tumors, amendments to reports issued at an earlier time, or other kinds of reports.

For a simple example of an HL7 Cancer Registry message, see Appendix D section D.1 Simple HL7 Message Examples.

2.3.1 Registry Reporting Domain Model

The overall high level model of the collection of reports that may be contained in the registry message is shown in the diagram below. Note that this domain model covers the subset of cancer pathology studies and reporting that involves collection and construction of the information set to be transmitted to registries using HL7 as per this Guide.



Descriptions of Entities in Domain Model

Patient A person who requires or has required medical care. The person may be waiting for this care or may be receiving it or may have already received it. This is the person from whom a specimen is collected, and for whom the diagnostic study is being performed.

Specimen Collection Encounter This is the event where a clinician interacts with a patient to obtain a specimen for the pathology study.

Healthcare Facility (Surgery) This may be a surgeon, technician, surgical department, or hospital which manages a patient, and collects specimens for pathological analysis for cancer. It also refers to the Surgical System and/or the Patient Records System at the facility in which a surgical center which collects specimens is

housed. The system receives results, and in many cases also is capable of sending results. This can also be thought of as the Ordering Facility.

Specimen A specimen is a sample taken from a patient. A specimen is a portion or quantity of material for use in testing, examination, or study.

Pathologist This is the physician specialist, who examines and analyzes the specimen(s), identifying and recording observations and findings for the prepared specimen. The pathologist also records findings for the case overall, which may not be specimen-specific in a multi-specimen case.

Pathology Laboratory This is the Pathology Laboratory organizational entity (stand alone, or in-hospital department) which handles the specimen, and does the preparation for the pathology study. In most cases it also incorporates an AP (Anatomic Pathology System) and/or LIS (Laboratory Information System) which assigns specimen and accession numbers, and may send and receive HL7 messages. This organization physically handles the specimen, treating and preparing it for analysis.

AP System/LIS This is the computer system at a pathology laboratory which is used for workflow, and to capture the information from the clinicians that will be contained in the pathology report(s). The AP or LIS system at a pathology laboratory must be capable of sending results; some are also capable of receiving results.

Observation These are a set of information that are collected and supplied to the pathologist with the specimen(s) to assist in understanding the context of the case. It includes demographic information about the patient, clinical history of the patient, and perhaps other information.

Pathology Report Collection This is a "container" for various report documents, e.g., primary report, addendum report, supplemental reports, etc. where the different kinds of reports are transmitted together in a single HL7 message. These are grouped together as a comprehensive collection as they often need to be interpreted together as a set.

HL7 Message A message is the entire unit of data transferred between systems in a single transmission. It is a series of segments in a defined sequence, with a message type and a trigger event. It contains the information making up the report(s), formatted as specified in this guide.

Report Document A collection of information intended to make up the documentation sent to a Cancer Registry. A report document may be of different kinds of reports, such as a primary report, addendum report, etc. Any report document may be formatted/structured in different styles, such as narrative or synoptic.

Primary Report This is the principal pathology report that contains all of the pathologic and prognostic information associated with the patient's surgical case (specimen(s)). Typically the primary pathology report is broken into general headings: clinical history, final diagnosis, macroscopic or gross description, microscopic description, and comments.

Supplemental Report This refers to additional information attached to the pathology report, often after the original report has been issued. These reports may address subsequent testing or stains, comparison with previous specimens, second opinions from other pathologists or laboratories, or a change in diagnosis resulting from re-examining the specimen(s) or sampling new areas within the specimen. These reports may occur within any of the format styles or levels discussed in the prior section, e.g. an addendum could be in traditional narrative format or a synoptic format.

Addendum Report An addendum report is a type of ancillary report that contains additional information, typically the results of ancillary diagnostic studies completed after the original pathology report has been released. By definition, addendum reports provide additional information that may come from flow cytometry, and immunohistochemistry as examples. This additional information does not result in a change to the final diagnosis of the original pathology report. If the intent of this ancillary report is to change a previously rendered diagnosis or to change other content, then the report should be titled ‘‘Amended Report’’ (see below). These reports may be appended to the original pathology report and resubmitted to the cancer registry.

Consultation Report A consultation report is a report that provides advice or guidance by a second or additional expert; or a deliberation by pathologists on a diagnosis and/or interpretation of diagnostic test results. This may be a second opinion of the specimen diagnosis.

Amended Report Amended reports are created to correct errors or discrepancies in the original final report. Typical reasons to create an amended report include correction of typographical errors, modification of the final diagnosis, or documentation of the resolution of a specimen-labeling discrepancy. Note: no special LOINC code is available for Amendments. The LOINC code selected is the code for the report that is being amended.

Traditional Narrative Report A cancer pathology report that is in a text-based or narrative-style format with specific information contained in the narrative. These reports are generally dictated by a pathologist and then transcribed by a transcriptionist.

Synoptically Structured Report A cancer pathology report that has been structured to follow a published structured checklist of information.

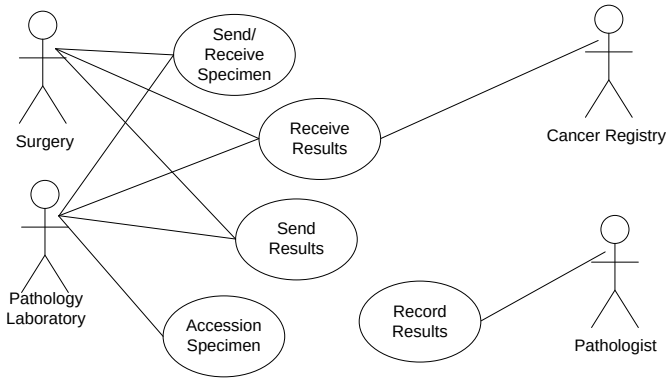
Synoptic Report A cancer pathology report which in addition to being structured synoptically, the data is also fully encoded, captured, and stored in the AP/LIS or synoptic reporting application as discrete question-and-answer pairs.

Cancer Registry This is the organization which receives detailed pathology results where cancer is identified, as per statutory regulation.

Central Cancer Registry A type of cancer registry that has all state/provincial/territorial or even national data that can be used for population based cancer surveillance.

Hospital Cancer Registry A type of cancer registry that has data that is specific to that community.

2.3.2 Use Case Model



Actors

- Surgery This may be a surgeon, technician, surgical department, or hospital which manages a patient, and collects specimens for pathological analysis for cancer. It also refers to the surgical system and/or the patient records system at the facility in which a surgical center which collects specimens is housed. The system receives results, and in many cases also is capable of sending results.
- Pathology Laboratory This is the pathology laboratory organizational entity (stand alone, or in-hospital department) which handles the specimen, and does the preparation for the pathology study. In most cases it also incorporates an AP (Anatomic Pathology System) and/or LIS (Laboratory Information System) which assigns specimen and accession numbers, and may send and receive HL7 messages. This organization physically handles the specimen, treating and preparing it for analysis. The AP or LIS system at a pathology laboratory must be capable of sending results; some are also capable of receiving results.
- Pathologist This is the physician, specialist, or team, who examines and analyzes the specimen(s), identifying and recording observations and findings for the prepared specimen. The pathologist also records findings for the case overall, which may not be specimen-specific in a multi-specimen case.
- Cancer Registry This is the organization which receives detailed pathology results where cancer is identified, as per statutory regulation.

Processes

- Send/Receive Specimen The collected specimen, or specimens, are sent by surgery or other collectors, and received by the path lab for a pathology study, along with various identification and labeling information. This process also includes the processing and the physical preparation of the specimen blocks and slides.
- Accession Specimen The collected specimen(s) are received for the pathology study, and the identification and labeling information is recorded for later use in sending the results. This process also includes the processing of the specimen to prepare slides to be read by the pathologist.
- Record Results The observations and findings from the pathologist and other specialists that participate in the pathology study are captured, where they can be later incorporated into messages to be generated. This is both the origination of new results, and revising existing results.
- Send Results The observations and findings that result from the pathology study are sent and received by the path lab, the cancer registry, and the originating surgery (hospital and/or clinicians) using the format and encoding rules for the HL7 ORU_R01 message specified in this document.
- Receive Results The HL7 message containing results is received by a system and optionally acknowledged, then processed and stored in the local data store.

Use Case Storyboard

There are various business rules in healthcare settings that require the sending of clinical information to central cancer registries when cancers are discovered. In general, one or more specimens are collected from a patient, sent to one or more laboratories to be analyzed and the findings are returned to the setting where the study was initiated before the finalized results are reported to the cancer registry. Three use cases are detailed in this section to illustrate different workflows implementing this basic process, and the handling of identifiers and reporting for these workflows.

2.3.2.1.1 Single Hospital Specimen Processing and Reporting

A surgical center collects one or more specimens from a patient and sends them to a pathology laboratory where they are accessioned (labeled with identifiers) and prepared for analysis by the pathologist and other clinicians. The findings from the clinicians are recorded and sent to the cancer registry and back to the surgical center electronically, using the message format described in this document. The messages have sufficient (if not complete) labeling information such that the surgical center and the cancer registry can understand all pertinent details of the pathology study.

2.3.2.1.2 Specimen Processing and Reporting Using a Service Model

A surgical center collects one or more specimens from a patient and sends them to a regional service which supplies pathology laboratory analysis services to many surgical centers on a contractual basis. The service maintains its own patient and laboratory information systems, as well as their own processes and workflows for collecting and saving clinical results and reports. When the service receives the specimen(s), they are accessioned and patient records may also be created. The service may itself embody the physical laboratory facility, or it may contract with additional pathology laboratories where the collected tissue is prepared for analysis by the pathologist and other clinicians. Both gross and microscopic observations are collected by the service. The findings and results are recorded and stored on the local system. They are then sent to the cancer registry and may be sent only on paper back to the surgical center, which may not have its own electronic system for sending and receiving HL7 messages; HL7 messages are sent to the surgical center if the systems there are capable of receiving it. The HL7 message is also sent to the central cancer registry, where it must be linked to any previously received messages from the service on the same specimen. Messages sent to the registry must contain sufficient information to enable this linking operation. In some cases, the HL7 message may be sent to the registry from the surgical center.

2.3.2.1.3 Multiple Hospital Processing and Reporting with Consults

A surgical center collects one or more specimens from a patient and sends them to a pathology laboratory where they are accessioned (labeled with identifiers) and prepared for analysis by the pathologist and other clinicians. The findings from the clinicians are recorded and sent to the cancer registry and back to the surgical center electronically, using the message format described in this document. In addition, some or all of the specimen(s), along with the results, are forwarded to another pathology laboratory with a consultation request, which asks the second laboratory to perform additional (or repeat) analyses of the specimen(s). The specimen(s) are accessioned again at the consulting laboratory, additional analysis is performed, and new/additional results are recorded. These new results are returned to the requesting laboratory, who may append them to the original report (or append or otherwise reference the new findings), and sends the combined result back to the requesting facility. Any of these facilities may send the results to the cancer registry. Alternatively, the consulting laboratory may send only their own results directly to the cancer registry, and sufficient identifying information must be present in such a message to permit the registry to merge the reports from the separate sources. These alternate flows tend to be messaging facility and/or jurisdiction specific, and may be driven by the messaging capabilities of the participants. See Appendix D for an example of this.

2.3.3 Dynamic Interaction Model

This section describes in detail three different scenarios for specimen processing and reporting involving different numbers of facilities and different ways of assigning specimen identifiers and accessing numbers to the specimens. Each scenario is documented with a process flow diagram, followed by an interaction diagram showing specific sequences of interactions making up the dynamic definition for the scenario. Each of the scenarios is described in a section below. In the interaction diagrams, the interactions that are implemented as HL7 messages are indicated with a dashed line; all other interactions are shown with solid lines.

Single Hospital Specimen Processing and Reporting

The case of a flow of information involving one hospital involves the communication between a specimen collector (generally the surgical department of a hospital or ambulatory surgery center), the pathology laboratory, and the cancer registry. The source of the gross observations and findings about the specimen are generated by the pathologist and surgeon for the case, and may include observations from other participants in the process working in the laboratory. The source of the microscopic observations and findings about the specimen are generated by the pathologist for the case, and may include observations from other participants in the process working in the laboratory.

The following process flow diagram illustrates this simple case, and the sequence of processes and functions that occur, from the collection of the specimen to the transmission of the cancer report both to the cancer registry and back to the original collecting facility.

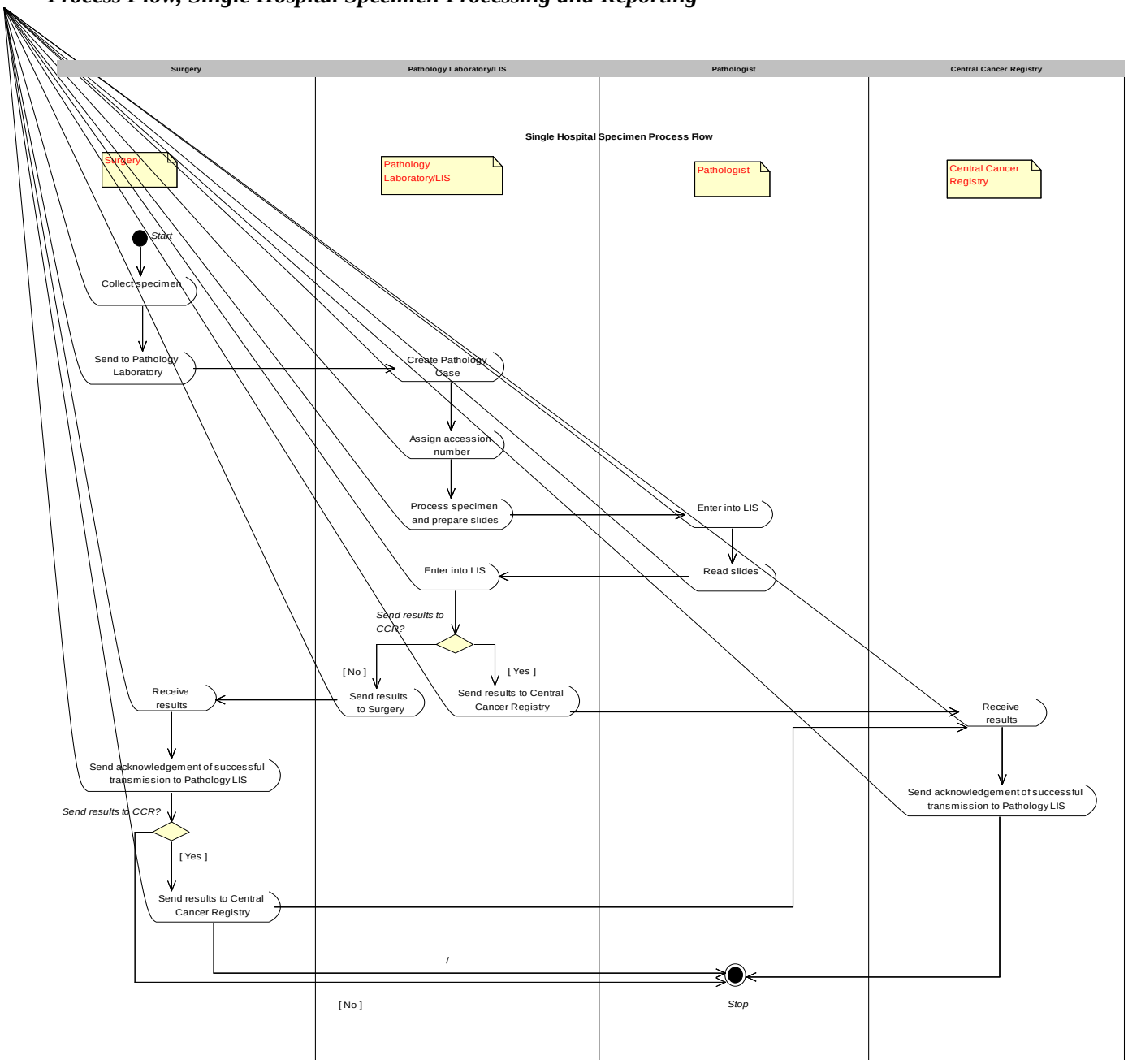
In this common case, one or more specimens are removed from a patient at a surgical center, marked “surgery” in the diagram. This is generally, but not always, in a hospital. The specimen(s) are placed in containers, with the appropriate fixative and labeled. The appropriate documentation is completed, and the entire package is physically transported to a pathology laboratory, which may or may not be in the same facility. In the laboratory, the case is created in their computer system, and an accession number identifying the received specimen(s) is created and entered. The specimen is processed through a sequence of operations, and slides are created. Observations may be recorded during these processes, and saved with the case in the laboratory system.

The slides are then passed to a pathologist, who microscopically examines them and generates a collection of observations and findings. The results of the examination may be in different forms, depending upon the technical capabilities and setup of the workflow in the laboratory, and may also involve other staff such as a transcriptionist to enter dictated observations from the pathologist into the case record on the laboratory system. Upon completion of the gathering and entering of the observations and findings, this set of case results is sent to the system at the facility where the surgical center is located, employing the HL7 ORU_R01 message that is defined in this specification. By institutional policy, the message may also be sent to the cancer registry.

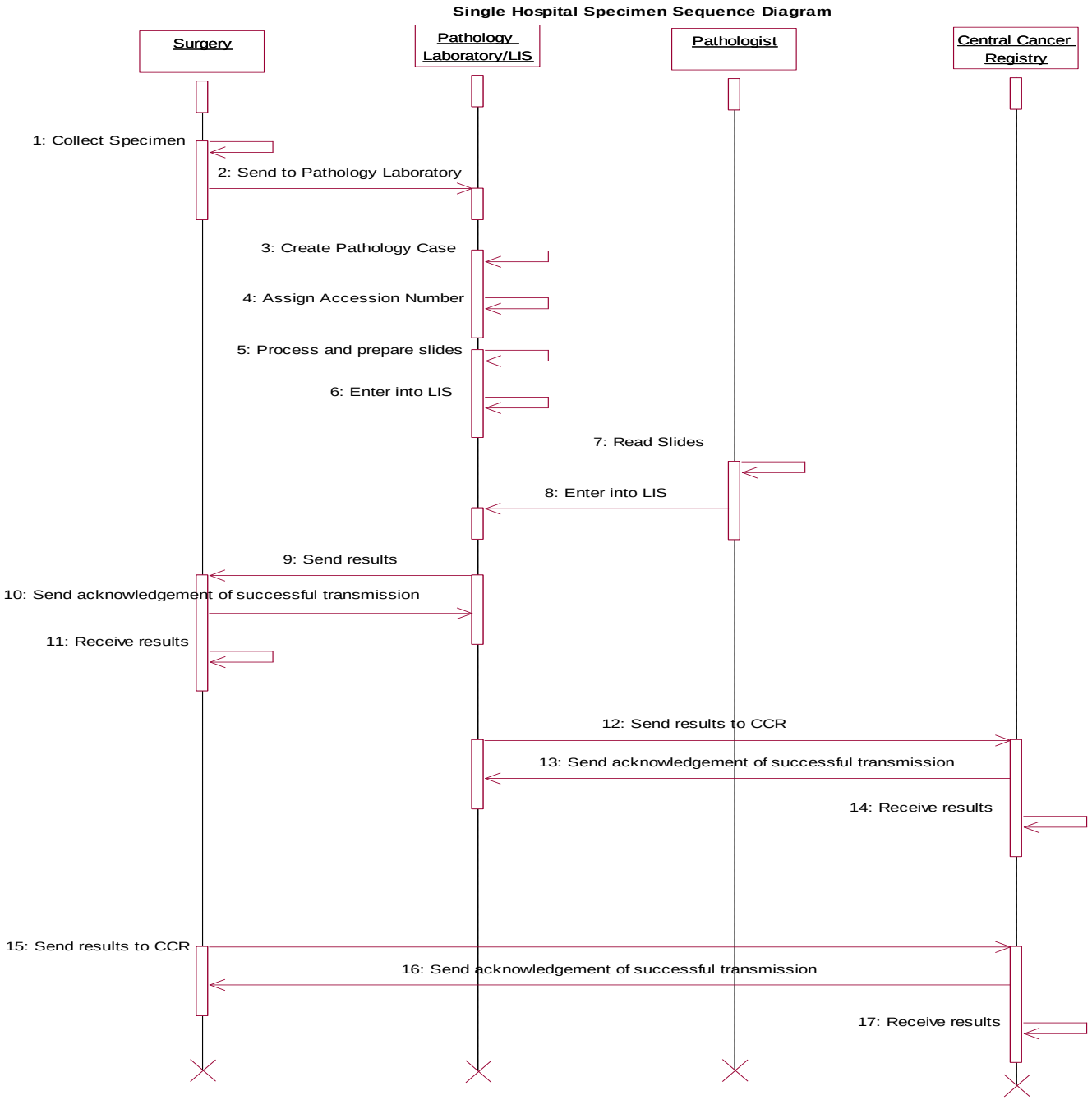
The system at the facility where the surgical center is located receives the results message, extracts the case results, and stores the information in their own patient record. In some cases, institutional or statutory requirements trigger an additional transmission of the case results to the cancer registry from the system at the surgical center; the policies are generally set so that if the laboratory sends to the cancer registry, the system at the surgical center does not, whereas if the laboratory does not send the results to the cancer registry, they must be sent from the hospital system. This message may or may not have additional case information unavailable to the laboratory and relative to the documented cancer from the Patient Record system. Upon receipt of either one of these messages, the cancer registry performs the mapping and processing of the information and storage into their own system databases.

The HL7 message example shown in Appendix D illustrates and example of a report that is generated from this flow and sent to the cancer registry.

Process Flow, Single Hospital Specimen Processing and Reporting



Interactions for Single Hospital Specimen Reporting



Interaction Descriptions

1. Collect Specimen A specimen is a piece of tissue or other material collected from a patient and delivered to a pathology department or facility for examination which is uniquely identified. If a specimen is separated into parts, each of those parts which are uniquely identified is also a specimen which has a relationship to the piece from which it was separated. The specimen may also be a collection of several specimens with a single identifier which is uniquely associated with the collection. It is a specimen if it is considered a single discrete, uniquely identified unit that is the subject of one or more steps in the laboratory workflow. A specimen may be a tissue item, tissue section, tissue core, tissue spot, smear sample, touch preparation, dispersion, or other similar subject of study. Each of the assigned identifiers is created and tracked by LIS systems and laboratory procedures. The tissue specimen is collected during the surgical procedure and is placed into a specimen container with the appropriate fixative. The container is labeled with the patient identifier and a hospital requisition number. A second surgical pathology requisition containing additional details about the patient's specimen and clinical history may also be sent along with the specimen and hospital requisition form (see the examples in the E-Path Guidelines document). The information on both requisitions is typically filled out in surgery.

2. Send To Pathology Laboratory The tissue samples, along with the patient identifier and the requisition information, are sent to the pathology laboratory. The information is usually sent non-electronically, but there may be an evolution in the future to integrate electronic ordering systems and synoptic surgical reporting solutions with AP LIS systems.

3. Create Pathology Case The patient identifier and requisition information is entered into the pathology LIS at the pathology laboratory and the case record is created in the system.

4. Assign Accession Number An accession ID is assigned to the specimen collection and associated with the case in the LIS. One or more specimen IDs may also be assigned at this point, depending upon whether or not the case is comprised of multiple specimens.

5. Process and prepare slides The staff at the pathology laboratory process the specimen, create the blocks, and do the preparation and labeling of the slides to be read by the pathologist. Typically, institutions have standard protocols for the stains and other processing based on the tissue types. In the most common case a laboratory professional, either a pathology assistant or the pathologist, examines the specimen or the collection and dictates its gross observations. Further observations are dictated as the specimen is sliced or otherwise divided into portions to be processed for slide preparation. This is usually paraffin blocking, but may also be cryogenic or other operations. These dictated observations are usually referred to as "gross findings" or "gross observations". After the 'grossing' process is complete, the prepared portions of the specimen(s) are transferred to other laboratory personnel who perform the slicing, mounting, and staining of the tissue, and finalization of the slides. The slides are almost always labeled with individual identifying information. Generally there are no dictated observations entered into the result record that document the operation of staining and slide preparation. Occasionally, additional iterations of processing and preparing slides for additional studies may be triggered at this time.

6. Enter into LIS The gross observations are entered into the case record into the pathology LIS. This may be done at the time of gross observation with the use of voice recognition software or may be dictated by either the pathologists or pathologist's assistant and later transcribed into the LIS by a transcriptionist. Either way, these observations are made available to the pathologist when the slides are read.

7. Read slides The slides are made available to the pathologist together with the necessary identification information to access the gross observations and any patient or surgical information that was received from surgery with the specimen. The pathologist examines the slides and records their observations and

findings. Additional iterations of processing and preparing slides for additional studies may be triggered at this time.

8. Enter into LIS The observations and findings are entered into the pathology LIS as results for the report, and the system groups and assembles the separate observations into the final report. This may be done by separate staff using a dictation from the pathologist, or may be entered directly into a system by the pathologist or other staff. Regardless of where the reading is done, the results are entered into the system at the pathology laboratory. The report then goes through various stages of error checking, validation, and final signing to move to a complete status, whereupon it is made available for subsequent operations. The details and timing of these operations are not within the scope of the cancer registry reporting described in this document.

9. Send results The case information that has been recorded in the laboratory system is converted into an HL7 ORU_R01 message as specified in this guide, and sent to the surgeon and other care providers, such as the primary care physician or members of a cancer care team.

10. Send acknowledgement of successful transmission The system that receives the HL7 message at surgery sends an acknowledgement message back to the pathology laboratory messaging system upon successful receipt of the HL7 message. Note that in every case that HL7 messages are transmitted, the ACK message is used to acknowledge receipt of the message. In the other interaction diagrams in this chapter, this interaction is not shown explicitly in order to simplify the diagrams, but this is always performed.

11. Receive Results The results sent by the pathology laboratory are received in the system at surgery, unbundled, and processed into the system there.

12. Send results to CCR The case information that has been recorded in the system at the laboratory is converted into an HL7 ORU_R01 message as specified in this guide, and sent to the central cancer registry. Although the clinical information contained in this report is the same as that sent to surgery, the layout or formatting may be different. Note that this is optional, and is per local policy.

13. Send acknowledgement of successful transmission The system that receives the HL7 message at the central cancer registry sends an acknowledgement message back to the pathology laboratory messaging system upon successful receipt of the HL7 message. Note that in every case that HL7 messages are transmitted, the ACK message is used to acknowledge receipt of the message; however, not all central cancer registries have implemented this at the current time. In the other interaction diagrams in this chapter, this interaction is not shown explicitly in order to simplify the diagrams, but this is always performed. Note that this acknowledges the communication of the message; using standard HL7 acknowledgement protocol, the data received may not yet have been committed to the destination database.

14. Receive Results The results are unbundled from the message and stored at the central cancer registry.

15. Send results to Central Cancer Registry The case results information that was received from the laboratory and saved in the local system at surgery is converted into an HL7 ORU_R01 message as specified in this guide. It may have additional information that was not available to the laboratory. This message is sent if the policy indicates that the system at the facility where the surgical center is located should send the results to the cancer registry rather than the laboratory.

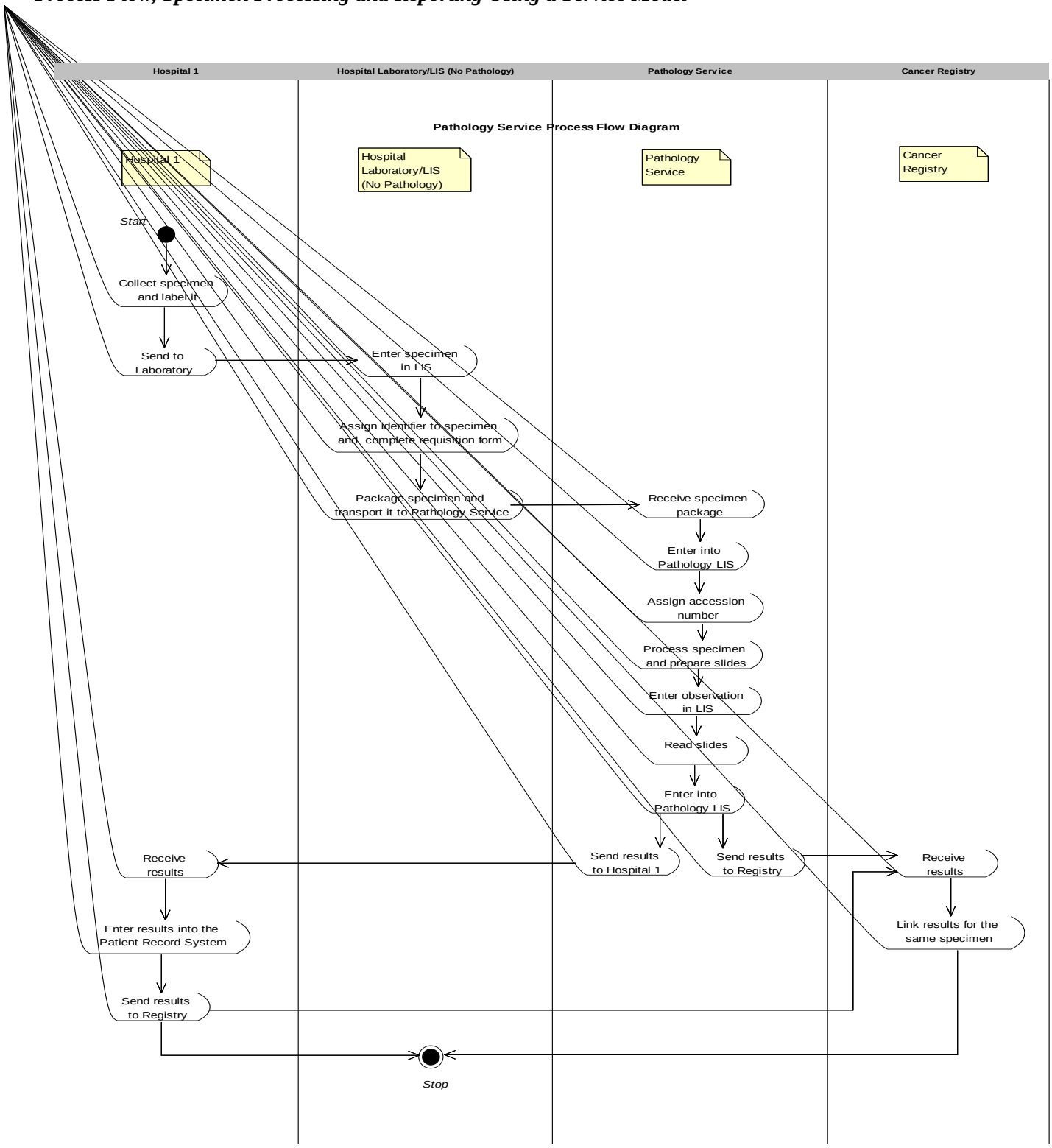
16. Send acknowledgement of successful transmission The system that receives the HL7 message at the central cancer registry sends an acknowledgement message back to the messaging system (at the facility where the surgical center is located) upon successful receipt of the HL7 message from that system.

17. Receive results The central cancer registry receives the HL7 message containing the results via the HL7 interface, subjecting them to any normal processing for that facility. The results are then stored in the central cancer registry database. The central cancer registry may alternatively have received results from the pathology laboratory (see interaction #11 above). Policy is usually set up such that the results are received either from the laboratory or the hospital HIS, but not both. The result set from the hospital may or may not have additional information that the laboratory did not generate.

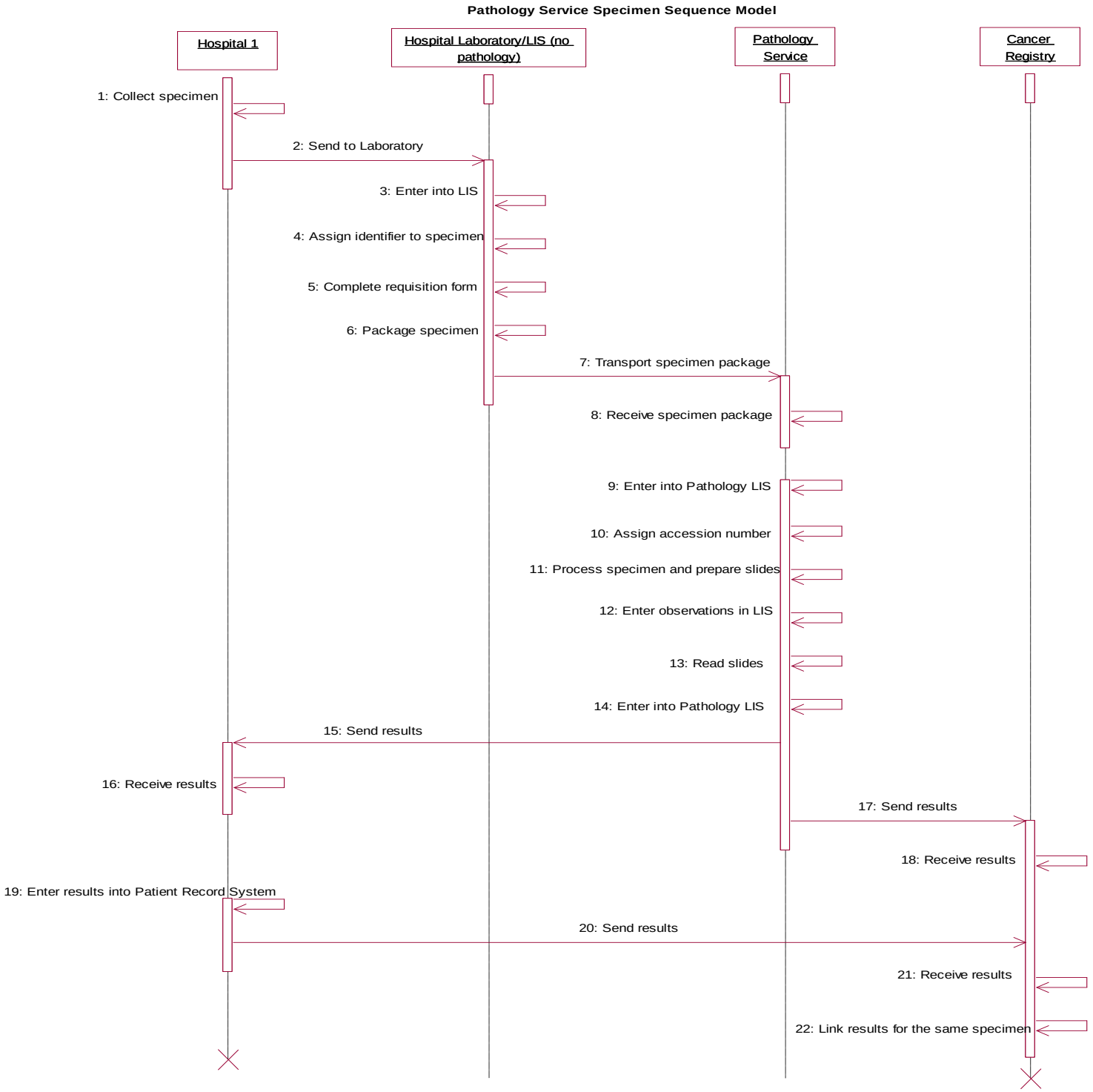
2.3.4 Specimen Processing and Reporting Using a Service Model

Some institutions contract with regional services to supply pathology study services for their collected specimens. Specimens are generally initially labeled at the local institution, and then sent to the pathology laboratory contracted to perform the service, which then relabels the specimens when it accessions them, also assigning their own new patient identifier. Some servicing laboratories have electronic messaging capabilities to send the message back to the original pathology laboratory, where it is available to the surgical center. The servicing pathology laboratory may also send the report to the cancer registry. This case is of interest because the results from the case may have two different patient identifiers and two or more different specimen identifiers, even though there is only one patient and one specimen.

Process Flow, Specimen Processing and Reporting Using a Service Model



Interactions for Specimen Processing and Reporting Using a Service Model



Interaction Descriptions

1. Collect Specimen Tissue is collected with a procedure at hospital 1, typically in surgery. A specimen is a piece of tissue or other material collected from a patient and delivered to a pathology department or facility for examination which is uniquely identified. If a specimen is separated into parts, each of those parts which are uniquely identified is also a specimen which has a relationship to the piece from which it was separated. The specimen may also be a collection of objects with a single identifier which is uniquely associated with the collection. It is a specimen if it is considered a single discrete, uniquely identified unit that is the subject of one or more steps in the laboratory workflow. A specimen may be a tissue item, tissue section, tissue core, tissue spot, smear sample, touch preparation, dispersion, or other similar subject of study. Each of the assigned identifiers is created and tracked by LIS systems and laboratory procedures later in the process.

2. Send To Laboratory The tissue samples are sent to the pathology laboratory, along with paperwork identifying the patient and other relevant information.

3. Enter in LIS The case record is created in the LIS at the hospital laboratory, and identification numbers are assigned, such as the patient and physician identification numbers.

4. Assign identifier to Specimen One or more specimen IDs are assigned to the specimen(s) received from surgery, depending upon whether or not the case is comprised of multiple specimens, and associated with the case in the LIS.

5. Complete Requisition Form Since there is no pathology department at the hospital laboratory in this scenario, a request for a pathology study must be made to the contracted pathology service, which is a different organization in a different facility. A requisition form for this service is filled out in the laboratory, and requisition numbers are created if necessary at this time.

6. Package Specimen The specimen container(s) is physically packaged with the paper requisition forms and documentation for transport.

7. Transport Specimen Package The specimen package is physically transported from the hospital laboratory to the facility for the pathology service.

8. Receive Specimen Package The specimen is examined for damage and completeness upon arrival at the pathology laboratory at the pathology service, and any necessary transport acknowledgement is performed.

9. Enter into Pathology LIS The patient identifier, requisition number, specimen IDs, associated received clinical information, and other tracking information is entered into the pathology LIS at the pathology service to create the new case. This operation creates the case in the LIS at the service.

10. Assign Accession Number to Specimen A unique number associated with this specimen receipt and this case is created by the laboratory, and entered into the system with the other information.

11. Process Specimen and Prepare Slides The staff at the pathology laboratory process the specimen, create the blocks, and does the preparation and labeling of the slides to be read by the pathologist. Note that the gross observations may be recorded at this time as well by the staff performing the gross analysis. Typically, institutions have standard protocols for the stains and other processing based on the tissue types. In the most common case a laboratory professional, perhaps a pathology assistant, examines the specimen or the collection and dictates observations about it. Further observations are dictated as the specimen is sliced or otherwise divided into portions to be processed for slide preparation. This is usually

paraffin blocking, but may also be cryogenic or other operations. Upon completion of this preparation and examination step, there is a set of dictated observations that are referred to as 'gross findings' or 'gross observations'; in many cases, this is entered into the LIS by a transcriptionist where these observations are made available to the pathologist when the slides are read. After the 'grossing' operation is complete, the prepared portions of the specimens are transferred to other laboratory personnel who perform the slicing, mounting, and staining of the tissue, and finalization of the slides. The slides are almost always labeled with individual identifying information. Generally there are no dictated observations entered into the result record during this operation. Upon completion, the slides are sent to the pathologist to be read, together with the necessary identification information for the pathologist to access the gross observations and any patient or surgical information that was received from surgery with the specimen.

12. Enter Observations in LIS The staff at the pathology service enters the gross observations for the case into the LIS running in the computer system at the service's pathology laboratory. These observations will be available for the pathologist later when the slides are read.

13. Read Slides The slides are made available to the pathologist, who examines them and creates the observations and findings. Note that additional iterations of processing and preparing slides for additional studies may be triggered at this time.

14. Enter into Pathology LIS The observations and findings from reading the slides is entered into the case record in the computer system at the service. At this time the pathologist can also review the gross observations that were entered into the tool earlier on this case.

15. Send Results The case information and observations that has been recorded at the pathology service is bundled into an HL7 message and sent back to the hospital where the specimen was collected.

16. Receive Results The HL7 message containing the results of the pathology study is received by the communication system at the hospital.

17. Send results The case information and observations that has been recorded at the pathology service is bundled into an HL7 message and sent to the central cancer registry.

18. Receive results After communication processing, the results information that has been extracted from the HL7 message is stored in the system at the central cancer registry. There may be other processing, such as code translation, also performed prior to saving the case in the databases at the central cancer registry.

19. Enter Results into Patient Record System After communication processing, the results information that has been extracted from the HL7 message is stored in the HIS or patient record system at the hospital.

20. Send results The results report that was received from the pathology service and stored into the patient record system are bundled into an HL7 message and sent to the central cancer registry. The results may have been augmented by additional case information, and thus may not be the same exact message as that sent by the service to the central cancer registry.

21. Receive results After communication processing, the results information that has been extracted from the HL7 message is stored in the system at the central cancer registry. There may be other processing, such as code translation, also performed prior to saving the case in the databases at the central cancer registry.

22. Link results for the same specimen Part of the necessary processing of the subsequent results message is linking the results to any prior results sent to the central cancer registry on the same specimen. This

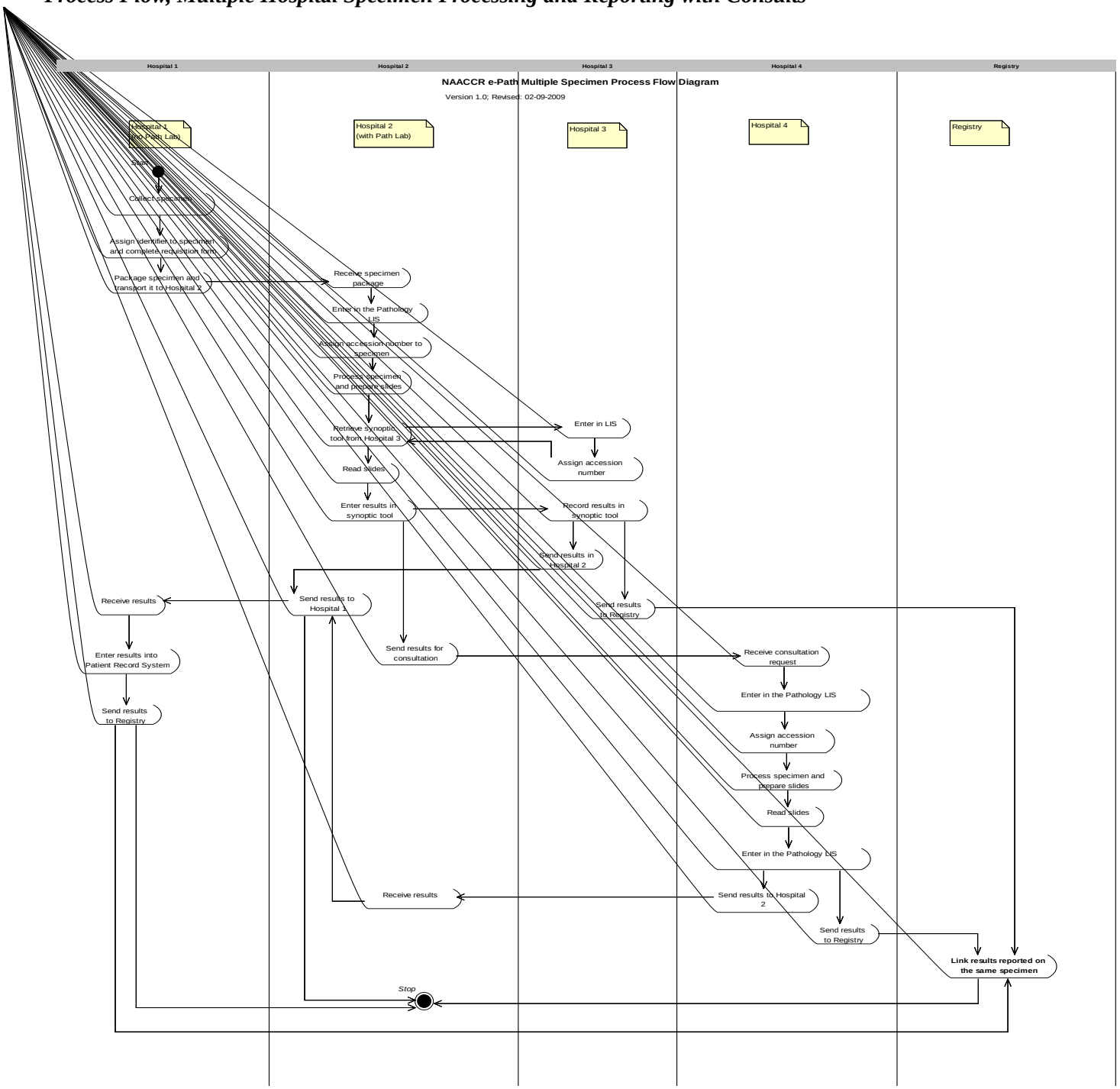
necessitates sufficient identifiers that may have been associated with the specimen and case from different facilities to be included with the messages sent to the central cancer registry, including any known accession numbers, specimen IDs, case IDs, patient IDs, and others.

2.3.5 Multiple Hospital Specimen Processing and Reporting with Consults

There are often more complex cases of specimen processing, involving multiple facilities and institutions. In this scenario, there are multiple facilities involved in the analysis of the specimen, and each generates a portion of the final report. More than one of these institutions might report to the registry. Not all information is forwarded to downstream systems generally, and thus there may be challenges with linking the portions of the report that are received at the registry. This process flow diagram illustrates a typical scenario such as this.
Illustrated here is the scenario where an additional pathologist analyzes the case and a second report on the same case is generated, at a different time, and often sent from a different facility. This involves a set of issues around the identifiers of the specimen and the report, as each system involved accessions the specimen prior to beginning work on the case. These identifiers must be appropriately handled so that confusion in complex cases with multiple different specimens on the same patient can be unambiguously interpreted.

The resulting information sent must incorporate the information for one patient and one specimen, and containing one patient identifier, one or two specimen identifiers, and different accessions numbers, and two reports. Note that the second laboratory sends only their single report, but the first laboratory may or may not send the annotated report, the consult report, or the original report without the consult section.

Process Flow, Multiple Hospital Specimen Processing and Reporting with Consults



Hospital 1 has a surgical center, where the specimen is collected in a biopsy procedure, and a laboratory. The specimen is sent to the laboratory for a pathology study, where it is accessioned and assigned an ID. Hospital 1 does not have a pathology capability, so the specimen is transported to Hospital 2, which receives and accessions the specimen in their pathology lab. Hospital 2, however, does not have the reporting tools required for capturing and archiving the pathology results, and it uses the system at Lab 3, which is a pathology center, and has such computational tools. In order to enable the pathologist at Hospital 2 to enter the result, the specimen is again accessioned in the Lab 3 system, which is then used to capture the result from the pathologist, who is working at

the lab in Hospital 2. The system at Lab 3 assembles the HL7 registry report message, and sends to both the registry, and to the system at Hospital 2, which can accept such messages. Hospital 2 forwards the report back to Hospital 1, where the specimen was collected, but also requests a consult on the specimen from Hospital 4. Hospital 4 accessions the specimen yet again, and enters the consult report into their system. The consult report is sent back to Hospital 2, and also forwarded to the registry. Hospital 2 forwards the consult report back to Hospital 1, where the patient records system links the consult report to the original report and the remainder of the patient record. One of the key challenges for tracking and linking all of the information in such a scenario is that the end result has one patient with one specimen and one patient identifier, but three specimen identifiers.

In order for the registry and Hospital 1 to link all of these reports together, certain business rules for when and how patient identifiers and specimen identifiers must be populated, and by whom, must be followed. The following framework shows just the patient ID (in the PID-3) and the specimen identifiers and accession numbers (SPM-2, SPM-30, and SPM-31) for each of the information flows between the participants in this scenario.

The following example identifiers will be used for illustration. Note that in this case, the specimen ID is the same as the accession number; none of the involved institutions assign identifiers separately for the specimen from the accessioning process on entry to the laboratories.

Hospital 1, Patient ID: H1_123456, Specimen collected November 9, 2007 11:00AM

Hospital 2 (Pathology Lab), Patient ID: H2_87654; Specimen ID: H2_3444444; Specimen received November 14, 2007 2:30PM

Hospital 3 (Pathology System), Specimen ID: H3_887766

Hospital 4 (Consult Lab), Patient ID; H4_3333333; Specimen ID: H4_75757575; Consultation request received November 16, 2007 10:00 AM

Sample PID and SPM identification fields as received by the Central Cancer Registry using these numbers:

a) Results message from Hospital 3 to the Registry:

```
PID|1||H1_123456^^^HOSPITAL1^AN~H2_87654^^^HOSPITAL2^PI|...
...
SPM|1|^H3_887766&HOSPITAL3||TISS^Tissue^HL70487||||||||||||||200711141430||||||||||||H2_344
4444^^^HOSPITAL2
```

b) Results message from Hospital 4 to the Registry:

```
PID|1||H2_87654^^^HOSPITAL2^PI~H4_3333333^^^HOSPITAL4^PI|...
...
SPM|1|H2_3444444&HOSPITAL2^H4_3333333&HOSPITAL4||TISS^Tissue^HL70487||||||||||||||2007111610
00
```

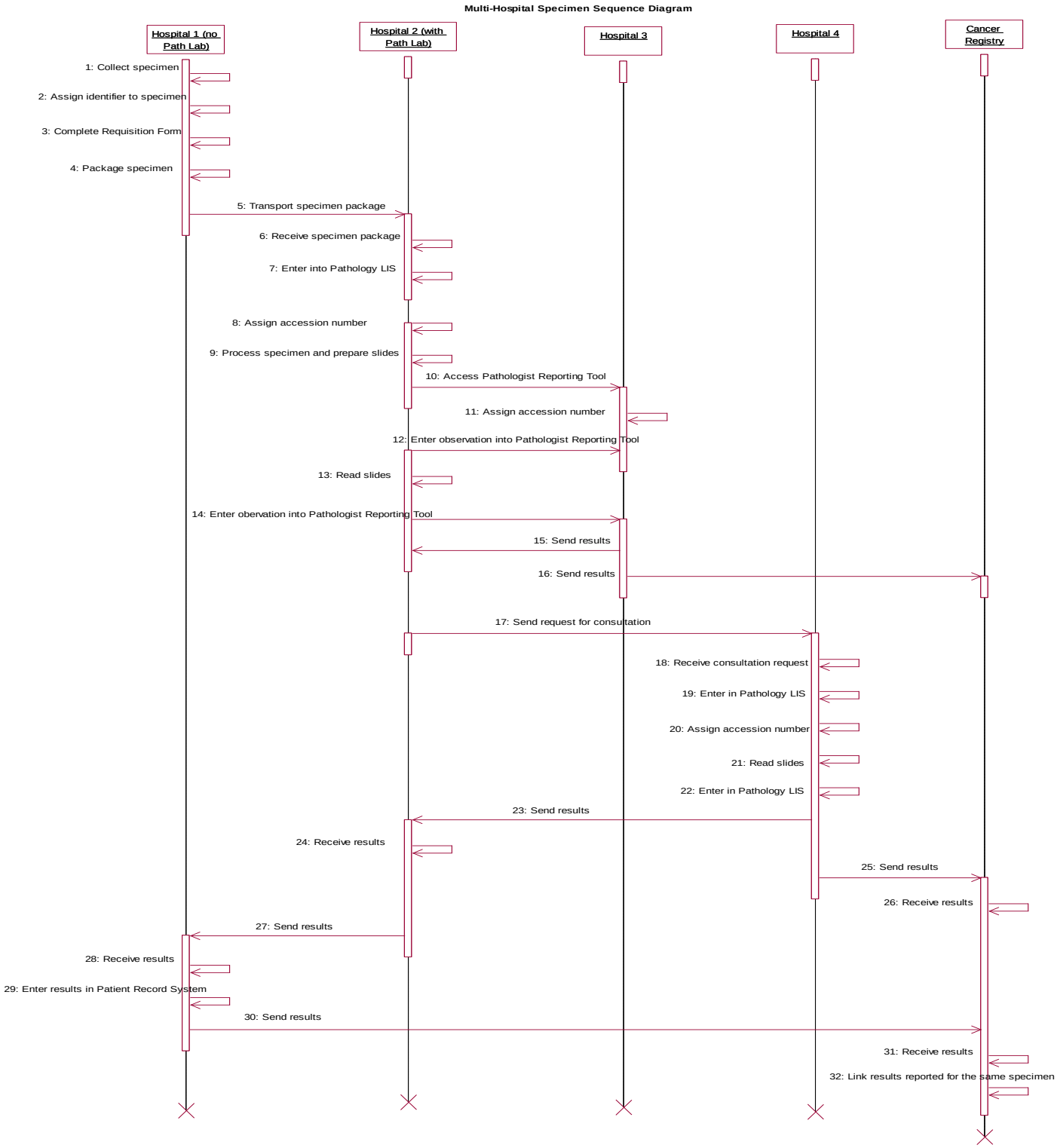
c) Results message from Hospital 1 to the Registry:

```
PID|1||H1_123456^^^HOSPITAL1^AN~H2_87654^^^HOSPITAL2^PI~H4_3333333^^^HOSPITAL4^PI|...
...
SPM|1|^H3_887766&HOSPITAL3||TISS^Tissue^HL70487||||||||||||||200711091100||||||||||||H2_344
4444^^^HOSPITAL2~H4_3333333^^^HOSPITAL4
```

Note that on this last message, the SPM contains just the information from the original collecting surgical center at Hospital 1, not all the individual specimen received times from the other laboratories.

Interactions for Multiple Hospital Specimen Processing and Reporting with Consults

Some institutions participate in networks of facilities that collaborate to produce a final cancer report. These often have very complex flows of specimens and reports (both paper and electronic), collected and sent by independent laboratory systems. To illustrate a typical case, the following diagram shows some of this complexity, and the flows that require the SPM-30 and SPM-31 so that reassigned accession numbers and specimen IDs can be linked properly when received by the central registry.


Multi-Hospital Specimen Sequence Diagram
Hospital 1 (no Path Lab)
Hospital 2 (with Path Lab)
Hospital 3
Hospital 4
Cancer Registry
1: Collect specimen
2: Assign identifier to specimen
3: Complete Requisition Form
4: Package specimen
5: Transport specimen package
6: Receive specimen package
7: Enter into Pathology LIS
8: Assign accession number
9: Process specimen and prepare slides
10: Access Pathologist Reporting Tool
11: Assign accession number
12: Enter observation into Pathologist Reporting Tool
13: Read slides
14: Enter obervation into Pathologist Reporting Tool
15: Send results
16: Send results
17: Send request for consultation
18: Receive consultation request
19: Enter in Pathology LIS
20: Assign accession number
21: Read slides
22: Enter in Pathology LIS
23: Send results
24: Receive results
25: Send results
26: Receive results
27: Send results
28: Receive results
29: Enter results in Patient Record System
30: Send results
31: Receive results
32: Link results reported for the same specimen

Interaction Descriptions

1. Collect Specimen Tissue is collected with a procedure, and labeled with the patient identifier and a requisition number. The requisition information is typically filled out in surgery at Hospital 1.

2. Assign Identifier to Specimen In some cases of multiple specimens, an identifier with related clinical information about each of the separate specimens may be assigned as specimen identifiers by the collecting facility. This is often used for laterality or location information relevant to the specimen collection.

3. Complete Requisition Form A set of documentation that includes the patient identifier and any specimen identifiers and may also include other relevant clinical information about the case (such as diagnosis or history); this filled out by the staff at the collecting facility.

4. Package Specimen The specimen container(s) is physically packaged with the requisition forms and documentation for transport to the pathology laboratory.

5. Transport Specimen Package The specimen package is physically transported from Hospital 1 to the laboratory.

6. Receive Specimen Package The specimen is examined for damage and completeness upon arrival at the pathology laboratory at Hospital 2, and necessary transport acknowledgement is performed.

7. Enter into Pathology LIS The patient identifier, requisition number, associated received clinical information, and other tracking information is entered into the pathology LIS at Hospital 2 to create the new case. This operation creates the case in the LIS.

8. Assign Accession Number to Specimen A unique number associated with this specimen receipt and this case is created by the laboratory, and entered into the system with the other information.

9. Process Specimen and Prepare Slides The staff at the pathology laboratory process the specimen, create the blocks, and do the preparation and labeling of the slides to be read by the pathologist. Note that the 'gross' observations may be recorded at this time as well by the staff performing the gross analysis. Typically, institutions have standard protocols for the stains and other processing based on the tissue types. In the most common case, a laboratory professional, perhaps a pathology assistant, examines the specimen or the collection and dictates observations about it. Further observations are dictated as the specimen is sliced or otherwise divided into portions to be processed for slide preparation. This is usually paraffin blocking, but may also be cryogenic or other operations. Upon completion of this preparation and examination step, there is a set of dictated observations that are referred to as 'gross findings' or 'gross observations'; in many cases, this is entered into the LIS by a transcriptionist where these observations are made available to the pathologist when the slides are read. After the 'grossing' operation is complete, the prepared portions of the specimens are transferred to other laboratory personnel who perform the slicing, mounting, and staining of the tissue, and finalization of the slides. The slides are almost always labeled with individual identifying information. Generally there are no dictated observations entered into the result record during this operation. Upon completion, the slides are sent to the pathologist to be read, together with the necessary identification information for the pathologist to access the gross observations and any patient or surgical information that was received from surgery with the specimen.

10. Access Pathologist Reporting Tool The pathology information capture and reporting mechanism at a different facility is accessed for use. This may be because the laboratory does not have its own pathology reporting system and are using a system shared amongst several laboratories, or it may be using one with

capabilities that they do not have locally. Several technical mechanisms, including remote login, web access, and others, may be used for this purpose. In this scenario, the computer system hosting the pathology documentation tooling is in a different facility managed by a different organization entity than the pathology laboratory processing the specimen. Note that although Hospital 2 has a pathology laboratory and an LIS computer system, in this scenario they do not have the software to document pathology cases locally. This interaction creates the new case in the remote system.

11. Assign Accession Number As the case is being entered into the system at Hospital 3, a new accession number is assigned. Note that the physical specimens, and staff generating the information, remain at Hospital 2.

12. Enter Observations in Pathologist Reporting Tool Making use of the pathology documenting and reporting tools at Hospital 3, the staff at Hospital 2 enter the gross observations for the case into the pathologist reporting tool running in the computer system at Hospital 3 These observations will be available for the pathologist later when the slides are read.

13. Read Slides The slides are made available to the pathologist, who examines them and creates the observations and findings. Note that additional iterations of processing and preparing slides for additional studies may be triggered at this time.

14. Enter into Pathologist Reporting Tool Using the reporting software at Hospital 3 accessed over the network remotely, the observations and findings from reading the slides is entered into the case record. At this time the pathologist can also review the gross observations that were entered into the tool earlier on this case.

15. Send Results The case information that has been recorded at Hospital 3 is bundled into an HL7 message and sent to the LIS at Hospital 2, where the information is stored in the LIS there. Note that in this scenario, the LIS at Hospital 2 is able to both send and receive HL7 result messages.

16. Send Results The case information that has been recorded at Hospital 3 is bundled into an HL7 message and sent to the cancer registry, along with all the accession numbers, patient identifiers, and specimen identifiers that have been following the case since its inception.

17. Send Request for Consultation The pathologist at Hospital 2, upon review of the case, requests a consultation from a pathologist at Hospital 4. The case information that was stored in the LIS in Hospital 2 is bundled into an HL7 message and transmitted to Hospital 4, where the information is stored for later access. Note that in many circumstances, this information is transmitted to Hospital 4 manually (non-electronically) rather than in an HL7 message. The slides for the case are packaged with the request and tracking paperwork, and transported to Hospital 4. At the current time, these requests are not handled by HL7 messaging, which is outside the scope of this specification. This scenario assumes that the request is sent by other mechanisms.

18. Receive Consultation Request The consultation request and the slides that have been transmitted from Hospital 2 to Hospital 4 for the case are received, and any necessary acknowledgements for both the paperwork and the set of slides are sent.

19. Enter in Pathology LIS The request is entered into the LIS at Hospital 4, where a new case is created. The results previously received by Hospital 4 from Hospital 2 for this case are retrieved and linked to the new case. Generally, the linking is either performed manually, or verified that the linkage between the pathology report previously received and the newly created case is valid.

20. Assign Accession Number As part of the institutional workflow at Hospital 4, a new accession number is assigned to the case and specimen(s) for the newly created case.

21. Read Slides The slides are made available to the pathologist, who examines them and creates the observations and findings.

22. Enter in Pathology LIS The observations and findings for the case are entered into the LIS at Hospital 4, as a consult report. This is linked to the previously received report internal to the case.

23. Send Results The information making up the consult report for the case at Hospital 4 is bundled into an HL7 message and transmitted back to Hospital 2. Note that consult results are often sent non-electronically (a letter, rather than an HL7 message). Also note that at this time, consult reports are not yet being captured as synoptic reports; this may evolve in the near future.

24. Receive Results The LIS at Hospital 2 receives the results of the consultation study from Hospital 4 and links the report to the original case information.

25. Send Results The information for the case at Hospital 4 is bundled into an HL7 message and transmitted to the cancer registry, along with the received patient identifier and any specimen IDs and accession numbers that were received. The new accession number from Hospital 4 is also transmitted with this message. Note that this consultation report may consist of only the information generated at Hospital 4, or may be appended to the full report that was originally received from Hospital 2 in iteration 17 above.

26. Receive Results Cancer registry receives the results of the consultation study from Hospital 4 and links the report to any original case information.

27. Send Results The combined report (original results from Hospital 2 processing, entered on the documentation system at Hospital 3, plus the consultation results from Hospital 4) are bundled into an HL7 message and sent back to the surgical center which originated the case at Hospital 1.

28. Receive Results The patient medical record system at the original surgical center receives the results of the combine consultation study from Hospital 4 and the pathology study from the path laboratory at Hospital 2.

29. Enter Results into Patient Record System The results received from the laboratory at Hospital 2 are entered into the patient medical record on the system at Hospital 1.

30. Send Results The report, along with any other information to be sent according to institutional policies, is bundled into an HL7 message and transmitted to the cancer registry. This report must contain all identifiers such as specimen IDs and accession numbers assigned by the various facilities that have participated in generating portions of the result information. Note that under some certain circumstances, part or all of the combined results might be in a physical form, such as a letter (non-electronic).

31. Receive Results Cancer registry receives the results of the combined reports from the patient system at the original hospital and surgical center and links the report to any original case information.

32. Link Results Reported on the Same Specimen Upon receipt of the full report from Hospital 1, the registry must be able to link all the result reports on this case and specimen(s) that have been received from the various facilities.

2.4 STATIC MODEL – MESSAGES

The static model of messaging describes the data layouts and formats used in the various interactions described in the dynamic model. This section contains the two messages used in cancer registry messaging, the Unsolicited Observation message that carries the pathology report, and the General Acknowledgement message, used to confirm receipt of a message, and/or report communications errors. All of the segments and data fields used in both these messages are described following. A separate section discusses the HL7 batch protocol, which uses special message formats.

2.4.1 Unsolicited Observation Message (ORU)/Event R01

Laboratory result information is reported through the Unsolicited Observation ORU^R01 message to cancer registries. The supported segments in ORU message structure are described below.

ORU - Unsolicited Observation Message (event R01)

ORU^R01	Observational Results (Unsolicited)	HL7 Standard Section
MSH	Message Header segment	2.6.1
[{SFT}]	Software segment	2.15.12
{	- PATIENT_RESULT begin	
[	-- PATIENT begin	
PID	Patient Identification segment	2.6.2
{[NK1]}	Next Of Kin segment	2.6.2
[PV1]	Patient Visit segment	2.6.2
]	-- PATIENT end	
{	-- ORDER RESULT begin	
[ORC]	Common Order segment	2.6.3
OBR	Observations Report ID segment	2.6.3
{[NTE] }	Notes and Comments segment	2.6.4
{	--- RESULT begin	
OBX	Observation/Result segment	2.6.4
{[NTE]}	Notes and Comments segment	2.6.4
}	--- RESULT end	
[{	--- SPECIMEN INFORMATION begin	
SPM	Specimen	7.4.3
{[OBX]}	Observation Related to Specimen	7.4.2
}]	--- SPECIMEN INFORMATION end	
}	-- ORDER RESULT end	
}	- PATIENT RESULT end	
[DSC]	Continuation Pointer	2

Using the basic "building blocks" of MSH, PID, OBR, and OBX segments (in table above), a clinical report can be constructed as a three-level hierarchy with the patient information (PID) segment at the upper level, an order record (OBR) at the next level, and one or more observation records (OBX) at the bottom. The Message Header (MSH) segment is required for all HL7 messages. Next-of-Kin (NK1) segments can provide information about parties associated with the patient. The PV1 segment is used by registration/patient administration applications to communicate information on an account or visit-specific basis. The common order (ORC) segment transmits fields common to all types of requested services, and the Notes and Comments (NTE) segment is a note common format, but only supported at the result level. The SPM segment contains detailed information about the samples that were examined.

Typically, an anatomical pathology report is associated with a surgical specimen and results in a single message or transmission. In a single transmission, one MSH segment, one ORC segment, and one OBR segment will be required. For cancer registry reporting there could be multiple OBR segments for a single MSH segment if the text-based pathology report describes each of the multiple primaries in separate sections. In such a circumstance, it is recommended that there be a single OBR for each of the primary cancers being reported. Another example of using a single MSH segment and multiple OBR segments would be transmitting an encoded checklist and raw text plus a synoptic report with all data encoded.

Although certain elements of the message are required for laboratory-based reporting, data in non-required fields will not be rejected. The standard ORU message allows for the optional use of PD1, PV2, and CTI segments, but these segments are not defined or used in the laboratory-based reporting message. For this reason, there is no discussion of these segments in this implementation guide. Messages containing these segments, however, will not be rejected. For electronic laboratory reporting purposes, acknowledgement messages are not yet implemented in most, if not all, locations in North America. Therefore, although they are defined in this guide, interfaces that have not implemented them will still be compliant.

Cancer report results to be encoded may be placed in OBX segments in either of the two locations in the message (one following the OBR and one following the SPM). The newer format for the message includes the optional SPM segment and its associated OBX segments immediately following it to hold results associated with a particular specimen; this may be referred to as the SPM-style. Encoded all results in the first set of OBX segments in the message following the OBR may be referred to as the old style, as it is similar to earlier releases of Volume V messaging. It is recommended that the following guidelines be followed:

- If the SPM segment is not implemented and all results are textual (old style), they should be encoded in the first set of OBX segments in the message immediately following the OBR;
- If all of the specimen information is textual only, then all result information should be encoded in the first set of OBX segments in the message immediately following the OBR; (old style);
- If the SPM is implemented, then results that are associated explicitly with the specimen, rather than the overall case findings, should be encoded in the second set of OBX segments in the message – those that immediately follow the SPM segment (enclosed within the {[SPECIMEN INFORMATION begin]} and the {[SPECIMEN INFORMATION end]} markers in the message layout above). Typically this would include at least the Gross observations on the specimen. The overall findings for the case, along with observations not associated with a specimen (such as Clinical History) should still be encoded in the initial set of OBX segments as shown enclosed by the { RESULT begin } and { RESULT end } markers in the message layout above (SPM-style).
- If the case has multiple specimens, then a SPECIMEN INFORMATION set of segments (having an SPM plus one or more associated OBX segments) should be used to identify each of the specimens. Observations that are associated with a particular specimen should be encoded in OBX segments following the appropriate SPM segment in the repeating SPECIMEN INFORMATION segments. Note that overall case findings should still be encoded in the set of OBX segments immediately following the OBR, identified in the message layout as the RESULT. NAACCR recommends that this SPM-style be used for messaging any case which has multiple specimens.
- If the result is a synoptic report, then the specimen-specific information may be encoded in the OBX segments in the SPECIMEN INFORMATION set if using the SPM-style of message construction, but may alternatively be sent wholly in the OBX segments in the RESULT set of segments (old style). Note that for fully encoded synoptic reports, all of the specimen information that may be carried in the SPM segment is generally carried in the OBX. See Chapter 5 below for more information on messaging and synoptic reporting.

There are some fields that are required in segments that are optional in the message, such as the PV1. The interpretation should be that the segment does not have to be in a message, but if it is present, then the fields that are required within it must be populated. In the same way, components of data types that are required should be interpreted to mean that if a field of that data type is populated, then any required data type components must be populated.

The FHS, FTS, BHS, and BTS segments are required for batch submissions only (see *Section 2.9 HL7 Batch Protocol*).

2.4.2 General acknowledgment message - ACK

Acknowledgment messages may be defined on an application basis. However the simple general acknowledgment message (ACK) may be used where the application does not define a special message (application level acknowledgment) and in other cases in the HL7 Standard where the details are described.

The simple ACK can be used where the application does not define a special application level acknowledgment message or where there has been an error that precludes application processing. It is also used for accept level acknowledgments. Here it is defined as the acknowledgement to the ORU_R01 message defined in the preceding section.

At the current time, registries may only be starting to implement this message; many are not sending acknowledgement messages back to the sending laboratories.

General Acknowledgment Message - ACK

ACK^ORU_R01^ACK	General Acknowledgment	Section
MSH	Message Header	2
[{ SFT }]	Software segment	2
MSA	Message Acknowledgment	2
[{ ERR }]	Error	2

Note: For the ACK message, the value of MSH-9-2-Trigger event is equal to the value of MSH-9-2-Trigger event in the message being acknowledged. The value of MSH-9-3-Message structure for the general acknowledgment message is always ACK.

2.5 STATIC MODEL – SEGMENT OVERVIEW

2.5.1 HL7 Standard Segment Usage

Each message is composed of a series of segments. Each segment is identified by its unique three-letter code. The segments used in this HL7 implementation guide are defined below. The segment definitions are given in the most logical order for cancer pathology report messages and do not strictly adhere to the order in which they are presented in the HL7 Standard.

The following format is used in this document for listing and defining message segments and fields. First, the message segment's use is defined, and a segment attribute table listing all fields defined in the segment is shown. In the segment attribute table, the following attributes are given for each field: sequence number within the segment, length of field, data type, and the HL7 Conformance criteria. This defines whether the field, for HL7 Version 2.5.1, is required (R), optional (O), conditional (C), or for backwards compatibility (B), and whether it is repeating (Y) or not. Following this the applicable table number for values, the field item number, and the field name are shown. The last columns in the table identify the NAACCR conformance specifics for the constrainable conformance type, and define NAACCR usage as Required (R), Required or Empty (RE), Optional (O), Conditional (C), or Conditional or Empty (CE). Note that conformance criteria of RE (required or empty) indicates that if a sending system has the data, it must be transmitted, and all receiving systems must be able to

process the data. All of the HL7 Backwards-compatible fields are constrained either in or out for this conformance type. The NAACCR cardinality field defines the minimum and maximum number of repetitions that a data field may be populated with.

Segment Attribute Table - Example

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty.

Following the table, each field is listed and defined. For each field, the HL7 segment code and reference number are listed, followed by the field name. Items in parentheses after the field name show respectively, data type and length of field, whether the field is required or optional and lists "repeating" if the field is allowed to repeat. Note that these conformance criteria are the constrainable conformance set, defined by NAACCR for cancer pathology report messaging. The HL7 item number follows the parenthesis and is given for reference convenience. As part of the definitions, usage notes for NAACCR reporting are provided, a description of the data type is given in small font, and a statement about how the fields are valued in the example is given.

Fields that NAACCR does not anticipate cancer registries using have a NAACCR Usage of 'X' for Not Supported. These fields are listed in the Segment Tables and the explanatory sections following, but do have not explanations and details documented. Users interested in learning more about these fields not discussed here should refer to the full text of HL7 Standard, Version 2.5.1.

2.5.2 Segment Attribute Table Abbreviations

The abbreviated terms and their definitions used in the segment table headings are as follows:

ABBREVIATION	DEFINITION
Seq	The sequence of the elements as they are numbered in the segment.
Len	The standard HL7 length of the element.
DT	The standard HL7 data type of the element. See appendix B.
Opt	Whether the field is required, optional, or conditional in a segment. Required fields are defined by HL7 2.5.1 and do not refer to requirements for reporting laboratory findings to cancer registries. The designations are: (R) Required. (RE) Required or empty. The element may be missing from the message, but must be sent by the sending application if there is relevant data. A conforming sending application must be capable of providing all "RE" elements. If the conforming sending application knows the required values for the element, then it must send that element. If the conforming sending application does not know the required values, then that element will be omitted. Receiving applications will be expected to process (save/print/archive/etc.) or ignore data contained in the element, but must be able to successfully process the message if the element is omitted (no error message should be generated because the element is missing). (O) Optional. (C) Conditional on the trigger event or on some other field(s). The field definitions following the segment attribute table should specify the algorithm that defines the conditionality for the field. (X) Not supported. (B) Left in for backward compatibility with previous versions of HL7. The field definitions following the segment attribute table should denote the optionality of the field for prior versions.
RP #	Indicates if element may repeat per HL7 Standard. If the number of repetitions is limited, the number of allowed repetitions is given.
Tbl #	HL7 specific table reference. Tables used in public health messages are listed in Appendix A.
Item #	HL7 unique item number for each element.

ABBREVIATION	DEFINITION
Element Name	HL7 descriptive name of element in the segment.
NAACCR Item #	NAACCR data item number for each element that corresponds to a NAACCR data item.
NAACCR Usage	Indicates the conformance usage of specific elements, which determines if the element is required or not per NAACCR implementation, according to HL7 Conformance Rules for implementable specifications and profiles. Uses the same codes as the HL7 optionality codes described above, with the exception of "O – Optional" and "B – Backward Compatibility" which are not used in implementation conformance.
NAACCR Cardnlty.	Indicates the conformance cardinality for NAACCR messaging. This is used to determine if element may repeat per NAACCR implementation, and if the number of repetitions is limited, the number of allowed repetitions.

The conformance usage rules for the 'NAACCR Usage' column are interpreted as follows:

Value	Description	Comment
R	Required	A conforming sending application shall populate all "R" elements with a non-empty value. A conforming receiving application shall process (save/print/archive/etc.) or ignore the information conveyed by required elements. A conforming receiving application must not raise an error due to the presence of a required element, but may raise an error due to the absence of a required element. Any element designated as required in a standard HL7 message definition shall also be required in all HL7 message profiles of that standard message.
RE	Required but may be empty	The element may be missing from the message, but must be sent by the sending application if there is relevant data. A conforming sending application must be **capable** of providing all "RE" elements. If the conforming sending application knows the required values for the element, then it must send that element. If the conforming sending application does not know the required values, then that element will be omitted. Receiving applications will be expected to process (save/print/archive/etc.) or ignore data contained in the element, but must be able to successfully process the message if the element is omitted (no error message should be generated because the element is missing).
C	Conditional	This usage has an associated condition predicate (See the HL7 v2.5.1 Standard Chapter 2 section *2.12.6.6 Condition Predicate*). **If the predicate is satisfied:** A conformant sending application must always send the element. A conformant receiving application must process or ignore data in the element. It may raise an error if the element is not present. **If the predicate is NOT satisfied:** A conformant sending application must NOT send the element. A conformant receiving application must NOT raise an error if the condition predicate is false and the element is not present, though it may raise an error if the element IS present.

Value	Description	Comment
CE	Conditional but it may be empty	This usage has an associated condition predicate (See the HL7 v2.5.1 Standard Chapter 2 section *2.12.6.6 Condition Predicate*). **If the predicate is satisfied:** If the conforming sending application knows the required values for the element, then the application must send the element. If the conforming sending application does not know the values required for this element, then the element shall be omitted. The conforming sending application must be **capable** of knowing the element (when the predicate is true) for all 'CE' elements. If the element is present, the conformant receiving application shall process (display/print/archive/etc.) or ignore the values of that element. If the element is not present, the conformant receiving application shall **not** raise an error due to the presence or absence of the element. **If the predicate is not satisfied:** The conformant sending application shall not populate the element. The conformant receiving application may raise an application error if the element is present.
X	Not supported	For conformant sending applications, the element will not be sent. Conformant receiving applications may ignore the element if it is sent, or may raise an application error.

2.5.3 Code Tables Identified in Segment Fields

The columns labeled "Tbl#" in the Segment Tables contains the numeric identifier of the tables associated with that field. Fields that do not contain coded data from tables do not have any value in this field. Fields that are of data types that refer to more than one table may have more than one table number listed in this column.

The tables for all fields and field components that are supported for cancer registry messaging are listed in Appendix A Code Tables. Code tables that are associated with fields and components that are not supported in this specification are not listed; for their full definition and listing of their suggested content, refer to the HL7 Standard version 2.5.1.

Code tables that are referred to in the descriptions of the segment fields are hyperlinked to their content definition in Appendix A for convenience.

2.6 MESSAGE CONTROL SEGMENT DEFINITIONS

These segments are necessary to support the functionality described in the Control/Query chapter of the HL7 Standard.

2.6.1 Message Header (MSH) Segment

Used to define the intent, source, destination, and some specifics of the syntax of a message.

MSH Attributes

Seq	Len	DT	Opt	RP #	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	1	ST	R			00001	Field separator		R	[1..1]
2	4	ST	R			00002	Encoding characters		R	[1..1]
3	227	HD	O			00003	Sending application		RE	[0..1]
4	227	HD	O			00004	Sending facility	7010, 7020	R	[1..1]
5	227	HD	O			00005	Receiving application		RE	[0..1]
6	227	HD	O			00006	Receiving facility		RE	[0..1]
7	26	TS	O			00007	Date/time of message	7490	R	[1..1]
8	40	ST	O			00008	Security		X	[0..0]

9	15	MSG	R		0076 0003 0354	00009	Message type		R	[1..1]
10	20	ST	R			00010	Message control ID	7500	R	[1..1]
11	3	PT	R			00011	Processing ID	7510	R	[1..1]
12	60	VID	R		0104	00012	Version ID		R	[1..1]
13	15	NM	O			00013	Sequence number		RE	[0..1]
14	180	ST	O			00014	Continuation pointer		CE	[0..1]
15	2	ID	O		0155	00015	Accept acknowledgment type		X	[0..0]
16	2	ID	O		0155	00016	Application acknowledgment type		X	[0..0]
17	3	ID	O		0399	00017	Country code		RE	[0..1]
18	16	ID	O	Y	0211	00692	Character set		X	[0..0]
19	250	CE	O			00693	Principal language of message		RE	[0..1]
20	20	ID	O		0356	01317	Alternate character set handling scheme		X	[0..0]
21	427	EI	O	Y		01598	Message Profile Identifier		RE	[0..1]

Example:

```
MSH|^~\&|HLS|HITECK PATH LAB-
ATL^3D9328409^CLIA||GCCR|20081124122230||ORU^R01^ORU_R01|200811241222300023|P|2.5.1|||||||||
VOL_V_40_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.9^ISO<CR>
```

This example segment shows a Version 2.5.1 ORU (result) message being sent from a pathology laboratory in Atlanta to the Georgia Comprehensive Cancer Registry on November 24, 2008, at 12:22 pm. The message control ID indicates that this is the 23rd message of the day from this laboratory.

MSH Field Definitions

Usage notes: It is not anticipated that several MSH fields (MSH-17 through MSH-20) will be used for electronic laboratory reporting purposes.

MSH-1 Field separator (ST-1, Required) 00001

Definition: The character to be used as the field separator for the rest of the message. The field separator always appears in the fourth character position of MSH segment and is used to separate adjacent data fields within a segment. The recommended value is |, ASCII (124), as shown in the examples.

MSH-2 Encoding characters (ST-4, Required) 00002

Definition: Four characters in the following order:

Component separator	"^"	ASCII (94)
Repetition Separator	"~"	ASCII (126)
Escape character	"\"	ASCII (92)
Subcomponent separator	"&"	ASCII (38)

Note that the characters in MSH-2 appear as:

```
|^~\&|
```

The component separator (^) separates adjacent components of a data field and the subcomponent separator (&)

separates the adjacent subcomponents of a data field. An example of a compound element using components and subcomponents from PID-2, described below in another section of this document, would appear as:

```
|10543^^^^^Columbia Valley Memorial Hospital&01D0355944&CLIA|
```

and not as:

```
|10543^^^^^Columbia Valley Memorial Hospital~01D0355944~CLIA|
```

The tilde (~) should not be used as a separator but rather should be used to identify when a repeating field or component occurs.

MSH-3 Sending application (HD-180, Required or Empty) 00003

Definition: This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. The field is entirely site-defined. For Cancer Registry messaging, this table cannot realistically be pre-populated nor effectively maintained, so it is not required for conformance on this field. By site agreement however, implementers may use *User-defined Table 0361* - *Sending/receiving application* for first component.

HD data type components: <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

In the example above, the sending application field is valued as |HLS| for Hiteck Lab Systems. If this value is known, this field should be valued.

MSH-4 Sending facility (HD-180, Required) 00004

Definition: This is the facility that is transmitting the HL7 message. The originator of HL7 message will place the text name of the sending laboratory or reporting site, followed by the unique Clinical Laboratory Improvement Amendments (CLIA) identifier of the originating institution (in the US; in Canada, please see the jurisdictional authority for regulations on which identifier to be used). Information about CLIA can be found at https://www.cms.gov/clia/.

For example:

```
|HITECK PATH LAB-ATL^3D9328409^CLIA|
```

HD data type components: <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

namespace ID	Text name of the sending laboratory
universal ID	Universal identifier for the sending facility, such as a CLIA number for a commercial laboratory or other identifier, such as an AHA (American Hospital Association) number.
universal ID type	Name of the type of universal identifier, such as “CLIA” or “AHA” indicating that the universal ID is a nationally assigned unique identifier, and of which type

Note for cancer registries: If the facility sending the message is the same facility that generated the Pathology Report, then this will correspond to NAACCR data items Reporting Facility ID No [7010] and Path Lab Name [7020]. See OBX-23 for other sources for these NAACCR data items.

Although the HL7 Standard identifies *User-defined Table 0362 – Sending/receiving facility* for the first component, this table will not be used for conformance for Cancer Registry Messaging.

MSH-5 Receiving application (HD-180, Required or Empty) 00005

Definition: Uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all the applications that participate in the exchange of HL7 messages within the enterprise. The field is entirely site-defined. For Cancer Registry messaging, this table cannot realistically be pre-populated nor effectively maintained, so it is not required for conformance on this field. By site agreement however, implementers may use *User-defined Table 0361 - Sending/receiving application* for first component.

If this field is known to the sending system, it should be valued.

HD data type components: <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

MSH-6 Receiving facility (HD-180, Required or Empty) 00006

Definition: This field identifies the receiving application among multiple identical applications running on behalf of different organizations. This may be used to identify the receiving state health department or cancer registry systems. Certain state health departments may request that a unique identifier for the cancer registry or other specific program appear here.

Note: This field may be blank but for the example is valued as |STJ| indicating that the receiver of the result message is Saint Joseph's Hospital.

HD data type components: <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

Although the HL7 Standard identifies *User-defined Table 0362 – Sending/receiving facility* for the first component, this table will not be used for conformance for Cancer Registry Messaging. But if the value is known to the sending system, it should be valued.

MSH-7 Date/time of message (TS-26, Required) 00007

Definition: Date/time the sending system created the message.

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

For example: 6:30 pm, February 17, 2001, would appear as:

```
|200102171830|
```

Note for cancer registries: Corresponds to NAACCR data item E-Path Date/Time Stamp [7490].

MSH-8 Security (ST-40, Not Supported) 00008

MSH-9 Message type (MSG-15, Required) 00009

Definition: The receiving system uses this field to know the data segments to recognize and, possibly, the application to which to route this message.

The specific components of fields using the MSG data type are defined within the field descriptions.
The components for this field are: <message type (ID)>^<trigger event (ID)>^<message structure (ID)>

Refer to *HL7 Table 0076 - Message type*, *HL7 Table 0003 - Event type*, and *HL7 Table 0354 - Message structure* for values.

The unsolicited transmission of an observation message would appear as:

```
|ORU^R01^ORU_R01|
```

MSH-10 Message control ID (ST-20, Required) 00010

Definition: Number or other identifier that uniquely identifies the message. The receiving system echoes this ID back to the sending system in the message acknowledgment. For electronic laboratory reporting, NAACCR recommends using the date/time stamp followed by the sequence number as: YYYYMMDDHHMMSS#### (# = counter number).

The example below shows that the date of this message is February 17, 2001, and the sequence number is 0042.

```
|200102170042|
```

Note: This field must be unique within transmission.

Note for cancer registries: Corresponds to NAACCR data item Message Control ID [7500].

MSH-11 Processing ID (PT-3, Required) 00011

Definition: Used to decide how to process the message as defined in HL7 processing rules. Field appears as P for production, T for training, or D for debugging.

PT data type components: <processing ID (ID)>^<processing mode (ID)>

(1) Processing ID (ID). A value that defines whether the message is part of a production, training, or debugging system. Refer to *HL7 Table 0103 - Processing ID* for valid values.
(2) Processing mode (ID). A value that defines whether the message is part of an archival process or an initial load. Refer to *HL7 Table 0207 - Processing mode* for valid values. The default (blank) means current processing.

For example:

```
|P|
```

In the example, the use is production. The second component is not specified, indicating current processing as the default.

Note for cancer registries: Corresponds to NAACCR data item Processing ID [7510].

MSH-12 Version ID (VID-60, Required) 00012

Definition: Matched by the receiving system to its own HL7 version to be sure the message will be interpreted correctly.

VID data type components: <version ID (ID)>^<internationalization code (CE)>^<international version ID (CE)>

(1) Version ID (ID). Used to identify the HL7 version. Refer to *HL7 Table 0104 - Version ID* for valid values.
(2) Internationalization code (CE). Used to identify the international affiliate country code. ISO 3166 provides a list of country codes that may be used (see *User-defined Table 0212 - Nationality*).
(3) International version ID (CE). Used when the international affiliate has more than a single local version associated with a single U.S. version.

In the example, the version is 2.5.1.

MSH-13 Sequence number (NM-15, Required or Empty) 00013

Definition: Non-null value in this field implies that the sequence number protocol is in use. This numeric field is incremented by one for each subsequent value.

In the example, the field is not valued or expected to be used.

MSH-14 Continuation pointer (ST-180, Conditional or Empty) 00014

Definition: Used to define continuations in application-specific ways. For Cancer messaging, if a message exceeds the maximum length supported by the interface and it must be broken up, this field is used to indicate a message containing the continuation from the previous message.

In the example, the field is not valued or expected to be used.

MSH-15 Accept acknowledgment type (ID-2, Not Supported) 00015

MSH-16 Application acknowledgment type (ID-2, Not Supported) 00016

MSH-17 Country code (ID-3, Required or Empty) 00017

Definition: This field contains the country of origin for the message. It will be used primarily to specify default elements, such as currency denominations. The values to be used are those of ISO 3166-1.[3]. The ISO 3166 table has three separate forms of the country code: HL7 specifies that the 3-character (alphabetic) form be used for the country code.

Note: In earlier versions of the NAACCR Volume V specifications, the 2-character (alphabetic) form of the country codes was specified, but the 3-character ISO 3166-1 set is to be used for Cancer Pathology Report Messaging using HL7 Version 2.5.1 as described in this Implementation Guide. If this value is present in a system that may use more than one language, then it must be sent.

Refer to *HL7 Table 0399 – Country code* for the 3-character codes as defined by ISO 3166-1.

In the example, this field is not valued.

MSH-18 Character set (ID-10, Not Supported) 00692

MSH-19 Principal language of message (CE-60, Required or Empty) 00693

Definition: This field contains the principal language of the message. Codes come from ISO 639. Note that in Canada, both English and French are supported for HL7 messaging.

In the example, this field is not valued.

MSH-20 Alternate character set handling scheme (ID-20, Not Supported) 01317

MSH-21 Message Profile Identifier (EI-427, Required or Empty, repeating maximum 3) 01598

Definition: Sites may use this field to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. For a full description of the use of this field, see the version 2.5.1 HL7 standard section 2.12 “Conformance Using Message Profiles”.

3 Available from ISO 1 Rue de Varembe, Case Postale 56, CH 1211, Geneve, Switzerland

Repetition of this field allows more flexibility in creating and naming message profiles. Using repetition, this field can identify a set of message profiles that the message conforms to. For example, the first repetition could reference a vendor's message profile. The second could reference another compatible provider's profile or a later version of the first vendor profile.

As of v2.5, the HL7 message profile identifiers might be used for conformance claims and/or publish/subscribe systems. Refer to the HL7 published standard version 2.5.1 sections 2.12.1.1 "Message Profile Identifier" and 2.12.1.2 "Message profile publish/subscribe topics" for details of the message profile identifiers. Refer to sections 2.12.4.1 "Static definition identifier" and 2.12.4.1 "Static definition publish/subscribe topics" for details of the static definition identifiers.
Prior to v2.5, the field was called Conformance Statement ID. For backward compatibility, the Conformance Statement ID can be used here. Examples of the use of Conformance Statements appear in Chapter 5, "Query."

Components of EI Data type: <Entity Identifier (ST)> ^ <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

Example:
|VOL_V_40_ORU_R01^NAACCR_CP|

This example illustrates the Volume V Conformance Profile and shows the NAACCR id of "VOL_V_40_ORU_R01" in the NAACCR Conformance Profile library, which is the profile for this version of the Guide. The library itself is identified with a Namespace ID of "NAACCR_CP" in this example, which is the id of the namespace of NAACCR Conformance Profiles. In the future, if this profile is registered with the HL7 Conformance Profile Registry. an OID will be created by the process of registration for the Conformance Profile. In this example is '2.16.840.1.113883.9.9' is shown to illustrate an OID that may be created (but the last number '9' is likely to be different, as the updated Profile for this Guide has not been officially registered as of the time of publication of this Guide). This example shows the MSH-21 value populated with a Universal ID, and a Universal ID Type of "ISO".

|^^2.16.840.1.113883.9.9^ISO|

A UUID may also be used, as one is created by the software that validates the profile, and registers it with HL7. The following example illustrates the use of a generated UUID for the profile:

|^^99426FAA-62CA-4A65-8140-169741AF05A5^UUID|

When deciding how to implement the values in MSH-21, please check with NAACCR for information on the registration of the profile, and if it has been registered, the identifier to be used. Until registration is done, use the value shown in the first example.

2.6.2 Software (SFT) Segment

This segment provides additional information about the software product(s) used as a Sending Application. The primary purpose of this segment is for diagnostic use. There may be additional uses per site-specific agreements.

Implementers are encouraged to use message profile identifiers (as found in the published HL7 standard version 2.5.1 section 2.15.9.21, "MSH-21 Message Profile Identifier (EI-427, Required or Empty, repeating maximum 3) 01598"; also see above) to control the behavior of the receiving application rather than relying on application or version information in the SFT segment.

For example, if software product A has versions 9 and 10 deployed in different Enterprise locations, the fact that they use different message types, segments, or fields should be reflected via their message profiles (see above). If

there is an upgrade from version 10 to 10.1, this would be reflected in the SFT segment, but changes to the message contents should be reflected via a new/different conformance profile.

SFT Attributes

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	567	XON	R			01834	Software Vendor Organization		R	[1..1]
2	15	ST	R			01835	Software Certified Version or Release Number		R	[1..1]
3	20	ST	R			01836	Software Product Name		R	[1..1]
4	20	ST	R			01837	Software Binary ID		R	[1..1]
5	1024	TX	O			01838	Software Product Information		RE	[0..1]
6	26	TS	O			01839	Software Install Date		RE	[0..1]

Use Case: An external application has been customized to communicate with a centralized patient drug history system. However, due to certain, known characteristics of the external software package, the centralized system must modify its behavior in order to process transactions correctly. In one example, the external application may have multiple versions in production. As such, the centralized application will need to know the name of the **Software Vendor Organization**, the **Software Release Number**, the **Software Product Name**, and the **Software Binary ID** so that it can correctly identify the software submitting the transaction and modify its behavior appropriately.

While preparing a transaction for submission to a centralized system the sending application specifies its **Software Install Date** and its configuration settings (**Software Product Information**). While processing the transaction, the centralized system encounters an error. Upon examination of the error, install date and configuration of the software that sent the message, helpdesk staff is able to determine the sending application has not been updated to reflect recent application changes.

Use Case: In circumstances where a message is manipulated or modified by multiple systems, a repetition of this segment may be appended by each system.

Example:

```
MSH
[{ SFT }]
```

SFT Field Definitions

SFT-1 Software Vendor Organization (XON-567, Required) 01834

Definition: Organization identification information for the software vendor that created this transaction. The purpose of this field, along with the remaining fields in this segment, is to provide a more complete picture of applications that are sending HL7 messages. The Software Vendor Organization field would allow the identification of the vendor who is responsible for maintaining the application.

XON data type components: <Organization Name (ST)> ^ <Organization Name Type Code (IS)> ^ <DEPRECATED-ID Number (NM)> ^ <Check Digit (NM)> ^ <Check Digit Scheme (ID)> ^ <Assigning Authority (HD)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility (HD)> ^ <Name Representation Code (ID)> ^ <Organization Identifier (ST)>

Subcomponents for Assigning Authority (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

Subcomponents for Assigning Facility (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

SFT-2 Software Certified Version or Release Number (ST-15, Required) 01835

Definition: Latest software version number of the sending system that has been compliance tested and accepted. Software Certified Version or Release Number helps to provide a complete picture of the application that is sending/receiving HL7 messages. Versions are important in identifying a specific 'release' of an application. In some situations, the receiving application validates the Software Certified Version or Release Number against a list of "certified" versions/releases of the particular software to determine if the sending application adheres to specific business rules required by the receiving application.

Alternatively, the software may perform different processing depending on the version of the sending software

SFT-3 Software Product Name (ST-20, Required) 01836

Definition: The name of the software product that submitted the transaction. A key component in the identification of an application is its Software Product Name. This is a key piece of information in identifying an application.

SFT-4 Software Binary ID (ST-20, Required) 01837

Definition: Issued by a vendor for each unique software version instance to distinguish between like versions of the same software e.g., a checksum.

Software Binary Ids are issued for each unique software version instance. As such, this information helps to differentiate between differing versions of the same software. Identical Primary IDs indicate that the software is identical at the binary level (configuration settings may differ).

SFT-5 Software Product Information (TX-1024, Required or Empty) 01838

Definition: Software identification information that can be supplied by a software vendor with their transaction; might include configuration settings, etc. This field would contain any additional information an application provides with the transaction it has submitted. This information could be used for diagnostic purposes and provides greater flexibility in identifying a piece of software. Possibilities include setup or configuration parameter information.

This field should not be sent unless performing diagnostics.

SFT-6 Software Install Date (TS-26, Required or Empty) 01839

Definition: Date the submitting software was installed at the sending site.

A Software Install Date on its own can often provide key information about the behavior of the application, and is necessary to provide a complete picture of the sending application.

TS data type components: <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>

2.6.3 Continuation Pointer (DSC) Segment

The DSC segment is used in the continuation protocol.

DSC Attributes

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	180	ST	O			00014	Continuation Pointer		RE	[0..1]
2	1	ID	O		0398	01354	Continuation Style		RE	[0..1]

DSC Field Definitions

DSC-1 Continuation Pointer (ST-180, Required or Empty) 00014

Definition: This field contains the continuation pointer. In an initial query, this field is not present. If the responder returns a value of null or not present, then there is no more data to fulfill any future continuation requests. For use with continuations of unsolicited messages, see the HL7 published standard version 2.5.1 chapter 5 and section 2.10.2 "Continuation messages and segments". Note that continuation protocols work with both display- and record-oriented messages.

DSC-2 Continuation Style (ID-1, Required or Empty) 01354

Definition: Indicates whether this is a fragmented message (see Section 2.10.2 "Continuation messages and segments" in the published HL7 standard version 2.5.1), or if it is part of an interactive continuation message (see Section 5.6.3, "Interactive continuation of response messages" in the published HL7 standard).

2.6.4 Message Acknowledgement (MSA) Segment

The MSA segment contains information sent while acknowledging another message.

MSA Attributes

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	2	ID	R		0008	00018	Acknowledgment Code		R	[1..1]
2	20	ST	R			00010	Message Control ID		R	[1..1]
3	80	ST	B			00020	Text Message		CE	[0..1]
4	15	NM	O			00021	Expected Sequence Number		RE	[0..1]
5			W			00022	Delayed Acknowledgment Type		X	[0..0]
6	250	CE	B		0357	00023	Error Condition		CE	[0..1]

MSA Field Definitions

MSA-1 Acknowledgment Code (ID-2, Required) 00018

Definition: This field contains an acknowledgment code, see message processing rules. Refer to *HL7 Table 0008 - Acknowledgment code* for valid values.

MSA-2 Message Control ID (ST-20, Required) 00010

Definition: This field contains the message control ID of the message sent by the sending system. It allows the sending system to associate this response with the message for which it is intended.

MSA-3 Text Message (ST-80, Conditional or Empty) 00020

Definition: This optional field further describes an error condition. This text may be printed in error logs or presented to an end user.

The *MSA-3* was deprecated as of v 2.4. The reader is referred to the ERR segment. The ERR segment allows for richer descriptions of the erroneous conditions. However, for systems unable to populate the ERR segment, this field may be used to pass the error text message. Conditionality predicate: The error text must be populated here if the ERR is not used and an error occurs

MSA-4 Expected Sequence Number (NM-15, Required or Empty) 00021

Definition: This optional numeric field is used in the sequence number protocol.

MSA-5 Delayed Acknowledgment Type 00022 WITHDRAWN

Attention: The MSA-5 was deprecated as of v2.2 and the detail was withdrawn and removed from the standard as of v 2.5.

MSA-6 Error Condition (CE-250, Conditional or Empty) 00023

Definition: This field allows the acknowledging system to use a user-defined error code to further specify AR or AE type acknowledgments.

The MSA-6 was deprecated as of v2.4. The reader is referred to the ERR segment. The ERR segment allows for richer descriptions of the erroneous conditions. This may be used if the sending system is unable to populate an ERR segment. Conditionality predicate: The error code must be populated here if the ERR is not used and an error occurs.

CE data type components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)>

Refer to *HL7 Table 0357 - Message Error Condition Codes* for valid values.

2.6.5 Error (ERR) Segment

The ERR segment is used to add error comments to acknowledgment messages.

Use Cases:
Severity: A receiving application generates two messages, one an error and the other a warning, and sends each of them. The application displays them both, prefixing the messages appropriately with the severity.

Application Error Code: A receiving application generates an error that reports an application error code and returns this information in its response. This code in turn is used by helpdesk staff to pinpoint the exact cause of the error, or by the application to prompt an appropriate response from the user. (Ex. Deceased date must be greater than or equal to birth date).

Application Error Parameter: A receiving application encounters an error during processing of a transaction. In addition to an error code, the application provides an error parameter that gives greater detail as to the exact nature of the error. The receiving application looks up the message corresponding to the error code, substitutes in the parameter, and displays the resulting message to the user.

Diagnostic Information: While processing a transaction, a receiving application encounters an exception. When the exception is thrown, it provides a volume of detailed information relating to the error encountered. The

receiving application captures the information and sends it in its response. The user reports the error to the help desk, and on request, faxes a copy of the diagnostic information to assist analyzing the problem.

User Message: A user executes an application function that generates a transaction that is sent to another application for further processing. During this processing, the receiving application encounters an error and, as part of the error handling routine, retrieves a User Message that it returns in its response. The originating application receives the error and displays it to the end user with the intent that the error condition can be resolved and the user can re-execute the function without error.

Inform Person Code: After submitting a dispense transaction, a response is returned to the user indicating that the patient may be abusing drugs. Given the sensitivity of this warning, the error is returned with an indicator stating that the patient should not be informed of the error with the implication that steps should be taken to rule out or confirm the warning.

Override Type: If a business rule states that a prescription on hold cannot be dispensed, an override type might be "Dispense Held Prescription" to allow the prescription to be dispensed in exception to the rule.

Override Reason Codes: A patient is given a prescription; however, before completing the prescription, the remaining pills are spoiled. The patient returns to their pharmacy and explains the situation to their pharmacist. The pharmacist decides to replace the spoiled drugs; however, when attempting to record the event a message is returned indicating that the dispense would exceed the maximum amount prescribed. The pharmacist overrides the rule and specifies an Override Reason Code indicating a replacement of lost product.

Help Desk Contact: Help desk contact information is stored in a database. When an application error is encountered, the database is queried and the most current help desk contact information is returned in the error message. This is displayed to the user by the receiving application.

Better Error Location Information: Receiving system detects an error with the 3rd repetition of the ROL.4 (Role Person - XCN).16 (Name Context – CE).4(Alternate Identifier – IS). The application identifies the specific repetition and component when raising the error, simplifying diagnosis of the problem.
Support for multiple Error Locations: Two fields are marked as conditional, with the condition that one of the two must be specified. The sending application leaves both blank. The receiving application detects the problem, and sends back a single error indicating that one of the fields must be filled in. The ERR segment identifies both positions within the message that relate to the error.

ERR Attributes

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	493	ELD	B	Y		00024	Error Code and Location		X	[0..0]
2	18	ERL	O	Y		01812	Error Location		RE	[0..5]
3	705	CWE	R		0357	01813	HL7 Error Code		R	[1..1]
4	2	ID	R		0516	01814	Severity		R	[1..1]
5	705	CWE	O		0533	01815	Application Error Code		X	[0..0]
6	80	ST	O	Y/10		01816	Application Error Parameter		X	[0..0]
7	2048	TX	O			01817	Diagnostic Information		RE	[0..1]
8	250	TX	O			01818	User Message		RE	

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
9	20	IS	O	Y	0517	01819	Inform Person Indicator		X	[0..0]
10	705	CWE	O		0518	01820	Override Type		X	[0..0]
11	705	CWE	O	Y	0519	01821	Override Reason Code		X	[0..0]
12	652	XTN	O	Y		01822	Help Desk Contact Point		RE	[0..3]

ERR-1 Error Code and Location (ELD-493, Not Supported) 00024

ERR-2 Error Location (ERL-18, Required or Empty, Repeating maximum 5) 01812

Definition: Identifies the location in a message related to the identified error, warning or message. If multiple repetitions are present, the error results from the values in a combination of places.

ERL data type components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>

ERR-3 HL7 Error Code (CWE-705, Required) 01813

Definition: Identifies the HL7 (communications) error code. Refer to *HL7 Table 0357 – Message Error Condition Codes* for valid values.

Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

ERR-4 Severity (ID-2, Required) 01814

Definition: Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to *HL7 Table 0516 - Error severity* for valid values. If ERR-3 has a value of "0", ERR-4 will have a value of "I".

Example: a Warning could be used to indicate that notes were present, but ignored because they could not be automatically processed, and therefore information could have been missed.

Example of Information: When submitting a claim, a payer might indicate remaining coverage under limit.

ERR-5 Application Error Code (CWE-705, Not Supported) 01815

ERR-6 Application Error Parameter (ST-80, Not Supported) 01816

ERR-7 Diagnostic Information (TX-2048, Required or Empty) 01817

Definition: Non-coded information that may be used by help desk or other support personnel to diagnose a problem.

ERR-8 User Message (TX-250, Required or Empty) 01818

Definition: The text message to be displayed to the application user. This differs from the actual error code and may provide more diagnostic information.

Example: |This program is having trouble communicating with another system. Please contact the help desk.|

ERR-9 Inform Person Indicator (IS-20, Not Supported) 01819

ERR-10 Override Type (CWE-705, Not Supported) 01820

ERR-11 Override Reason Code (CWE-705, Not Supported) 01821

ERR-12 Help Desk Contact Point (XTN-652, Required or Empty, Repeating maximum 3) 01822

Definition: Lists phone, e-mail, fax, and other relevant numbers for helpdesk support related to the specified error.

XTN data type components: <DEPRECATED-Telephone Number (ST)> ^ <Telecommunication Use Code (ID)> ^ <Telecommunication Equipment Type (ID)> ^ <Email Address (ST)> ^ <Country Code (NM)> ^ <Area/City Code (NM)> ^ <Local Number (NM)> ^ <Extension (NM)> ^ <Any Text (ST)> ^ <Extension Prefix (ST)> ^ <Speed Dial Code (ST)> ^ <Unformatted Telephone number (ST)>

2.7 PATIENT ADMINISTRATION MESSAGE SEGMENTS

2.7.1 Patient Identification (PID) Segment

` Used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

PID Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			00104	Set ID - PID		R	[1..1]
2	20	CX	B			00105	Patient ID (External)		RE	[0..1]
3	250	CX	R	Y		00106	Patient identifier list	2300, 2320	R	[1..8]
4	20	CX	B	Y		00107	Alternate patient ID - PID		X	[0..0]
5	250	XPN	R	Y		00108	Patient name	2230, 2240, 2250	R	[1..8]
6	250	XPN	O			00109	Mother's maiden name		X	[0..0]
7	26	TS	O			00110	Date/time of birth	240	RE	[0..1]
8	1	IS	O		0001	00111	Sex	220	RE	[0..1]
9	250	XPN	B	Y		00112	Patient alias	2280	RE	[0..8]
10	250	CE	O	Y	0005	00113	Race	160	RE	[0..6]
11	250	XAD	O	Y		00114	Patient address	70, 80, 100, 2330, 7520	RE	[0..4]
12	4	IS	B		0289	00115	County code		X	[0..0]
13	250	XTN	O	Y		00116	Phone number - home	2360	RE	[0..8]
14	250	XTN	O	Y		00117	Phone number - business		RE	[0..4]
15	250	CE	O		0296	00118	Primary language		RE	[0..1]
16	250	CE	O		0002	00119	Marital status	150	RE	[0..1]
17	250	CE	O		0006	00120	Religion	260	RE	[0..1]
18	250	CX	O			00121	Patient account number		CE	[0..1]
19	16	ST	B			00122	SSN number - patient		CE	[0..1]
20	25	DLN	B			00123	Driver's license number - patient		X	[0..0]
21	250	CX	O	Y		00124	Mother's identifier		X	[0..0]
22	250	CE	O	Y	0189	00125	Ethnic group	190	RE	[0..4]

23	250	ST	O			00126	Birth place		RE	[0..1]
24	1	ID	O		0136	00127	Multiple birth indicator		X	[0..0]
25	2	NM	O			00128	Birth order		X	[0..0]
26	250	CE	O	Y	0171	00129	Citizenship		X	[0..0]
27	250	CE	O		0172	00130	Veterans military status		X	[0..0]
28	250	CE	B		0212	00739	Nationality		X	[0..0]
29	26	TS	O			00740	Patient death date and time		RE	[0..1]
30	1	ID	O		0136	00741	Patient death indicator	1760	RE	[0..1]
31	1	ID	O		0136	01535	Identity Unknown Indicator		RE	[0..1]
32	20	IS	O	Y	0445	01536	Identity Reliability Code		RE	[0..3]
33	26	TS	O			01537	Last Update Date/Time		X	[0..0]
34	241	HD	O			01538	Last Update Facility		X	[0..0]
35	250	CE	C		0446	01539	Species Code		X	[0..0]
36	250	CE	C		0447	01540	Breed Code		X	[0..0]
37	80	ST	O			01541	Strain		X	[0..0]
38	250	CE	O	Y/2	0429	01542	Production Class Code		X	[0..0]
39	250	CWE	O	Y	0171	01840	Tribal Citizenship		RE	[0..5]

Example:

```
PID|1||97 810430^^^HITECK PATH LAB-ATL&3D9328409&CLIA^PI~00466144^^^UNIVERSITY
  HOSPITAL&470381&AHA^MR~3270686987^^^USHC^PN||SAMPLE30^ALLAN||19530621|M|||112 BROAD
  STREET^APT 10^ATLANTA^GA^30301^^H<CR>
```

This example segment shows that the patient named Allan Sample30 is a male born on June 21st, 1953. A laboratory and a hospital patient identifier are included, along with the patient's address.

PID Field Definitions

Usage Notes: It is not anticipated that several PID fields (PID-23 through PID-28) will be used for electronic laboratory reporting purposes.

PID-1 Set ID - PID (SI-4, Required) 00104

Definition: The Set ID field numbers the repetitions of the PID segment (i.e., multiple patient reports). For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

> SI data type is a non-negative integer in the form of an NM field. The uses of this data type are defined in the chapters defining the segments and messages in which it is used.

For laboratory-based reporting, it is required that information for only one patient be sent per message, in other words one PID per MSH. Thus PID-1 must be:

|1|

Note: NAACCR standard reports have only one Patient per report, so this field should never contain anything other than '1'.

PID-2 Patient ID (CX-20, Required or Empty) 00105

Definition: This field has been retained for backward compatibility only. Since HL7 Version 2.3.1, the

arbitrary term of "external ID" has been removed from the name of this field. The repetition, assigning authority, facility, and identifier type code attributes of the PID-3-patient identifier list allow for distinctive identifier representation. PID-3 is preferred for all Patient Identifiers but if an identifier has historically been sent in PID-2, and the sender has been unable to move it to PID-3, it may be continued to be populated here.

CX data type components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>^<Effective Date(DT)>^<Expiration Date(DT)>^<Assigning Jurisdiction(CWE)>^<Assigning Agency or Department(CWE)>

Components are defined as follows:
(1) ID number (ST).
(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.
(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.
(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.
(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(7) Effective Date (DT). The first date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].
(8) Expiration Date (DT). The last date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].
(9) Assigning Jurisdiction (CWE). The geo-political body that assigned the identifier in component 1. Refer to *User-Defined Table 0347 State/Province* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is a state or province. This table is country specific. In the US postal codes may be used. Subcomponents of (9): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>
(10) Assigning Agency or Department (CWE). The agency or department that assigned the identifier in component 1. Refer to *User-defined Table –0530 Organizations, Agency, Department* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is an organization, agency or department. This is populated with site-specific assigning authorities. Subcomponents of (10): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>

Note: NAACCR recommends use of PID-3 Patient Identifier List instead of PID-2 Patient ID. This field should only be used for the Patient Identifier if the sending system is unable to populate PID-3.

In the example, this field is not valued but the "external ID" from the hospital is passed as a component in PID-3, the patient identifier list.

PID-3 Patient identifier list (CX-250, Required, Repeating maximum 8) 00106

Definition: This field contains the list of identifiers (one or more) used by the facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, etc.). For cancer reporting, the patient identifiers must be in the specified order (Medical Record Number [MR], Social Security Number [SS], then any other patient identification number) and for at least one of the patient identifiers there must be information other than unknown.

CX data type components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>^<Effective Date(DT)>^<Expiration Date(DT)>^<Assigning Jurisdiction(CWE)>^<Assigning Agency or Department(CWE)>

Components are defined as follows:
(1) ID number (ST).
(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.
(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.
(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.
(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(7) Effective Date (DT). The first date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].
(8) Expiration Date (DT). The last date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].

(9) Assigning Jurisdiction (CWE). The geo-political body that assigned the identifier in component 1. Refer to *User-Defined Table 0347 State/Province* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is a state or province. This table is country specific. In the US postal codes may be used. Subcomponents of (9): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>
(10) Assigning Agency or Department (CWE). The agency or department that assigned the identifier in component 1. Refer to *User-defined Table –0530 Organizations, Agency, Department* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is an organization, agency or department. This is populated with site-specific assigning authorities. Subcomponents of (10): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>

Note for cancer registries: Corresponds to NAACCR items Medical Record Number [2300] and Social Security Number [2320].

HL7 Version 2.3 provided a field to record the patient's Social Security number in *PID-19 - SSN - patient*. Since Version 2.3.1, HL7 recommends using *PID-3-patient identifier list* for all patient identifiers along with the appropriate identifier type code (*User-defined Table 0203 - Identifier type*).

Cancer reporting will use PID-3 for multiple patient identifiers. For example, the first instance below is the Medical Record Number (MR) from St. Joseph's Hospital (STJ) as assigning authority, with the AHA identifier for St. Joseph's; the second is the patient's social security number (SS); and the third is the Laboratory's unique Patient Internal Identifier (PI), with the laboratory's CLIA number.

```
|010203040^^^^MR^STJ&03D1234567&AHA~111223333^^^^SS^~97 810430^^^^PI^HITECK PATH LAB-
  ATL&3D9328409&CLIA|
```

Sometimes, however, there are laboratories that use other labs as reference labs. For example, an anatomic pathology specimen from the Columbia Valley Memorial Hospital laboratory is sent to a reference laboratory named MediLab Co., and the result is reported to a cancer registry by MediLab Co. In the scenario described, the unique patient identifier from MediLab Co. would always appear first with the type code PI, along with name and CLIA number for MediLab Co. as the assigning authority. Repetitions of the field allow a reporting laboratory (MediLab Co.) also to provide the medical record number and/or other patient identifiers assigned at the original institution that submitted a specimen for testing (i.e., Columbia Valley Memorial Hospital). The type code for the Columbia Valley Hospital identifier will be PT for Patient external identifier. In the example below, only the PT is included, while the MR from Columbia Valley Hospital is omitted.

For example:

```
|111223333^^^^SS^~95101100001^^^^PI^MediLabCo-Seattle&45D0470381&CLIA~10543^^^^PT^Columbia
  Valley Memorial Hospital&01D0355944&CLIA|
```

Because HL7 allows users to define the values for the subcomponents of the HD data type, the <assigning facility> has the following definition for the laboratory-based reporting message:

namespace ID	Name of originating laboratory
universal ID	Unique CLIA number of originating laboratory
universal ID type	"CLIA"

If a hospital laboratory will be reporting the result (and thus there will be only one hospital involved in collection and processing of the specimen), then the hospital laboratory's patient identifier and the hospital CLIA ID will appear with typecode PI; no information will appear as an external ID. Likewise, if a reference laboratory receives a specimen from a doctor's office and no preceding originating laboratory is used, then the reference laboratory's patient identifier and reference laboratory CLIA ID will appear with the typecode PI; no information will appear as an external ID.

```
|010678509^^^^MR^Columbia Valley Memorial Hospital&01D0355944&AHA~10543^^^^PI^Columbia
  Valley Memorial Hospital&01D0355944&CLIA|
```

Please note that in Canada, identifier types may be determined by the local jurisdictional authority. Many of the common types have been added to User Defined Table 0203 (see Appendix A). An example of a Quebec healthcard number:

```
|AETU 7452 0315^^^Quebec Ministry of Health^JHN^^^^QC&Québec&ISO3166_2|
```

Also illustrated in this example is the Assigning Jurisdiction component, which in this case is Provence de Québec (Canada), identified with the code from the ISO 3166-2 coding system (QC).

PID-4 Alternate patient ID (CX-20, Not Supported) 00107

Note: NAACCR recommends use of PID-3 Patient Identifier List instead of PID-4 Alternate Patient ID. This field should not be populated.

PID-5 Patient name (XPN-250, Required, Repeating maximum 8) 00108

Definition: This field contains the names of the patient; the primary or legal name of the patient is reported first. Therefore, the name type code in this field should be "L - Legal". Refer to *HL7 Table 0200 - Name Type* for valid values. Repetition of this field is allowed for representing the same name in different character sets. Note that "last name prefix" is synonymous to "own family name prefix" of previous versions of HL7, as is "second and further given names or initials thereof" to "middle initial or name". Multiple given names and/or initials are separated by spaces.

> XPN data type components: <family name (ST)>&<last name prefix (ST)>^<given name (ST)>^<middle initial or name (ST)>^<suffix (e.g., JR or III) (ST)>^<prefix (e.g., DR) (ST)>^<degree (e.g., MD) (IS)>^<name type code (ID)>^<name representation code (ID)>
>
> For valid values, refer to *User-defined Table 0360 - Degree* for the degree component, to *HL7 Table 0200 - Name type* for the name type code, and to *HL7 Table 0465 - Name/address representation* for the name representation code.

For example:

```
|SAMPLE30^ALLAN^^^^^L|
```

This field is listed as a required field by HL7 2.5.1. Although uncommon, some laboratories may not currently collect patient name information that may be used for either PID-3 or PID-5. It is strongly recommended that either a personal identifier unique to the testing laboratory (PID-3) or the patient name (PID-5) be provided. When the patient name is not available, the string "UNKNOWN" should be transmitted in this field.

```
|UNKNOWN|
```

Note for cancer registries: The first repeat of this field, with name type "L – Legal" corresponds to NAACCR items Name--Last [2230], Name--First [2240], and Name--Middle [2250]. If the name type is "A – Alias" for an additional repeat, then this corresponds to NAACCR item Name—Alias [2280].

PID-6 Mother's maiden name (XPN-250, Not Supported) 00109

PID-7 Date/time of birth (TS-26, Required or empty) 00110

Definition: This field contains the patient's date and time of birth.

> Time stamp (TS) data type must be in the format:
> YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

For example, June 21, 1953 would appear as:

```
|19530621|
```

Note for cancer registries: Corresponds to NAACCR item Birth Date [240].

PID-8 Sex (IS-1, Required or empty) 00111

Definition: This field contains the patient's sex. Refer to *User-defined Table 0001 - Sex* for valid values.

For example, Female would appear as:

```
|F|
```

Map defined value from Table 0001 "Other" to NAACCR value "Other (hermaphrodite)."

Note for cancer registries: Corresponds to NAACCR item Sex [220]. Requires conversion to NAACCR codes (see NAACCR Standards Volume II).

PID-9 Patient alias (XPN-250, Required or Empty, Repeating maximum 8) 00112

Definition: This field contains names by which the patient has been known at some time. It is recommended that data be sent if available.

From V2.4, this field has been retained for backward compatibility only. It is recommended to use *PID-5 - Patient Name* for all patient names. This field contained the name(s) by which the patient has been known at some time. Refer to *HL7 Table 0200 - Name Type* for valid values.

XPN data type components: <family name (ST)>&<last name prefix (ST)>^<given name (ST)>^<middle initial or name (ST)>^<suffix (e.g., JR or III) (ST)>^<prefix (e.g., DR) (ST)>^<degree (e.g., MD) (IS)>^<name type code (ID)>^<name representation code (ID)>
For valid values, refer to *User-defined Table 0360 - Degree* for the degree component, to *HL7 Table 0200 - Name type* for the name type code, and to *HL7 Table 0465 - Name/address representation* for the name representation code.

In the example, this field is not valued.

Note for cancer registries: Corresponds to NAACCR item Name--Alias [2280]. If an alias is collected for the patient and it cannot be populated as a repeat of PID-5, then this field should be populated.

PID-10 Race (CE-250, Required or empty, Repeating maximum 6) 00113

Definition: This field identifies the patient's race and coding system used to code race. Refer to *User-defined Table 0005 - Race* for required values. For a more detailed table of race values see CDC's Race/Ethnicity Code Set 1.0 at: http://www.cdc.gov/PhinVSBrowser/StrutsController.do.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

For example:

```
|2054-5^Black or African American^HL70005^^^|
```

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.

(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

Note for cancer registries: Corresponds to NAACCR item Race 1 [160]. Requires conversion to NAACCR codes (see NAACCR Standards Volume II).

PID-11 Patient address (XAD-250, Required or empty, Repeating maximum 4) 00114

Definition: This field lists the mailing address of the patient (residence at diagnosis). Multiple addresses for the same person may be sent in the following sequence: the primary mailing address must be sent first in the sequence; if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence.

XAD data type components: <Street Address (SAD)>^ <Other Designation (ST)>^<City (ST)>^<State or Province (ST)> ^<ZIP or Postal Code (ST)>^<Country (ID)>^<address type (ID)>^<Other Geographic Designation (ST)>^<County/Parish Code (IS)>^<Census Tract (IS)>^<Address Representation Code (ID)>^<Address Validity Range (DR)>^<Effective Date (TS)>^<Expiration Date (TS)>

XAD data type components are defined as follows:
(1) Street Address (SAD): This datatype specifies an entity's street address and associated detail. Up to three components of the street address. Subcomponents of SAD data type are: Street or Mailing Address (ST)&Street Name (ST)&Dwelling Number (ST)
- Street or Mailing Address: This component specifies the street or mailing address of a person or institution. When referencing an institution, this first component is used to specify the institution name. When used in connection with a person, this component specifies the first line of the address.
- Street Name: This component specifies the name of the street.
- Dwelling Number: This component specifies a specific dwelling identification when a single street address contains multiple units.
(2) Other Designation (ST): Second line of address. In US usage, it qualifies address. Examples: Suite 555 or Fourth Floor. When referencing an institution, this component specifies the street address.
(3) City (ST): This component specifies the city, or district or place where the addressee is located depending upon the national convention for formatting addresses for postal usage.
(4) State or Province (ST): This component specifies the state or province where the addressee is located. State or province should be represented by the official postal service codes for that country.
(5) ZIP or Postal Code (ST): This component specifies the zip or postal code where the addressee is located. Zip or postal codes should be represented by the official codes for that country. In the US, the zip code takes the form 99999[-9999], while the Canadian postal code takes the form A9A9A9, and the Australian Postcode takes the form 9999.
(6) Country (ST): This component specifies the country where the addressee is located. HL7 specifies that the 3-character (alphabetic) form of ISO 3166-1 be used for the country code. Refer to *HL7 Table 0399 – Country code* for valid values.
(7) Address Type (ID): This component specifies the kind or type of address. Refer to *HL7 Table 0190 - Address type* for valid values.
(8) Other Geographic Designation (ST): This component specifies any other geographic designation. It includes county, bioregion, SMSA, etc.
(9) County/Parish Code (IS): A code that represents the county in which the specified address resides. User-defined Table 0289 - County/parish is used as the HL7 identifier for the user-defined table of values for this component. When this component is used to represent the county (or parish), component 8 <other geographic designation> should not duplicate it (i.e., the use of <other geographic designation> to represent the county is allowed only for the purpose of backward compatibility, and should be discouraged in this and future versions of HL7). Allowable values: codes defined by government.
(10) Census Tract (IS): A code that represents the census tract in which the specified address resides. *User-defined Table 0288 - Census Tract* is used as the HL7 identifier for the user-defined table of values for this component. Allowable values: codes defined by government
(11) Address Representation Code (ID): In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying. Refer to *HL7 Table 0465 - Name/address representation* for values.(12) Address Validity Range (DR): This component cannot be fully expressed. Identified as v 2.4 errata. Retained for backward compatibility only as of v 2.5. Refer to Effective Date and Expiration Date components. Do not use.
(13) Effective Date (TS): The first date, if known, on which the address is valid and active.
(14) Expiration Date (TS): The last date, if known, on which the address is valid and active.

For example: `|2166Wells Dr^Apt B^Seattle^WA^98109^USA^M^^King^^A|`

Note for cancer registries: Corresponds to NAACCR items Addr at DX--City [70], Addr at DX--State [80], Addr at DX--Postal Code [100], Addr at DX--No & Street [2330] and Address Type Code [7520].

PID-12 County code (IS-4, Not Supported) 00115

Note: For NAACCR messaging, this field is not supported. The value for County should be included in the XAD-9 County field. NAACCR recommends use of PID-11 Patient Address instead of PID-12 County Code.

PID-13 Phone number - home (XTN-250, Required or Empty, Repeating maximum 8) 00116

Definition: The patient's personal phone numbers. All personal phone numbers for the patient are sent in this sequence. The first sequence is considered the primary number. If the primary number is not sent, then a repeat delimiter is sent in the first sequence. For laboratory-based reporting, phone numbers provided in the first component of PID-13 will be accepted as well.

> XTN data type format and components: [NNN] [(999)]999-9999[X99999][B99999][C any text]^<telecommunication use code (ID)>^<telecommunication equipment type (ID)>^<email address (ST)>^<country code (NM)>^<area/city code (NM)>^<phone number (NM)>^<extension (NM)>^<any text (ST)>
>
> Refer to *HL7 Table 0201 - Telecommunication use code* and *HL7 Table 0202 - Telecommunication equipment type* for valid values.

For example:

```
|^PRN^PH^^^206^6793240^^after 5:00 pm~^VHN^PH^^^206^6795772|
```

or

```
|^^^^^206^6793240|
```

Note for cancer registries: Corresponds to NAACCR item Telephone [2360]. This field should be sent if the value is known.

Note: The legacy method of sending a formatted phone number in the first component of the telephone number is discouraged. It is preferable to send the area code as component 6 and the phone number as component 7 to prevent problems with parsing and displaying of phone numbers received.

In the example, this field is not valued.

PID-14 Phone number - business (XTN-250, Required or Empty, Repeating maximum 4) 00117

Definition: Patient's business phone number. Repetitions are permitted, with the first one the primary number. If the primary number is not sent, then a repeat delimiter is sent in the first sequence.

> XTN data type format and components: [NNN] [(999)]999-9999[X99999][B99999][C any text]^<telecommunication use code (ID)>^<telecommunication equipment type (ID)>^<email address (ST)>^<country code (NM)>^<area/city code (NM)>^<phone number (NM)>^<extension (NM)>^<any text (ST)>
>
> Refer to *HL7 Table 0201 - Telecommunication use code* and *HL7 Table 0202 - Telecommunication equipment type* for valid values.

Note for cancer registries: Corresponds to NAACCR item Telephone [2360]. This phone number may be used if the Home Phone number is not known.

This field should be sent if the value is known.

PID-15 Primary language (CE-250, Required or Empty) 00118

Definition: Patient's primary language. Refer to *User-defined Table 0296 - Language* (ISO 639) for suggested values.

> The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
> <identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
> <alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>
>
> CE data type components are defined as follows:
> (1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
> (2) Text (ST). Name or description of the item in question.
> (3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
> (4-6) Three components analogous to 1-3 for the alternate or local coding system.

This field should be sent if the value is known. The default value if this is not populated may vary from jurisdiction to jurisdiction

PID-16 Marital status (CE-250, Required or empty) 00119

Definition: This field contains the patient's marital status. Refer to *User-defined Table 0002 - Marital status* for suggested values.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

For example:

```
|S^single^HL70002|
```

Note for cancer registries: Corresponds to NAACCR item Marital Status at DX [150]. Requires conversion to NAACCR codes (see NAACCR Standards Volume II).

PID-17 Religion (CE-250, Required or Empty) 00120

Definition: This field contains the patient's religion, for example, Baptist, Catholic, Methodist, etc. *User-defined Table 0006 - Religion* from HL7 Standard Version 2.5 is used as the HL7 identifier for the user-defined table of values for this field.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

In the example, this field is not valued.

Note for cancer registries: Corresponds to NAACCR item Religion [260]. If this value is known, it should be populated.

PID-18 Patient account number (CX-250, Conditional or Empty) 00121

Definition: This field contains the patient account number assigned by accounting to which all charges, payments, etc., are recorded. It is used to identify the patient's account. Refer to *HL7 Table 0061 - Check digit scheme* in Chapter 2.

CX data type components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>^<Effective Date(DT)>^<Expiration Date(DT)>^<Assigning Jurisdiction(CWE)>^<Assigning Agency or Department(CWE)>

Components are defined as follows:
(1) ID number (ST).

(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.
(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.
(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.
(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(7) Effective Date (DT). The first date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].
(8) Expiration Date (DT). The last date, if known, on which the identifier is valid and active. Date is in format YYYY[MM[DD]].
(9) Assigning Jurisdiction (CWE). The geo-political body that assigned the identifier in component 1. Refer to *User-Defined Table 0347 State/Province* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is a state or province. This table is country specific. In the US postal codes may be used. Subcomponents of (9): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>
(10) Assigning Agency or Department (CWE). The agency or department that assigned the identifier in component 1. Refer to *User-defined Table –0530 Organizations, Agency, Department* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is an organization, agency or department. This is populated with site-specific assigning authorities. Subcomponents of (10): <Identifier (ST)>&<Text (ST)>&<Name of Coding System (ID)>&<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System Version ID (ST)>&<Alternate Coding System Version ID (ST)>&<Original Text (ST)>

In the example, this field is not valued.

Patient Account number should be populated in the PID-3 Patient identifier list. If the value is known, and the system is unable to populate the PID-3, then the value should be populated here.

PID-19 SSN number - patient (ST-16, Conditional or Empty) 00122

Definition: This field has been retained for backward compatibility only. It is recommended to use *PID-3-patient identifier* list for all patient identifiers. However, in order to maintain backward compatibility, this field should also be populated. When used for backward compatibility, this field contains the patient's Social Security number. This number may also be an RR retirement number.

For example:

```
|423523049|
```

Note: NAACCR Recommends use of PID-3 Patient Identifier List instead of PID-19 SSN number. Patient Social Security Number should be populated in the PID-3 Patient identifier list. If the value is known, and the system is unable to populate the PID-3, then the value should be populated here.

PID-20 Driver's license number - patient (DLN-25, Not Supported) 00123

PID-21 Mother's identifier (CX-250, Not Supported) 00124

PID-22 Ethnic group (CE-250, Required or empty, Repeating maximum 4) 00125

Definition: This field further defines patient ancestry. Suggested values are listed in *User-defined Table 0189 - Ethnic group*. State- or locally-defined codes may be listed in the first triplet. For a more detailed table see CDC's Race/Ethnicity Code Set 1.0 at: https://phinvads.cdc.gov/vads/SearchVocab.action. According to HL7, the second triplet of the CE data type for Ethnic group (alternate identifier, alternate text, and name of alternate coding system) is reserved for codes consistent with the categories established by the U.S. Office of Management and Budget (OMB). When both triplets are used, the second triplet codes must map to the OMB-compliant codes.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)>^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.

(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

Note for cancer registries: Corresponds to NAACCR data item Spanish/Hispanic Origin [190].

PID-23 Birth place (ST-250, Required or Empty) 00126

Definition: This field indicates the location of the patient's birth, for example "St. Francis Community Hospital of Lower South Side." The actual address is reported in PID-11 with an identifier of "N."

This field does not use NAACCR birthplace codes.

PID-24 Multiple birth indicator (ID-1, Not Supported) 00127

PID-25 Birth order (NM-2, Not Supported) 00128

PID-26 Citizenship (CE-250, Not Supported) 00129

PID-27 Veterans military status (CE-250, Not Supported) 00130

PID-28 Nationality (CE-250, Not Supported) 00739

PID-29 Patient death date and time (TS-26, Required or empty) 00740

Definition: This field contains the date and time at which the patient death occurred. This field should only be valued if PID-30 is valued "yes."

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

In the example, this field is not valued.

Note for cancer registries: Corresponds to NAACCR data item Path-Date of Death [7550].

PID-30 Patient death indicator (ID-1, Required or empty) 00741

Definition: This field indicates whether or not the patient is deceased. Refer to *HL7 Table 0136 - Yes/No indicator* for valid values.

The value of an ID data type follows the formatting rules for an ST data type except that it is drawn from a table of HL7 legal values.

In the example, this field is not valued.

Note for cancer registries: Corresponds to NAACCR data item Vital Status [1760]. Requires conversion to NAACCR codes (see NAACCR Standards Volume II).

PID-31 Identity Unknown Indicator (ID-1, Required or Empty) 01535

Definition: This field indicates whether or not the patient's/person's identity is known. Refer to HL7 Table 0136 - Yes/no Indicator for valid values.

Y the patient's/person's identity is unknown
N the patient's/person's identity is known

PID-32 Identity Reliability Code (IS-20, Required or Empty, Repeating maximum 3) 01536

Definition: This field contains a coded value used to communicate information regarding the reliability of patient/person identifying data transmitted via a transaction. Values could indicate that certain fields on a PID segment for a given patient/person are known to be false (e.g., use of default or system-generated values for Date of Birth or Social Security Number. Refer to *User-defined Table 0445 - Identity Reliability Code* for suggested values.

PID-33 Last Update Date/Time (TS-26, Not Supported) 01537

PID-34 Last Update Facility (HD-241, Not Supported) 01538

PID-35 Species Code (CE-250, Not Supported) 01539

PID-36 Breed Code (CE-250, Not Supported) 01540

PID-37 Strain (ST-80, Not Supported) 01541

PID-38 Production Class Code (CE-250, Not Supported) 01542

PID-39 Tribal Citizenship (CWE-250, Required or Empty, Repeating maximum 5) 01840

Definition: This field contains the information related to a person's tribal citizenship. For tribal citizenship, in the United States, HL7 recommends using the Bureau of Indian Affairs (BIA) Tribal Identity List. For a local definition, *User-defined Table 0171 - Citizenship* should be used.

This field repeats since persons can have tribal membership(s) and can be members of more than one tribe. The Name of Coding System component(s) of the CWE datatype should be used to identify the table from which tribal membership is drawn.

CWE Datatype Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

2.7.2 Next of Kin/Associated Parties (NK1) Segment

Contains information about the patient's next of kin and other associated or related parties. This is a repeating segment, allowing for multiple related parties. This segment is optional for cancer reporting.

NK1 Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	R			00190	Set ID - NK1		R	[1..1]
2	250	XPN	O	Y		00191	Name		RE	[0..4]
3	250	CE	O		0063	00192	Relationship		RE	[0..1]
4	250	XAD	O	Y		00193	Address		RE	[0..4]
5	250	XTN	O	Y		00194	Phone number		RE	[0..4]
6	250	XTN	O	Y		00195	Business phone number		X	[0..0]
7	250	CE	O		0131	00196	Contact role		X	[0..0]
8	8	DT	O			00197	Start date		X	[0..0]
9	8	DT	O			00198	End date		X	[0..0]
10	60	ST	O			00199	Next of kin/AP job title		X	[0..0]
11	20	JCC	O		0327/ 0328	00200	Next of kin/AP job code/class		X	[0..0]
12	250	CX	O			00201	Next of kin/AP		X	[0..0]

							employee number			
13	250	XON	O	Y		00202	Organization name - NK1		X	[0..0]
14	250	CE	O		0002	00119	Marital status		X	[0..0]
15	1	IS	O		0001	00111	Sex		X	[0..0]
16	26	TS	O			00110	Date/time of birth		X	[0..0]
17	2	IS	O	Y	0223	00755	Living dependency		X	[0..0]
18	2	IS	O	Y	0009	00145	Ambulatory status		X	[0..0]
19	250	CE	O	Y	0171	00129	Citizenship		X	[0..0]
20	250	CE	O		0296	00118	Primary language		X	[0..0]
21	2	IS	O		0220	00742	Living arrangement		X	[0..0]
22	250	CE	O		0215	00743	Publicity code		X	[0..0]
23	1	ID	O		0136	00744	Protection indicator		X	[0..0]
24	2	IS	O		0231	00745	Student indicator		X	[0..0]
25	250	CE	O		0006	00120	Religion		X	[0..0]
26	250	XPN	O	Y		00746	Mother's maiden name		X	[0..0]
27	250	CE	O		0212	00739	Nationality		X	[0..0]
28	250	CE	O	Y	0189	00125	Ethnic group		X	[0..0]
29	250	CE	O	Y	0222	00747	Contact reason		X	[0..0]
30	250	XPN	O	Y		00748	Contact person's name		X	[0..0]
31	250	XTN	O	Y		00749	Contact person's telephone number		X	[0..0]
32	250	XAD	O	Y		00750	Contact person's address		X	[0..0]
33	250	CX	O	Y		00751	Next of kin/AP's identifiers		X	[0..0]
34	2	IS	O		0311	00752	Job status		X	[0..0]
35	250	CE	O	Y	0005	00113	Race		X	[0..0]
36	2	IS	O		0295	00753	Handicap		X	[0..0]
37	16	ST	O			00754	Contact person social security #		X	[0..0]
38	250	ST	O			01905	Next of Kin Birth Place		X	[0..0]
39	2	IS	O		0099	00146	VIP Indicator		X	[0..0]

Example:
The sample report does not contain next of kin or emergency contact information, so an example is added here.

```
NK1|1|SAMPLE30^JANET^ALICE^^^L|MTH^MOTHER^HL70063|2166 Wells Dr^Apt
  B^Seattle^WA^98109|^^^^^679^3211320<CR>
```

This example segment shows information data for the patient's mother, Janet Alice Sample30, as the next of kin. The mother's contact information such as home address and phone number is shown here.

NK1 Field Definitions

Usage notes: It is not anticipated that several NK1 fields (NK1-7 through NK1-37) will be used for electronic laboratory reporting purposes.

NK1-1 Set ID - NK1 (SI-4, Required) 00190

Definition: The Set ID field numbers the repetitions of the segment within its association with the PID. For the first occurrence of the segment, the sequence number shall be 1, for the second occurrence, the sequence number shall be 2, etc.

SI data type is a non-negative integer in the form of an NM field. The uses of this data type are defined in the chapters defining the segments and messages in which it is used.

A Set ID of 1 indicates that this segment is the first set of next of kin data, and Set ID of 2 indicates that this is the second set of next of kin data.

NK1-2 Name (XPN-250, Required or Empty, Repeating maximum 4) 00191

Definition: This field gives the name of the next of kin or associated party. Multiple names for the same person are allowed, but the legal name must be sent in the first sequence. If the legal name is not sent, then the repeat delimiter must be sent in the first sequence.

XPN data type components: <family name (ST)>&<last name prefix (ST)>^<given name (ST)>^<middle initial or name (ST)>^<suffix (e.g., JR or III) (ST)>^<prefix (e.g., DR) (ST)>^<degree (e.g., MD) (IS)>^<name type code(ID)>^<name representation code (ID)>

For valid values, refer to *User-defined Table 0360 - Degree* for the degree component, to *HL7 Table 0200 name type* for the name type code, and to *HL7 Table 0465 - Name/address representation* for the name representation code.

For example:

```
|Sample30^Janet^Alice^^^^L|
```

where L indicates that the name type is a legal name.

If the value is known, it should be populated in this field.

NK1-3 Relationship (CE-250, Required or Empty) 00192

Definition: This field defines the personal relationship of the next of kin. *User-defined Table 0063 - Relationship* gives suggested values from HL7 Standard, Version 2.5.1.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

For example:

```
|MTH^mother^HL70063|
```

If the value is known, it should be populated in this field.

NK1-4 Address (XAD-250, Required or Empty, Repeating maximum 4) 00193

Definition: This field lists the mailing address of the next of kin/associated party identified above. Multiple addresses for the same person may be sent in the following sequence: the primary mailing address must be sent first in the sequence; if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence. If there is only one repetition of this field and an address type is not given, it is assumed to be the primary mailing address.

XAD data type components: <street address (ST)>^ <other designation (ST)>^<city (ST)>^<state or province (ST)>^<ZIP or postal code (ST)>^<country (ID)>^<address type (ID)>^<other geographic designation (ST)>^<county/parish code (IS)>^<census tract (IS)>^<address representation code (ID)>

For valid values in these components, refer to *User-defined Table 0212 - Nationality* for country codes, *HL7 Table 0190 - Address type* for address type codes, *User-defined Table 0289 - County/parish* for county/parish codes, *User-defined Table 0288 - Census Tract* for census tract codes, and *HL7 Table 0465 - Name/address representation* for address representation codes.

For example:

```
|2166 Wells Dr^Apt B^Seattle^WA^98109^USA^M^^King^^A|
```

When sending multiple addresses, the appropriate type code must be indicated. If the value is known, it should be populated in this field.

NK1-5 Phone number (XTN-250, Required or Empty, Repeating maximum 4) 00194

Definition: The next of kin/associated party's personal phone numbers. All personal phone numbers for the next of kin/associated party are sent in this sequence. The first sequence is considered the primary number. If the primary number is not sent, then a repeat delimiter is sent in the first sequence.

> XTN data type format and components: [NNN] [(999)]999-9999[X99999][B99999][C any text]^<telecommunication use code (ID)>^<telecommunication equipment type (ID)>^<email address (ST)>^<country code (NM)>^<area/city code (NM)>^<phone number (NM)>^<extension (NM)>^<any text (ST)>
>
> Refer to *HL7 Table 0201 - Telecommunication use code* and *HL7 Table 0202 - Telecommunication equipment type* for valid values.

For example:

```
|^^^^^206^6793240|
```

If the value is known, it should be populated in this field.

NK1-6 Business phone number (XTN-250, Not Supported) 00195

NK1-7 Contact role (CE-250, Not Supported) 00196

NK1-8 Start date (DT-8, Not Supported) 00197

NK1-9 End date (DT-8, Not Supported) 00198

NK1-10 Next of kin / associated parties job title (ST-60, Not Supported) 00199

NK1-11 Next of kin / associated parties job code/class (JCC-20, Not Supported) 00200

NK1-12 Next of kin / associated parties employee number (CX-250, Not Supported) 00201

NK1-13 Organization name - NK1 (XON-250, Not Supported) 00202

NK1-14 Marital status (CE-250, Not Supported) 00119

NK1-15 Administrative sex (IS-1, Not Supported) 00111

NK1-16 Date/time of birth (TS-26, Not Supported) 00110

NK1-17 Living dependency (IS-2, Not Supported) 00755

NK1-18 Ambulatory status (IS-2, Not Supported) 00145

NK1-19 Citizenship (CE-250, Not Supported) 00129

NK1-20 Primary language (CE-250, Not Supported) 00118

NK1-21 Living arrangement (IS-2, Not Supported) 00742

NK1-22 Publicity code (CE-250, Not Supported) 00743

NK1-23 Protection indicator (ID-1, Not Supported) 00744

NK1-24 Student indicator (IS-2, Not Supported) 00745

NK1-25 Religion (CE-250, Not Supported) 00120

NK1-26 Mother's maiden name (XPN-250, Not Supported) 00109

NK1-27 Nationality (CE-250, Not Supported) 00739

NK1-28 Ethnic group (CE-250, Not Supported) 00125

NK1-29 Contact reason (CE-250, Not Supported) 00747

NK1-30 Contact person's name (XPN-250, Not Supported) 00748

NK1-31 Contact person's telephone number (XTN-250, Not Supported) 00749

NK1-32 Contact person's address (XAD-250, Not Supported) 00750

NK1-33 Next of kin/associated party's identifiers (CX-250, Not Supported) 00751

NK1-34 Job status (IS-2, Not Supported) 00752

NK1-35 Race (CE-250, Not Supported) 00113

NK1-36 Handicap (IS-2, Not Supported) 00753

NK1-37 Contact person's social security number (ST-16, Not Supported) 00754

NK1-38 Next-of-Kin Birth Place (ST-250, Not Supported) 01905

NK1-39 VIP Indicator (IS-2, Not Supported) 00146

2.7.3 Patient Visit (PV1) Segment

The PV1 segment is used by cancer reporting applications to communicate associated provider information. Not all vendor software may be able to support this segment; if not, this segment is not required.

PV1 Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			00131	Set ID - PV1		RE	[0..1]
2	1	IS	R		0004	00132	Patient Class		R	[1..1]
3	80	PL	O			00133	Assigned Patient Location		X	[0..0]
4	2	IS	O		0007	00134	Admission Type		X	[0..0]

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
5	250	CX	O			00135	Preadmit Number		X	[0..0]
6	80	PL	O			00136	Prior Patient Location		X	[0..0]
7	250	XCN	O	Y	0010	00137	Attending Doctor	2460, 2465	RE	[0..2]
8	250	XCN	O	Y	0010	00138	Referring Doctor	2470, 2475	RE	[0..2]
9	250	XCN	B	Y	0010	00139	Consulting Doctor		RE	[0..2]
10	3	IS	O		0069	00140	Hospital Service		X	[0..0]
11	80	PL	O			00141	Temporary Location		X	[0..0]
12	2	IS	O		0087	00142	Preadmit Test Indicator		X	[0..0]
13	2	IS	O		0092	00143	Re-admission Indicator		X	[0..0]
14	6	IS	O		0023	00144	Admit Source		X	[0..0]
15	2	IS	O	Y	0009	00145	Ambulatory Status		X	[0..0]
16	2	IS	O		0099	00146	VIP Indicator		X	[0..0]
17	250	XCN	O	Y	0010	00147	Admitting Doctor		RE	[0..2]
18	2	IS	O		0018	00148	Patient Type		X	[0..0]
19	250	CX	O			00149	Visit Number		X	[0..0]
20	50	FC	O	Y	0064	00150	Financial Class		X	[0..0]
21	2	IS	O		0032	00151	Charge Price Indicator		X	[0..0]
22	2	IS	O		0045	00152	Courtesy Code		X	[0..0]
23	2	IS	O		0046	00153	Credit Rating		X	[0..0]
24	2	IS	O	Y	0044	00154	Contract Code		X	[0..0]
25	8	DT	O	Y		00155	Contract Effective Date		X	[0..0]
26	12	NM	O	Y		00156	Contract Amount		X	[0..0]
27	3	NM	O	Y		00157	Contract Period		X	[0..0]
28	2	IS	O		0073	00158	Interest Code		X	[0..0]
29	4	IS	O		0110	00159	Transfer to Bad Debt Code		X	[0..0]
30	8	DT	O			00160	Transfer to Bad Debt Date		X	[0..0]
31	10	IS	O		0111	00161	Bad Debt Agency Code		X	[0..0]
32	12	NM	O			00162	Bad Debt Transfer Amount		X	[0..0]
33	12	NM	O			00163	Bad Debt Recovery Amount		X	[0..0]
34	1	IS	O		0111	00164	Delete Account Indicator		X	[0..0]
35	8	DT	O			00165	Delete Account Date		X	[0..0]
36	3	IS	O		0112	00166	Discharge Disposition		X	[0..0]
37	47	DLD	O		0113	00167	Discharged to Location		X	[0..0]
38	250	CE	O		0114	00168	Diet Type		X	[0..0]
39	2	IS	O		0115	00169	Servicing Facility		X	[0..0]
40	1	IS	B		0116	00170	Bed Status		X	[0..0]
41	2	IS	O		0117	00171	Account Status		X	[0..0]
42	80	PL	O			00172	Pending Location		X	[0..0]
43	80	PL	O			00173	Prior Temporary Location		X	[0..0]

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
44	26	TS	O			00174	Admit Date/Time		X	[0..0]
45	26	TS	O	Y		00175	Discharge Date/Time		X	[0..0]
46	12	NM	O			00176	Current Patient Balance		X	[0..0]
47	12	NM	O			00177	Total Charges		X	[0..0]
48	12	NM	O			00178	Total Adjustments		X	[0..0]
49	12	NM	O			00179	Total Payments		X	[0..0]
50	250	CX	O		0203	00180	Alternate Visit ID		X	[0..0]
51	1	IS	O		0326	01226	Visit Indicator		X	[0..0]
52	250	XCN	B	Y	0010	01274	Other Healthcare Provider		X	[0..0]

Example:

```
PV1|1|N|||||ATTENDINGID^ATTENDINGDR^MANAGING|REFERRINGID^REFERRER^FOLLOWUP^^^DR<CR>
```

This example segment portrays the sending of a managing and a referring provider for the example report.

PV1 Field Definitions

PV1-1 Set ID - PV1 (SI-4, Required or Empty) 00131

Definition: This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

Note: Set ID should be |1| as the PV1 is not expected to repeat.

PV1-2 Patient class (IS-1, Required) 00132

Definition: This field is used by systems to categorize patients by site. It does not have a consistent industry-wide definition. It is subject to site-specific variations. Refer to *User-defined Table 0004 - Patient class* for suggested values.

Note: PV1-2 is an HL7 required field—because there is no practical usage for this field in the cancer reporting message, the value "N" for Not Applicable will be sent.

PV1-3 Assigned patient location (PL-80, Not Supported) 00133

PV1-4 Admission type (IS-2, Not Supported) 00134

PV1-5 Preadmit number (CX-250, Not Supported) 00135

PV1-6 Prior patient location (PL-80, Not Supported) 00136

PV1-7 Attending doctor (XCN-250, Required or empty, Repeating maximum 2) 00137

Definition: This field contains the attending physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple attending doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. Depending on local agreements, either ID or the name may be absent in this field.

Note for cancer registries: Corresponds to NAACCR item Physician Managing [2460] for License number or other local number or NPI Physician Managing [2465] for National Provider Identifier (NPI).

PV1-8 Referring doctor (XCN-250, Required or empty, Repeating maximum 2) 00138

Definition: This field contains the referring physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple referring doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. Depending on local agreements, either the ID or the name may be absent from this field. Refer to *User-defined Table 0010 - Physician ID* for suggested values.

Note for cancer registries: Corresponds to NAACCR item Physician Follow-up [2470] for License number or other local number or NPI Physician Managing [2475] for National Provider Identifier (NPI).

PV1-9 Consulting doctor (XCN-250, Required or empty, Repeating maximum 2) 00139

Definition: Although HL7 has recommended that this field be used for backward compatibility only as it has been replaced with the ROL segment as of v2.5, this replacement was only done for Patient Administration messages. Results messages have incorporated the ROL segment only in later version of the HL7 standard; therefore, NAACCR recommends that this field be used to transmit the consulting physician information in this version of cancer reporting messaging. The field sequences are used to indicate multiple consulting doctors. Depending on local agreements either the ID or the name may be absent from this field. Refer to *User-defined Table 0010 - Physician ID* for suggested values.

PV1-10 Hospital service (IS-3, Not Supported) 00140

PV1-11 Temporary location (PL-80, Not Supported) 00141

PV1-12 Preadmit test indicator (IS-2, Not Supported) 00142

PV1-13 Re-admission indicator (IS-2, Not Supported) 00143

PV1-14 Admit source (IS-6, Not Supported) 00144

PV1-15 Ambulatory status (IS-2, Not Supported) 00145

PV1-16 VIP indicator (IS-2, Not Supported) 00146

PV1-17 Admitting doctor (XCN-250, Required or empty, Repeating maximum 2) 00147

Definition: This field contains the admitting physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple admitting doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. By local agreement, the name or ID may be absent in this field. Refer to User-defined *Table 0010 - Physician ID* for suggested values.

PV1-18 Patient type (IS-2, Not Supported) 00148

PV1-19 Visit number (CX-250, Not Supported) 00149

PV1-20 Financial class (FC-50, Not Supported) 00150

PV1-21 Charge price indicator (IS-2, Not Supported) 00151

PV1-22 Courtesy code (IS-2, Not Supported) 00152

PV1-23 Credit rating (IS-2, Not Supported) 00153

PV1-24 Contract code (IS-2, Not Supported) 00154

PV1-25 Contract effective date (DT-8, Not Supported) 00155

PV1-26 Contract amount (NM-12, Not Supported) 00156

PV1-27 Contract period (NM-3, Not Supported) 00157

PV1-28 Interest code (IS-2, Not Supported) 00158

PV1-29 Transfer to bad debt code (IS-4, Not Supported) 00159

PV1-30 Transfer to bad debt date (DT-8, Not Supported) 00160

PV1-31 Bad debt agency code (IS-10, Not Supported) 00161

PV1-32 Bad debt transfer amount (NM-12, Not Supported) 00162

PV1-33 Bad debt recovery amount (NM-12, Not Supported) 00163

PV1-34 Delete account indicator (IS-1, Not Supported) 00164

PV1-35 Delete account date (DT-8, Not Supported) 00165

PV1-36 Discharge disposition (IS-3, Not Supported) 00166

PV1-37 Discharged to location (DLD-47, Not Supported) 00167

PV1-38 Diet type (CE-250, Not Supported) 00168

PV1-39 Servicing facility (IS-2, Not Supported) 00169

PV1-40 Bed status (IS-1, Not Supported) 00170

PV1-41 Account status (IS-2, Not Supported) 00171

PV1-42 Pending location (PL-80, Not Supported) 00172

PV1-43 Prior temporary location (PL-80, Not Supported) 00173

PV1-44 Admit date/time (TS-26, Not Supported) 00174

PV1-45 Discharge date/time (TS-26, Not Supported) 00175

PV1-46 Current patient balance (NM-12, Not Supported) 00176

PV1-47 Total charges (NM-12, Not Supported) 00177

PV1-48 Total adjustments (NM-12, Not Supported) 00178

PV1-49 Total payments (NM-12, Not Supported) 00179

PV1-50 Alternate visit ID (CX-250, Not Supported) 00180

PV1-51 Visit indicator (IS-1, Not Supported) 01226

PV1-52 Other healthcare provider (XCN-250, Not Supported) 01274

2.8 SEGMENTS COMMON TO ORDERS AND OBSERVATIONS

2.8.1 Common Order (ORC) Segment

Used to transmit fields that are common to all orders (all types of services that are requested).

ORC Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	2	ID	R		0119	00215	Order Control		R	[1..1]
2	22	EI	C			00216	Placer Order Number		X	[0..0]
3	22	EI	C			00217	Filler Order Number		X	[0..0]
4	22	EI	O			00218	Placer Group Number		X	[0..0]
5	2	ID	O		0038	00219	Order Status		X	[0..0]
6	1	ID	O		0121	00220	Response Flag		X	[0..0]
7	200	TQ	O			00221	Quantity/Timing		X	[0..0]
8	200	EIP	O			00222	Parent		X	[0..0]
9	26	TS	O			00223	Date/Time of Transaction		X	[0..0]
10	250	XCN	O	Y		00224	Entered By		X	[0..0]
11	250	XCN	O	Y		00225	Verified By		X	[0..0]
12	250	XCN	O	Y		00226	Ordering Provider		X	[0..0]
13	80	PL	O			00227	Enterer's Location		X	[0..0]
14	250	XTN	O	Y		00228	Call Back Phone Number		X	[0..0]
15	26	TS	O			00229	Order Effective Date/Time		X	[0..0]
16	250	CE	O			00230	Order Control Code Reason		X	[0..0]
17	250	CE	O			00231	Entering Organization		X	[0..0]
18	250	CE	O			00232	Entering Device		X	[0..0]
19	250	XCN	O	Y		00233	Action By		X	[0..0]
20	250	CE	O		0339	01310	Advanced Beneficiary Notice Code		X	[0..0]

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
21	250	XON	O	Y		01311	Ordering Facility Name	7190, 7200	C	[0..4]
22	250	XAD	O	Y		01312	Ordering Facility Address	7210, 7220, 7230, 7240, 7235	RE	[0..4]
23	250	XTN	O	Y		01313	Ordering Facility Phone Number	7250	RE	[0..4]
24	250	XAD	O	Y		01314	Ordering Provider Address	7140, 7150, 7160, 7170, 7165	RE	[0..4]
25	250	CWE	O			01473	Order Status Modifier		X	[0..0]
26	60	CWE	C		0552	01641	Advanced Beneficiary Notice Override Reason		X	[0..0]
27	26	TS	O			01642	Filler's Expected Availability Date/Time		X	[0..0]
28	250	CWE	O		0177	00615	Confidentiality Code		RE	[0..1]
29	250	CWE	O		0482	01643	Order Type		X	[0..0]
30	250	CNE	O		0483	01644	Enterer Authorization Mode		X	[0..0]
31	250	CWE	O			02286	Parent Universal Service Identifier		CE	[0..1]

Example:

```
ORC|RE|||||||||||||||||||ATLANTA CANCER SPECIALISTS|STREET ADDRESS 1^SUITE #^ATLANTA^GA
^30303|^^^^^404^3213000<CR>
```

This example segment shows the name, address, and phone number for Atlanta Cancer Specialists, the ordering facility.

ORC Field Definitions

ORC-1 Order control (ID-2, Required) 00215

Definition: Determines the function of the order segment.

Note: As ORC-1 is an HL7 required field, the value "RE" (Observations to Follow) will be used for this interface.

ORC-2 Placer order number (EI-22, Not Supported) 00216

ORC-3 Filler order number (EI-22, Not Supported) 00217

ORC-4 Placer group number (EI-22, Not Supported) 00218

ORC-5 Order status (ID-2, Not Supported) 00219

ORC-6 Response flag (ID-1, Not Supported) 00220

ORC-7 Quantity/timing (TQ-200, Not Supported) 00221

ORC-8 Parent (EIP-200, Not Supported) 00222

ORC-9 Date/time of transaction (TS-26, Not Supported) 00223

ORC-10 Entered by (XCN-250, Not Supported) 00224

ORC-11 Verified by (XCN-250, Not Supported) 00225

ORC-12 Ordering provider (XCN-250, Not Supported) 00226

ORC-13 Enterer's location (PL-80, Not Supported) 00227

ORC-14 Call back phone number (XTN-250, Not Supported) 00228

ORC-15 Order effective date/time (TS-26, Not Supported) 00229

ORC-16 Order control code reason (CE-250, Not Supported) 00230

ORC-17 Entering organization (CE-250, Not Supported) 00231

ORC-18 Entering device (CE-250, Not Supported) 00232

ORC-19 Action by (XCN-250, Not Supported) 00233

ORC-20 Advanced beneficiary notice code (CE-250, Not Supported) 01310

ORC-21 Ordering facility name (XON-250, Conditional, Repeating maximum 4) 01311

Definition: This field indicates the medical facility where the specimen was obtained. Examples include inpatient facilities, outpatient surgical facilities, and medical clinics. Knowledge of the ordering facility allows public health officials to follow-up on positive tests to obtain further clinical and epidemiologic information. Information on the ordering facility is most relevant to cancer registries. Either or both the Ordering facility name (ORC-21) or the Ordering provider (OBR-16) must be provided, both fields cannot be blank. Note that both may be valued if both the Ordering Facility and the Ordering Provider are being transmitted.

> XON data type components: <Organization Name (ST)> ^ <Organization Name Type Code (IS)> ^ <DEPRECATED-ID Number (NM)> ^ <Check Digit (NM)> ^ <Check Digit Scheme (ID)> ^ <Assigning Authority (HD)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility (HD)> ^ <Name Representation Code (ID)> ^ <Organization Identifier (ST)>
> Subcomponents of Assigning Authority (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>
> Subcomponents of Assigning Facility (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

The facility's local number or AHA identifier, or other national identifier, should be placed in the tenth component <Organization Identifier (SD)> if there is one available, and "AHA" should appear in <Assigning Authority (HD)> indicating that the identifier used to identify the laboratory has been assigned by AHA. For hospitals, the AHA typically is used in the U.S.; however, for other health care facilities other national identifiers could be used. The National Provider Identifier (NPI) for all health care facilities and providers should be available and can be used.

For example:

```
|University Hospital^^^^^AHA^^^^470381|
```

Note for cancer registries: Corresponds to NAACCR items Path Ordering Facility Number NPI [7195] (for National Provider Identifier) or Path Ordering Facility Number [7190] (for AHA Number or other facility identification number) and Path Ordering Facility Name [7200].

ORC-22 Ordering facility address (XAD-250, Required or empty, Repeating maximum 4) 01312

Definition: This field contains the address of the facility placing the order.

XAD data type components: <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <ZIP or postal code(ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)> ^ <address representation code (ID)>

For valid values in these components, refer to *User-defined Table 0212 - Nationality* for country codes, HL7 *Table 0190 - Address type* for address type codes, *User-defined Table 0289 - County/parish* for county/parish codes, *User-defined Table 0288 - Census Tract* for census tract codes, and *HL7 Table 0465 - Name/address representation* for address representation codes.

For example:

```
|2217 Rainier Way^^Renton^WA^98002^USA^M^^Black Hawk^^A|
```

Note for cancer registries: Corresponds to NAACCR items Path Ordering Fac Addr--No & St [7210], Path Ordering Fac Addr--City [7220], Path Ordering Fac Addr--State [7230], Path Ordering Fac--Postal Code [7240] and Path Ordering Fac-Country [7235].

ORC-23 Ordering facility phone number (XTN-250, Required or empty, Repeating maximum 4) 01313

Definition: This field contains the telephone number of the facility placing the order. This field further identifies the laboratory identified in ORC-21.

XTN data type format and components: [NNN] [(999)]999-9999[X99999][B99999][C any text]^<telecommunication use code (ID)>^<telecommunication equipment type (ID)>^<email address (ST)>^<country code (NM)>^<area/city code (NM)>^<phone number (NM)>^<extension (NM)>^<any text (ST)>

Refer to *HL7 Table 0201 - Telecommunication use code* and *HL7 Table 0202 - Telecommunication equipment type* for valid values.

For example:

```
|^ASN^PH^helpline@medilab.com^^206^5549097|
```

Note for cancer registries: Corresponds to NAACCR item Path Ordering Fac--Telephone [7250].

ORC-24 Ordering provider address (XAD-250, Required or empty, Repeating maximum 4) 01314

Definition: This field contains the address of the care provider requesting the order. This field contains relevant address information for the ordering provider described in OBR-16.

XAD data type components: <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <ZIP or postal code(ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)> ^ <address representation code (ID)>

For valid values in these components, refer to *User-defined Table 0212 - Nationality* for country codes, HL7 *Table 0190 - Address type* for address type codes, *User-defined Table 0289 - County/parish* for county/parish codes, *User-defined Table 0288 - Census Tract* for census tract codes, and *HL7 Table 0465 - Name/address representation* for address representation codes.

For example:

```
|115 Pike Plaza^Suite 2100^Seattle^WA^98122^USA^^^^^A|
```

Note for cancer registries: Corresponds to NAACCR items Path Ordering Client/Phys Addr--Street [7140], Path Ordering Client/Phys Addr--City [7150], Path Ordering Client/Phys Addr--State [7160], Path Ordering Client/Phys Addr--Postal Code [7170] and Path Order Client/Phys Addr—Country [7165].

ORC-25 Order Status Modifier (CWE-250, Not Supported) 01473

ORC-26 Advanced Beneficiary Notice Override Reason (CWE-60, Not Supported) 01641

ORC-27 Filler's Expected Availability Date/Time (TS-26, Not Supported) 01642

ORC–28 Confidentiality Code (CWE-250, Required or Empty) 00615

Definition: This field contains information about the level of security and/or sensitivity surrounding the order (e.g., highly sensitive, not sensitive, sensitive, etc.). Refer to *HL7 Table 0177 – Confidentiality Code* for allowed values. The specific treatment of data with a particular confidentiality level is subject to site-specific negotiation.

CWE data type components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

ORC–29 Order Type (CWE-250, Not Supported) 01643

ORC–30 Enterer Authorization Mode (CNE-250, Not Supported) 01644

ORC-31 Parent Universal Service Identifier (CWE-250, Conditional or Empty) 02286

Definition: This field contains the identifier code for the parent order, as identified in ORC-8 Parent (Conditionality predicate: may be populated if there is a parent), which caused this observation/test/battery to be performed. This can be based on local and/or "universal" codes. NAACCR recommends the "universal" service identifier." Note that ORC-8, Parent, does not have to be present for ORC-31 to be used.

ORC-31 - parent universal service identifier is the same as OBR-50 - parent universal service identifier. If both fields are valued, they must contain the same value.

CWE data type components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

2.8.2 Observation Request Segment (OBR)

The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. The OBR defines the attributes of a particular request for diagnostic services or clinical observations. For laboratory-based reporting, the OBR defines the attributes of the original request for laboratory testing. Essentially, the OBR describes a battery or panel of tests that is being requested or reported. The OBR is somewhat analogous to a generic laboratory slip that is filled out when a physician requests a laboratory test. The individual test names and results for the panel of tests performed are reported in OBX segments, which are described below. As defined by the ORU syntax, there can be many OBXs per OBR, and there can be many OBRs per PID.

OBR Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			00237	Set ID - OBR		R	[1..1]
2	22	EI	C			00216	Placer Order Number		RE	[0..1]
3	22	EI	C			00217	Filler Order Number[1]	7090	R	[1..1]
4	250	CE	R			00238	Universal Service ID	7480	R	[1..1]
5	2	ID	B			00239	Priority		X	[0..0]
6	26	TS	B			00240	Requested Date/Time		X	[0..0]
7	26	TS	C			00241	Observation	7320	R	[1..1]

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
							Date/Time[2]			
8	26	TS	O			00242	Observation End Date/Time[2]		X	[0..0]
9	20	CQ	O			00243	Collection Volume[3]		X	[0..0]
10	250	XCN	O	Y		00244	Collector Identifier[3]	2480	RE	[0..4]
11	1	ID	O		0065	00245	Specimen Action Code[§]		X	[0..0]
12	250	CE	O			00246	Danger Code		X	[0..0]
13	300	ST	O			00247	Relevant Clinical Info.		X	[0..0]
14	26	TS	B			00248	Specimen Received Date/Time[3]		RE	[0..1]
15	300	SPS	B		0070	00249	Specimen Source[3]		RE	[0..1]
16	250	XCN	O	Y		00226	Ordering Provider	7100, 7110, 7120, and 7130	C	[0..4]
17	250	XTN	O	Y		00250	Order Callback Phone Number	7180	RE	[0..4]
18	60	ST	O			00251	Placer Field 1		X	[0..0]
19	60	ST	O			00252	Placer Field 2		X	[0..0]
20	60	ST	O			00253	Filler Field 1[1]		X	[0..0]
21	60	ST	O			00254	Filler Field 2[1]	7070	RE	[0..1]
22	26	TS	C			00255	Results Rpt/Status Chng-Date/Time[1]	7530	RE	[0..1]
23	40	MOC	O			00256	Charge to Practice[1]		X	[0..0]
24	10	ID	O		0074	00257	Diagnostic Serv Sect ID		X	[0..0]
25	1	ID	C		0123	00258	Result Status[1]	7330	R	[1..1]
26	400	PRL	O			00259	Parent Result[1]		CE	[0..1]
27	200	TQ	B	Y		00221	Quantity/Timing		X	[0..0]
28	250	XCN	O	Y		00260	Result Copies To		X	[0..0]
29	200	EIP	O			00261	Parent[3]		CE	[0..1]
30	20	ID	O		0124	00262	Transportation Mode		X	[0..0]
31	250	CE	O	Y		00263	Reason for Study		RE	[0..20]
32	200	NDL	O			00264	Principal Result Interpreter[1]	7260, 7270, 7280, 7290, 7300, 7310	RE	[0..1]
33	200	NDL	O	Y		00265	Assistant Result Interpreter[1]		X	[0..0]
34	200	NDL	O	Y		00266	Technician[1]		X	[0..0]
35	200	NDL	O	Y		00267	Transcriptionist[1]		X	[0..0]
36	26	TS	O			00268	Scheduled Date/ Time[1]		X	[0..0]
37	4	NM	O			01028	Number of Sample Containers[3]		X	[0..0]
38	250	CE	O	Y		01029	Transport Logistics of Collected Sample[3]		X	[0..0]
39	250	CE	O	Y		01030	Collector's Comment[3]		X	[0..0]

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
40	250	CE	O			01031	Transport Arrangement Responsibility		X	[0..0]
41	30	ID	O		0224	01032	Transport Arranged		X	[0..0]
42	1	ID	O		0225	01033	Escort Required		X	[0..0]
43	250	CE	O	Y		01034	Planned Patient Transport Comment		X	[0..0]
44	250	CWE	O		0088	00393	Procedure Code		CE	[0..1]
45	250	CE	O	Y	0340	01316	Procedure Code Modifier		X	[0..0]
46	250	CE	O	Y	0411	01474	Placer Supplemental Service Information		X	[0..0]
47	250	CE	O	Y	0411	01475	Filler Supplemental Service Information		X	[0..0]
48	250	CWE	C		0476	01646	Medically Necessary Duplicate Procedure Reason.		X	[0..0]
49	2	IS	O		0507	01647	Result Handling		RE	[0..1]
50	250	CWE	O			02286	Parent Universal Service Identifier		CE	[0..1]

[1] These items are known to the filler, not the placer. They are valued by the filler as needed when the OBR segment is returned as part of a report.

[2] *OBR-7-observation date/time* and *OBR-8-observation end date/time* are the physiologically relevant times. In the case of an observation on a specimen, they represent the start and end of the specimen collection. In the case of an observation obtained directly from a subject (e.g., BP, Chest X-ray), they represent the start and end time of the observation.

[3] These fields are only relevant when an observation is associated with a specimen. These are completed by the placer when the placer obtains the specimen. They are completed by the filler when the filler obtains the specimen.

Example:

```
OBR|1||97810430|11529-5^SURGICAL PATH REPORT^LN^^PATHOLOGY REPORT^L|||20030922|||||||||
164341^ONCOLOGIST^HANNAH^^^DR|||||||||F|||||||109772&PATHOLOGIST&QUINCY<CR>
```

This segment shows that a Surgical Pathology report identified by 97810430 was conducted on September 22, 2003. Dr. Hannah Oncologist ordered the report and the pathologist who read the report was Quincy Pathologist. The "F" in OBR-25 indicates that this is a final result.

OBR Field Definitions

For electronic laboratory purposes, the placer and filler are defined as follows:

The placer is the person or service that requests (places order for) an observation battery (e.g., the physician, the practice, clinic, or ward service, that orders a laboratory test, X-ray, vital signs, etc.). The meaning is synonymous with, and used interchangeably with, "requestor." See *ORC-2-placer order number*, "Placer order number."

The filler is the person or service that produces the observations (fills the order) requested by the requestor. The word is synonymous with "producer" and includes diagnostic and clinical services and care providers who report observations about their patients. The clinical laboratory is a producer of laboratory test results (filler of a laboratory order), the nursing service is the producer of vital signs observations (the filler of orders to measure vital signs), and so on.

OBR-1 Set ID - OBR (SI-4, Required) 00237

Definition: This field identifies the sequence number of one of multiple OBRs under one PID. For the first order transmitted, the sequence number shall be 1; for the second order, it shall be 2; and so on. For example, the second OBR under a single PID would appear as:

```
|2|
```

OBR-2 Placer order number (EI-22, Required or Empty) 00216

Definition: This field identifies an order number uniquely among all orders from a particular ordering application. This field should not contain the accession number for a specimen. The first component is a string that identifies an individual order. A limit of fifteen (15) characters is suggested but not required. It is assigned by the placer (ordering application). The second through fourth components contain the application ID of the placing application in the same form as the HD data type.

EI data type components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

In the example, this field is not valued. The placer order number should be sent with the result if the laboratory has it. If the value is known to the laboratory, then this field should be valued.

OBR-3 Filler order number (EI-22, Required) 00217)

Definition: This field is the order number associated with the filling application. It is assigned by the order filler (receiving) application. This string must uniquely identify the order (as specified in the order detail segment) from other orders in a particular filling application (e.g., clinical laboratory). This uniqueness must persist over time. For laboratory-based reporting, this field will be used to report the pathology report number sometimes referred to as the laboratory specimen accession number. This is the unique identifier that the laboratory uses to track the specimen, and the report record of the examination of the specimen. It is often referred to as the 'Accession Number' which is assigned by the laboratory on receipt of the specimen(s).

The registry consolidates multiple reports for a case, such as when a reference lab or consult report is sent, which may carry a different Accession Number and/or Laboratory ID. When multiple reports from multiple facilities are included in a single HL7 message, as components of the Pathology Report Collection, the Filler Order Number (and Laboratory ID) that is identified in the OBR containing the LOINC code for the collection (60567-5 Comprehensive pathology report panel) should be used to identify the overall case.

EI data type components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

Example:

```
|97 810430|
```

In the above example 97810430 is the number assigned by the pathology laboratory for the surgical specimen. In multi-specimen cases, this number refers to the entire Pathology Study case, with all its specimens.

The second through fourth components are optional. Components 2 and 3 may be used to record multiple laboratories in situations when the testing laboratory is different than the sending laboratory, but NAACCR recommends using OBX-15 Producer's Reference for this purpose.

Note for cancer registries: Corresponds to NAACCR item Path Report Number [7090]. The combination of laboratory ID and filler order number will uniquely identify a case. If a filler order number may recycle with a single year period, a month identifier (01 through 12) should be prepended to it. Note that each laboratory generally creates their own Accession Number, so for parts of the report which contain results from other laboratories (reference send-outs), the Accession Numbers will be different. When a report from a reference laboratory is included as a supplemental report in the Pathology Report Collection, the Pathology Report Number

is the Accession Number of the laboratory sending the collection. If the reference laboratory sends its report directly to the Registry, the burden is on the Registry to link the reference report to the rest of the reports on the case; at this time there is no standardized solution to this issue.

OBR-4 Universal service ID (CE-250, Required) 00238

Definition: This field is the identifier code for the ordered observation/test/battery (not the test performed).

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

An example valuing all of the CE data type components for a surgical pathology report would appear as:

```
|11529-5^SURGICAL PATH REPORT^LN^1000^PATHOLOGY REPORT^L|
```

An example valuing all of the CE data type components for a cytology report would appear as:

```
|33716-2^Study Report: Cytology.non-gyn^LN^1100^CYTOLOGY REPORT^L|
```

An example valuing all of the CE data type components for an immunophenotype report would appear as:

```
|55230-7^Study Report: Immunophenotyping^LN^1200^IMMUNOPHENOTYPE REPORT^L|
```

No coding recommendation for laboratory-based reporting has been made for OBR-4 because the field describes the originally requested order (e.g., a hepatitis panel or antimicrobial susceptibility testing battery). The value of OBR-4 will be continued from the original order, because this is a required field, but the information in OBR-4 will not be used routinely. The "informative field" for laboratory-based reporting is OBX-3 which, should be used to provide an unambiguous, specific test name and OBX-5 should provide the result to the test.

An example of the universal service identifier for a report of a hematology panel would appear as:

```
|^^^10002^Complete Blood Count^L|
```

Here, the code is a user-defined "local" code, as indicated by the <L> in the sixth subcomponent. Note that the "Universal Service ID" is a code that often represents the battery or collection of tests that make up a routine laboratory panel. The individual results of the different components of the CBC are reported in the OBX segments described below. For most laboratory tests that are reportable to public health officials, the description of the test and result is sufficiently given in OBX and does not need repetition here. Information in OBR-4 will not be used routinely in public health reporting.

Note for cancer registries: Corresponds to NAACCR data item Path--Report Type [7480]. See Section 1.4.3 for all report types and styles.

Typical values used in Cancer Reporting for this are shown in the following table:

NAACCR		LOINC	
Codes	**Description**	**Codes**	**Description**
01	Pathology	11529-5	Surgical Pathology Study Report
01	Pathology	60570-9	Consultation note
01	Pathology	35265-8	Path Report.addendum
01	Pathology	60571-7	Consultation note.synoptic
01	Pathology	60569-1	Report addendum.synoptic
01	Pathology	60567-5	Comprehensive pathology report panel
01	Pathology	60568-3	Synoptic report
02	Cytology	33716-2	Study Report: Cytology.non-gyn
03	Gyn Cytology	33717-0	Study Report: Cytology.Cvx/Vag
04	Bone Marrow (biopsy/aspirate)	48807-2	Bone marrow aspiration report
05	Autopsy	18743-5	Autopsy note
06	Clinical Laboratory Blood Work, NOS	various	
07	Tumor Marker (p53, CD's Ki, CEA, Her2/Neu, etc.)	various	
08	Cytogenetics	55228-1	Study Report; Cytogenetics
09	Immunohistochemical Stains	55229-9	Study Report; Immune Stains
10	Molecular Studies	26435-8	Molecular pathology studies
11	Flow Cytometry, Immunophenotype	33719-6 55230-7	Study Report FC Immunophenotype
98	Other	NA	NA
99	Unknown	NA	NA

OBR-5 Priority - OBR (ID-2, Not Supported) 00239

OBR-6 Requested date/time (TS-26, Not Supported) 00240

OBR-7 Observation date/time (TS-26, Required) 00241

Definition: This field is the clinically relevant date/time of the observation. In the case of observations taken directly from a subject, it is the actual date and time the observation was obtained. In the case of a specimen-associated study, this field shall represent the date and time the specimen was collected or obtained. (This is a results-only field except when the placer or a third party has already drawn the specimen.) This field is conditionally required. When the OBR is transmitted as part of a report message, the field must be filled in. If it is transmitted as part of a request and a sample has been sent along as part of the request, this field must be filled in because this specimen time is the physiologically relevant date-time of the observation.

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

For example:

```
|200011270930|
```

Note for cancer registries: Corresponds to NAACCR item Path--Date Spec Collection [7320].

OBR-8 Observation end date/time (TS-26, Not Supported) 00242

OBR-9 Collection volume (CQ-20, Not Supported) 00243

OBR-10 Collector identifier (XCN-250, Required or empty, Repeating maximum 4) 00244

Definition: When a specimen is required for the study, this field will identify the person that collected the specimen. Either name or ID code, or both, may be present. This field may be blank.

For example:

```
|EMLOYEEID^PHLEBOTOMIST^PAMELA|
```

(Pamela Phlebotomist is included as having drawn a blood sample.)

Note for cancer registries: When the specimen is collected by the surgeon this field corresponds to NAACCR item Physician—Primary Surgeon [2480].

OBR-11 Specimen action code (ID-1, Not Supported) 00245

OBR-12 Danger code (CE-250, Not Supported) 00246

OBR-13 Relevant clinical information (ST-300, Not Supported) 00247

OBR-14 Specimen received date/time (TS-26, Required or empty) 00248

Definition: For observations requiring a specimen, the specimen received date/time is the actual login time at the diagnostic service. This field must contain a value when the order is accompanied by a specimen, or when the observation required a specimen and the message is a report. For Cancer Reporting, generally surgery will collect the specimen; the date and time on the Pathology Study requisition form that accompanies the specimen is the timestamp filled in here.

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

For example:

```
|200011270930|
```

OBR-15 Specimen source (SPS-300, Required or empty) 00249

Definition: This field identifies the site where the specimen should be obtained or where the service should be performed.

CM data type components:
<specimen source name or code (CE)> ^ <additives (TX)> ^ <free text (TX)> ^ <body site (CE)> ^ <site modifier (CE)> ^ <collection method modifier code (CE)>

Subcomponents of specimen source name or code: <identifier (ST)> & <text (ST)> & <name of coding system (ST)> & <alternate identifier (ST)> & <alternate text (ST)> & <name of alternate coding system (ST)>

Subcomponents of body site: <identifier (ST)> & <text (ST)> & <name of coding system (ST)> & <alternate identifier (ST)> & <alternate text (ST)> & <name of alternate coding system (ST)>

Subcomponents of site modifier: <identifier (ST)> & <text (ST)> & <name of coding system (ST)> & <alternate identifier (ST)> & <alternate text (ST)> & <name of alternate coding system (ST)>

Subcomponents of collection method modifier code: <identifier (ST)> & <text (ST)> & <name of coding system (ST)> & <alternate identifier (ST)> & <alternate text (ST)> & <name of alternate coding system (ST)>

An example using SNOMED CT:

```
|G-8018&Mixed venous blood specimen (specimen&SCT^^^T-D8400&Antecubital
Region&SCT^LACF&Left Antecubital Fossa&HL70163|
```

where <G-8018> is the code, <Mixed venous blood specimen (specimen)> is the text of the code, and SCT is the coding system from which the code and text were drawn.

When the coding system used is drawn from an HL7 table, the third subcomponent, name of coding system, is valued as HL7####. *HL7 Table 0070, Specimen source code* is referenced in this example. Additional description can be given in the "body site" and "site modifier" fields using SNOMED CT or HL7 codes. Here, <24418004 Antecubital fossa vein (body structure)> is the SNOMED CT code for the body site, and <77710008 Left> is the site modifier. The coding system used here is drawn from an HL7 table, so the name of coding system subcomponent is valued as HL7####. *HL7 Table 0163, Administrative Site*, is referenced in this example.

A word about SNOMED codes

SNOMED CT codes are starting to be used in the Cancer community. Historically, the older release of SNOMED, identified with the HL7 Table 0396 value 'SNM', were sent (indicating the 1984 release of SNOMED). These were in the format of one or two alphabetic characters, followed by a hyphen, followed by a numeric code of several digits. Although all of these older codes, sometimes referred to as 'legacy alphanumeric codes' are contained within and supported in SNOMED CT, the preferred code value in the future is the fully numeric SNOMED Concept ID code. Note that some members of the community may use the HL7 Table 0396 value 'SCT2' to explicitly identify the code value as being a legacy alphanumeric code and NOT a numeric Concept ID; while legal, this use is discouraged. The use of the older code 'SNM' to indicate a code from SNOMED is also discouraged in favor of using the current code 'SCT' to indicate that the code is drawn from SNOMED CT (SNOMED Clinical Terms). The use of the code system identifier 'SCT' is legal to identify both the legacy alphanumeric codes and the numeric Concept Identifiers. Note that in the SNOMED CT examples in this Guide, the display text is the Fully Specified Name as published in SNOMED CT; other types of display text are equally valid, as per industry practice, and may vary between jurisdictions. The above example using the SNOMED CT concept identifiers would be:

```
|119298005&Mixed venous blood specimen (specimen&SCT^^^90837009&Antecubital Region
structure (body structure)&SCT^LACF&Left Antecubital Fossa&HL70163|
```

An example of a prostate specimen (right lobe), where the specimen source code is from ICD-O-3 (name of coding system):

```
|C619&Prostate, NOS (C619) Right&ICDO3|
```

An example for lymph nodes using the same coding system:

```
|C773&Lymphoma, axilla or arm-(C773) Right&ICDO3|
```

It is strongly recommended that actual specimen sources be provided in OBR-15 and not surrogate descriptions such as "lavender-top" or "serum-separator tube."

Non-Coded Specimen Sources: If coded text is not available, then the information is provided in the free text field. The first two components would be blank, followed by the free-text specimen source.

OBR-16 Ordering provider (XCN-250, Conditional, Repeating maximum 4) 00226

Definition: This field identifies the provider who ordered the pathology report (e.g., surgeon/physician

who ordered the pathology report). The ID code and the name must be present. The Ordering facility name (ORC-21) or the Ordering provider (OBR-16) must be provided, both fields cannot be blank. Note that both may be valued if both the Ordering Facility and the Ordering Provider are being transmitted.

> XCN data type components: <ID number (ST)> ^ <family name (ST)> & <last name prefix (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (IS)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)> ^ <name representation code (ID)>
>
> Subcomponents of assigning authority: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
>
> Subcomponents of assigning facility ID: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

For example, the NPI number for Dr. Marcus Welby:

|1234567^Welby^M^J^Jr^Dr^^^&2.16.840.1.113883.4.6&ISO^L^^^NPI|

Note on assigning authority: the Namespace ID of the HD datatype for all Assigning Authority fields in XCN and CX data types is drawn from a local table (0300). This is generally an obstacle to interoperability, so NAACCR recommends the use of the Universal ID component instead, which is an OID registered with HL7. The OID for the Medicare/CMS NPI namespace is 2.16.840.1.113883.4.6, and the registered OID for the Medicare/CMS UPIN identifier namespace is 2.16.840.1.113883.4.8.

Note for cancer registries: Corresponds to NAACCR data items Path Ordering Client/Phys--Lic No [7100] or Path Ordering Client/Phys--Lic No NPI [7105], Path Ordering Client/Phys--LName [7110], Path Ordering Client/Phys--FName [7120], and Path Ordering Client/Phys--MName [7130].

OBR-17 Order callback phone number (XTN-250, Required or Empty, Repeating maximum 4) 00250

Definition: This field is the telephone number for reporting a status or a result using the standard format with extension and/or beeper number when applicable.

> XTN data type components: [**N**NN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>

For example:

```
|^WPN^PH^^^206^2770908^^before 5:00 pm~^ASN^PH^^^206^5620767|
```

or

```
|^^^^^^^^^^^(206) 277-0908|
```

Note for cancer registries: Corresponds to NAACCR data item Path Ordering Client/Phys--Phone [7180]. If the value is known, it should be populated in this field.

OBR-18 Placer field 1 (ST-60, Not Supported) 00251

OBR-19 Placer field 2 (ST-60, Not Supported) 00252

OBR-20 Filler field 1 (ST-60, Not Supported) 00253

OBR-21 Filler field 2 (ST-60, Required or empty) 00254

Definition: This field is similar to filler field #1. This field is used for collection of the reporting facility phone number (i.e., the laboratory phone number).

Note for cancer registries: Corresponds to NAACCR data item Path Lab Phone Number [7070].

OBR-22 Results rpt/status change - date/time (TS-26, Required or empty) 00255

Definition: This field specifies the date/time results reported or status changed. This field is used to indicate the date and time that the results are composed into a report and released, or that a status, as defined in *ORC-5-order status*, is entered or changed.

> Time stamp (TS) data type must be in the format:
> YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. The time zone is assumed to be that of the sender.

In the example, this field is not valued.

Note for cancer registries: Corresponds to NAACCR data item Date/Time Results Written as a Report or Report Changed [7530].

OBR-23 Charge to practice (MOC-40, Not Supported) 00256

OBR-24 Diagnostic service sect ID (ID-10, Not Supported) 00257

OBR-25 Result status (ID-1, Required) 00258

Definition: This field is the status of results for this order. Refer to *HL7 Table 0123 - Result status* for valid entries.

> The value of such a field follows the formatting rules for an ST field except that it is drawn from a table of legal values. Examples of ID fields include *MSH-12-Version ID* and *PD1-12-Protection indicator*.

Codes C (corrected) and F (final) are used for reporting to cancer registries. Note that code P (preliminary) is generally not set to cancer registries.

Note for cancer registries: Corresponds to NAACCR item Path--Result Status [7330].

OBR-26 Parent result (PRL-400, Conditional or Empty) 00259

Definition: This field provides linkages to messages describing previously performed tests. This important information, together with the information in *OBR-29-parent* (the identifiers associated with the parent placer and filler), uniquely identifies the OBX segment from the previously performed test that is related to this order (description of OBX segment provided below). The value reported in this OBX segment in the parent result is the organism or chemical species about which this battery reports. For example, if the current battery (as designated in OBR-4) is an antimicrobial susceptibility test, the parent result in OBR-26 contains a result from a previously performed antimicrobial susceptibility test, which identified the organism on which the current susceptibility was run. HL7 specifies here the OBX-5 data will only show the text, or second component of the CE data type used in the previous message. However, for electronic laboratory reporting, all of the CE data type components of field OBX-5 from the previous parent message appear in this field of the present OBR, using subcomponent delimiters. This indirect linkage is preferred because the name of the organism in the parent result may undergo several preliminary values prior to finalization. This is an exception to the HL7 description for this component.

> PRL data type components: <Parent Observation Identifier(CE)> ^ <Parent Observation Sub-identifier(ST)> ^ <Parent Observations Value Descriptor(TX)>

This field may be valued for cases where there are multiple primary cancers, or inclusion of multiple reports on the same cancer of different types (such as Coded Synoptic and Text).

OBR-27 Quantity/timing (TQ-200, Not Supported) 00221

OBR-28 Result copies to (XCN-250, Not Supported) 00260

OBR-29 Parent (EIP-200, Conditional or Empty) 00261

Definition: This field relates a child to its parent when a parent/child relationship exists. The field is optional; however, it is recommended that the field be sent if available for laboratory-based reporting. This field may be sent when a parent result is provided. Reporting of antimicrobial susceptibility data requires that the parent result be populated with the name of the organism for which testing was performed (OBR-26). See OBR-26 for further description. Conditionality predicate: when the report message contains multiple OBR segments for multiple cancers, this field should be populated to link the different reports to the correct cancer. See Appendix D for more details.

EIP data type components: <parent's placer order number (EI)> ^ <parent's filler order number (EI)>

Subcomponents of parent's placer order number: <entity identifier (ST)> & <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (IS)>

Subcomponents of parent's filler order number: <entity identifier (ST)> & < <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (IS)>

Example showing a message fragment with an OBR for the overall case report on two cancers, two OBRs with text reports each one of which is specific to one of the cancers, and two additional OBRs, each one containing a synoptic report for the different cancers. In this example there is a report on bladder and colorectal cancers, with both textual reports and synoptic reports on each, all linked, and in the same message. Note that the numerous OBX segments containing the actual report contents are not shown in this example.

```
OBR|1||58839674|11529-5^SURGICAL PATH REPORT^LN|…||…
OBR|2||58839697|11529-5^SURGICAL PATH REPORT^LN|…||^58839674|…
OBR|3||58839703|11529-5^SURGICAL PATH REPORT^LN|…||^58839674|…
OBR|4||58839775|^^^2567^BLADDER BIOPSY SYNOPTIC PATH REPORT^L|…|^58839697|…
OBR|5||58839775|^^^2567^COLON/RECTUM RESECTION SYNOPTIC PATH REPORT^L|…|^58839703|…
```

For more detailed examples, see Appendix D.

OBR-30 Transportation mode (ID-20, Not Supported) 00262

OBR-31 Reason for study (CE-250, Required or Empty, Repeating maximum 20) 00263

Definition: For public health reporting, ICD-9-CM codes used to support testing and reimbursement should be used here. This field can repeat to accommodate multiple diagnoses. Refer to the website http://www.cdc.gov/nchs/icd9.htm for information on ICD-9-CM codes.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

The field would appear as:

```
OBR|...||197.0^Malignant neoplasm of lung^I9C|...
```

If there is a known value for this field, it should be populated.

OBR-32 Principal result interpreter (NDL-200, Required or Empty) 00264

Definition: This field identifies the physician or other clinician who interpreted the observation and is responsible for the report content.

The NDL datatype transmits the name, date, and location of a person performing a service. Components of this datatype are: <Name (CNN)> ^ <Start Date/time (TS)> ^ <End Date/time (TS)> ^ <Point of Care (IS)> ^ <Room (IS)> ^ <Bed (IS)> ^ <Facility (HD)> ^ <Location Status (IS)> ^ <Patient Location Type (IS)> ^ <Building (IS)> ^ <Floor (IS)>

Subcomponents of Name: <ID number (ST)> & <family name (ST)> & <given name (ST)> & <Second and Further Given Names or Initials Thereof (ST)> & <suffix (e.g., JR. III) (ST)> & <prefix (e.g., DR)> & <degree (e.g., MD) (ST)> & <source table (IS)> & <Assigning Authority – Namespace ID (IS)> & <Assigning Authority – Universal ID (ST)> & <Assigning Authority – Universal ID Type (ID)>

Subcomponents of Facility: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Comment: Use the first and last name of the physician/pathologist who interpreted the observation/result or the UPIN (universal physician identification number or NPI (National Provider Identifier).

In the event the state license number is used record the state abbreviation, if the national provider identifier (NPI) is used record NPI, if the local physician number is used record DN, and if the universal physician identification number (UPIN) is used record UPIN.

Note for cancer registries: Corresponds to NAACCR items: Pathologist Last Name [7260], Pathologist First Name [7270], Pathologist Middle Name [7280], Pathologist Name Suffix [7290], Pathologist Lic Number [7300], Pathologist Lic--State [7310]. Also note that the NAACCR data items numbered 7000 and higher are specifically for use in Pathology Reporting as described in this Guide. Note that the Principal Result Interpreter is required for reporting to cancer registries; this OBR-32 field has been relaxed to 'Required or Empty' because some laboratories include this information in the prose of a text report, and do not populate it separately in this field. This is discouraged; reasonable effort should be made to populate the Principal Result Interpreter in this OBR-32 field to reduce the burden on receiving registries.

An example showing this field with Dr. Quincy Pathologist MD as the Principal Result Interpreter with an NPI of 109772, and recording the times that he actually read the slides, would appear as:

```
OBR|...||109772&PATHOLOGIST&QUINCY&&&DR&&&NPI^201009301000^201009301040|...
```

Alternatively, if the registered OID for the namespace National Provider Identifier is to be used rather than using the local Namespace ID table 0363, the message would appear as:

```
OBR|...||109772&PATHOLOGIST&QUINCY&&&DR&&&&2.16.840.1.113883.4.6&ISO^201009301000^201009301
040|...
```

Note that examples are showing only the population of the OBR-32 field; other fields in the segment are represented by ellipses (. . .).

OBR-33 Assistant result interpreter (NDL-200, Not Supported) 00265

OBR-34 Technician (NDL-200, Not Supported) 00266

OBR-35 Transcriptionist (NDL-200, Not Supported) 00267

OBR-36 Scheduled - date/time (TS-26, Not Supported) 00268

OBR-37 Number of sample containers (NM-4, Not Supported) 01028

OBR-38 Transport logistics of collected sample (CE-250, Not Supported) 01029

OBR-39 Collector's comment (CE-250, Not Supported) 01030

OBR-40 Transport arrangement responsibility (CE-250, Not Supported) 01031

OBR-41 Transport arranged (ID-30, Not Supported) 01032

OBR-42 Escort required (ID-1, Not Supported) 01033

OBR-43 Planned patient transport comment (CE-250, Not Supported) 01034

OBR-44 Procedure code (CWE-250, Conditional or Empty) 00393

Definition: This field contains a unique identifier assigned to the procedure, if any, associated with the Universal Service ID reported in field 4. ***This field has been changed to a CWE data type (from a CE in the HL7 standard) for compatibility with clinical and ancillary systems that need to report the procedure in this field (rather than in an OBX) but need to send it as the Original Text component of the datatype.*** This field will usually contain the CPT codes or SNOMED CT codes associated with the procedure. The CPT codes for the procedure may be available in other HL7 messages and are a licensed product of the American Medical Association. The SNOMED CT codes are available for use in the United States from the National Library of Medicine's Unified Medical Language System (UMLS), and in Canada from Canada Health Infoway Standards Collaborative. See *User-defined Table 0088* for procedure code examples. This is generally the procedure that was used to harvest the specimen. Conditionality predicate: if the procedure code is not identified in the OBX, and it is coded, it should be populated here.

Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)> ^ <coding system version ID (ST)> ^ alternate coding system version ID (ST)> ^ <original text (ST) >

OBR-45 Procedure code modifier (CE-250, Not Supported) 01316

OBR-46 Placer Supplemental Service Information (CE-250, Not Supported) 01474

OBR-47 Filler Supplemental Service Information (CE-250, Not Supported) 01475

OBR-48 Medically Necessary Duplicate Procedure Reason (CWE-250, Not Supported) 01646

OBR-49 Result Handling (IS-2, Required or Empty) 01647

Definition: Transmits information regarding the handling of the result. For example, an order may specify that the result (e.g., an x-ray film) should be given to the patient for return to the requestor. Refer to *User-defined Table 0507 Observation Result Handling* for suggested values. If this field is not populated then routine handling is implied.

OBR-50 Parent Universal Service Identifier (CWE-250, Conditional or Empty) 02286

Definition: This field contains the universal service identifier code for the parent order, as identified in ORC-8 Parent and/or OBR-29 Parent (if present), which caused this observation/test/battery to be performed. This can be based on local and/or "universal" codes. HL7 recommends the "universal" service identifier."

Note that ORC-8 Parent and/or OBR-29 Parent, does not have to be present for OBR-50 to be used. However, absence of ORC-8 Parent and/or OBR-29 Parent introduces potential ambiguity of the actual order being referenced.

Note that ORC-8 Parent and OBR-29 Parent identify an individual parent order (e.g., OBR) for ORC-31 Parent

Universal Service Identifier and OBR-50 Parent Universal Service Identifier.

ORC-31 - parent universal service identifier is the same as OBR-50 - parent universal service identifier. If both fields are valued, they must contain the same value.

Note that OBR-50 will be deprecated in V2.7 to enable message developers to start to adjust and be prepared for supporting the intended 1:1 relationship between Placer/Filler Order Number and Universal Service Identifier.

2.8.3 Observation/Result (OBX) Segment

The OBX segment is used to transmit a single observation or observation fragment. It represents the smallest indivisible unit of a report. Its principal mission is to carry information about observations in report messages. While OBR gives general information about the order for the test and ORC gives information on all services that are requested, the OBX segment gives the specific, individual tests performed (OBX-3) and the specific results for each test (OBX-5). Laboratory-based reporting to cancer registries focuses on OBX-3 and OBX-5 as the most informative elements of the message; thus, every effort should be made to make OBX-3 and OBX-5 as complete and unambiguous as possible.

The OBX segment is used in two different locations in the ORU_R01 message defined in this Guide: immediately following the OBR segment, and immediately following the SPM segment. The first location, where a repeating set of OBX segments follows the OBR is intended to carry information about the overall case being reported. The second location in the message, where a repeating set of OBX segments is associated with an SPM (specimen) segment is intended to carry information that is specific to a particular specimen. Note that if the SPM segment is not used in an implementation, all observation information may be carried in the repeating set of OBX segments following the OBR.

For the structure of the message and OBX usage for particularly complex reports, such as those involving multiple cancers and multiple specimens, please refer to Appendix D.

OBX Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			00569	Set ID - OBX		R	[1..1]
2	3	ID	C		0125	00570	Value type		R	[1..1]
3	250	CE	R			00571	Observation identifier[1]		R	[1..1]
4	20	ST	C			00572	Observation sub-ID		RE	[0..1]
5	65536[3]	[2]	C	Y[4]		00573	Observation value[1]	7400, 7410, 7420, 7430, 7440, 7450, 7460, 7470, 2600, 7080, 7340, 7350, 7360, 7370, 7380, 7390	R	[1..12]
6	250	CE	O			00574	Units	7540	RE	[0..1]
7	60	ST	O			00575	Reference ranges		RE	[0..1]
8	5	IS	O	Y	0078	00576	Abnormal flags		RE	[0..5]
9	5	NM	O			00577	Probability		X	[0..1]
10	2	ID	O	Y	0080	00578	Nature of abnormal test		RE	[0..5]

11	1	ID	R		0085	00579	Observation result status	7330	R	[1..1]
12	26	TS	O			00580	Effective Date of Reference Range Values		X	[0..0]
13	20	ST	O			00581	User defined access checks		X	[0..0]
14	26	TS	O			00582	Date/time of the Observation		RE	[0..1]
15	250	CE	O			00583	Producer's Reference		CE	[1..1]
16	250	XCN	O	Y		00584	Responsible observer		RE	[0..5]
17	250	CE	O	Y		00936	Observation method		RE	[0..6]
18	22	EI	O			01479	Equipment Instance Identifier		X	[0..1]
19	26	TS	O			01480	Date/Time of the Analysis		CE	[0..1]
20							Reserved for harmonization with V2.6		X	[0..0]
21							Reserved for harmonization with V2.6		X	[0..0]
22							Reserved for harmonization with V2.6		X	[0..0]
23	567	XON	O	N		02283	Performing Organization Name		RE	[0..1]
24	631	XAD	O	N		02284	Performing Organization Address		CE	[0..1]
25	3002	XCN	O	N		02285	Performing Organization Medical Director		X	[0..0]

[1] For laboratory-based reporting, LOINC is strongly recommended for OBX-3, and SNOMED CT is strongly recommended for OBX-5 when results are coded and CE data types are used.
[2] The data type for OBX-5 can vary and is determined by OBX-2.
[3] The length of the observation value field is variable, depending upon value type. See *OBX-2-value type*.
[4] May repeat for multipart, single answer results with appropriate data types (e.g., CE, TX, and FT data types).

Examples:

For cancer reporting using text value type results:

```
OBX|1|TX|22627-3^FINAL DIAGNOSIS^LN^^DIAGNOSIS^L|1|LEFT INGUINAL LYMPH NODE - GRANULOMATOUS
LYMPHADENITIS||||||F<CR>
```

For patient age and employment:

```
OBR|2|||^ Additional Patient Demographics|...<CR>
OBX|1|NM|21612-7^reported patient age^LN||47|yr^year^ANSI+|...<CR>
OBX|2|TX|11294-6^Current employment^LN||laboratory technician|...<CR>
```

OBX Field Definitions

OBX-1 Set ID - observation simple (SI-4, Required) 00569

Definition: This field contains the sequence number. There can be many OBXs per OBR. The set ID allows the receiver to maintain the relational aspects of the message.

> SI data type is a non-negative integer in the form of an NM field. The uses of this data type are defined in the chapters defining the segments and messages in which it is used.

For example:

```
|1|
```

This field can be used to track a number of results within one test panel.

OBX-2 Value type (ID-3, Required) 00570

Definition: This field contains the data type that defines the format of the observation value in OBX-5. An explanation of possible data types is given in Appendix B.

> The value of an ID data type follows the formatting rules for an ST data type except that it is drawn from a table of HL7 legal values.

This field contains the data type of the observation value reported in OBX-5. For instance, if the value in OBX-2 is "CE," then the result reported in OBX-5 must be a coded element. When the value type is TX or FT, then the results in OBX-5 are bulk text. The choices allowed for the value type of an observation are listed in *HL7 Table 0125 - Value type*. All HL7 data types are valid in this field except CM, CQ, SI, and ID. TX should not be used except to send large amounts of text. ST should be used to send short, and possibly encodable, text strings. For laboratory-based reporting, the CE, CWE, NM, and SN data types should be used whenever possible so that results can be interpreted easily.

When no standard format for the reported result is available, it is recommended to use (see OBX-5 for additional explanation):

1) CE with subsequent NTE for non-standard coded results where the result is a predefined text block.
2) TX for results that are truly free text.

Observations that are usually reported as numbers will sometimes have the string (ST) data type because non-numeric characters are often reported as part of the result (e.g., "<0.06") to indicate the result was lower than detected by the present mechanism. In the example, "<0.06," "<" is a text symbol and the digit, "0.06" is considered a numeric value. However, this usage of the ST type should be discouraged because the SN (structured numeric) data type now accommodates such reporting. The SN data type is described under OBX-5 below.

OBX-3 Observation identifier (CE-250, Required) 00571

Definition: This field contains a unique identifier for the observation and is often referred to as the question code. It identifies what is being reported in OBX-5 which is often referred to as the answer code. Examples of OBX-3 include the name of the specific test or observation method, or the name of the component part of the pathology report. For pathology reporting, OBX-3 uses a CE data type construct.

> The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
> <identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
> <alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>
>
> CE data type components are defined as follows:
> (1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.

(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

As noted in the below table: typically, anatomical pathology reports, cytology reports and hematology are in a narrative style format and the information is contained within different sections or heading. This field contains the LOINC codes, which must be used when transmitting text-based information, for the text-based NAACCR data items. In addition to the below text-based LOINC codes a pathology report may contain additional coded data elements and text-based information. Possible coded data elements include ICD-9-CM, CPT, ICD-O-3 and SNOMED CT information (see OBX-5). Typically, in the United States and Canada, the convention is to use LOINC codes as the question code (OBX-3). The codes in this table are components of the NAACCR Volume II reporting panel, and are used primarily for labeling the sections of narrative reports; although some may be used in synoptic reports under certain circumstances (see section 1.4.4 above). These are only used when a section is separate from the set of OBX segments holding the synoptic report structured data.

NAACCR Item Name	NAACCR Item #	LOINC Code	LOINC Code Name
Path--Final Diagnosis	7450	22637-3	Path report.final diagnosis
Path--Text Diagnosis	7400	33746-9	Pathologic findings
Path--Clinical History	7410	22636-5	Path report.relevant Hx
Path--Nature of Specimen	7420	22633-2	Path report.site of origin
Path--Gross Pathology	7430	22634-0	Path report.gross description
Path--Micro Pathology	7440	22635-7	Path report.microscopic observation
Path--Comment Section	7460	22638-1	Path report.comments
Path--Suppl Reports	7470	22639-9	Path report.supplemental reports

In addition to the above elements, pathology, hematology, and cytology reports may contain additional test or report results such as Complete Blood Count, Flow Cytometry, Estrogen Receptor Assay (ERA), Progesterone Receptor Assay (PRA), and Fluorescence *in situ* Hybridization (FISH). If these additional test results are available as discrete data elements they should be include in the message with the appropriate LOINC test code and name in OBX-3. The associated value (or text-finding) and test reference ranges, if appropriate, should be included in OBX-5. The LOINC codes for additional related laboratory tests can be found at no cost at the LOINC web-site: http://www.loinc.org. The entire terminology may be downloaded for local use, or it may be searched at that location. For example, a report which is encoded might use LOINC codes such as 59847-4 Histology and Behavior ICD-O-3 or 59848-2 Morphology.ICD-O-3 to indicate such an ICD-O-3 code in the report.

The first component of OBX-3 is the LOINC code for a data element (text-based or coded) which will be transmitted. The second component is the name of the data element (text-based or coded) as it appears in the LOINC coding system. The third component is a code representing the name of the coding system that has the table where the codes and names of the data elements (text-based or coded) can be found (e.g., LN is the code for LOINC). Coding systems other than LOINC, such as SNOMED CT or CPT can be used for OBR-4. The codes for identifying coding systems are found in the HL7 standard documentation (http://www.hl7.org). Codes anticipated for use in public health and cancer registration reporting are shown in *User Table 0396*.

LOINC is a collection of tables that provide sets of universal names and ID codes for identifying laboratory and clinical test results. The LOINC codes are not intended to transmit all possible information about a test. They are only intended to *identify* the test result. The level of detail in the LOINC definitions was intended to distinguish tests that are usually distinguished as separate test results within the master file of existing laboratory systems. For laboratory-based reporting of public health information, a subset of LOINC codes has been selected and will be made available at the CDC website. General information about LOINC codes can be found at: http://www.regenstrief.org.

Below are examples of LOINC codes used to identify sections of a pathology report, such as nature of specimen and final diagnosis.

```
OBX|2|ST|22633-2^nature of specimen^LN|1|left breast biopsy…<CR>

OBX|1|TX|22637-3^Path report final diagnosis^LN||Malignant lymphoma, small B-cell type with
  plasmacytic differentiation and crystal-storing histiocytosis|…<CR>
```

Where <22633-2> is the identifier from the LOINC table for nature of specimen, <nature of specimen> is the text name as it appears in the table, <LN> is the name of the coding system, <1> specifies that it is the first specimen, and <left breast biopsy> identifies the specimen.

```
OBX|9|TX|22637-3^final diagnosis^LN||1. Infiltrating duct carcinoma, left breast…<CR>
```

Where <22637-3> is the identifier from the LOINC table for the final diagnosis, <final diagnosis> is the text name as it appears in the table, <LN> is the name of the coding system, and <1. Infiltrating duct carcinoma, left breast> is the final diagnosis for the first specimen.

For cancer reporting, patient age is sometimes needed when the birth date may not be available. The PID segment in HL7 Version 2.5.1 has only a field for date of birth, not for patient age. Many applications compute patient age based on birth date. In the absence of birth date, patient age may be recorded within an ORU message in an additional OBR/OBX combination of segments. The suggested data type for patient age is NM, which is recorded in OBX-2. The LOINC code for age is represented in OBX-3 and actual age is represented in OBX-5. Patient age can be 'reported age' at the time of diagnosis (LOINC code 21612-7) or 'estimated age' (LOINC code 21611-9). For situations where birth date is unknown, age may be estimated by a third party on the basis of physical evidence.

A similar method may be used to record employment information that is not otherwise available in an ORU message. Several different LOINC codes identifying History of Occupation, Usual Occupation, Current Employment, Age at Diagnosis, Industry etc., are available. The appropriate LOINC code should be represented when sending patient employment information.

OBX-4 Observation sub-ID (ST-20, Required or Empty) 00572

Definition: This field is used to distinguish between multiple OBX segments with the same observation ID organized under one OBR. For example, a blood culture may have three different organisms growing or a chest X-ray report might include three separate diagnostic impressions. The standard requires three OBX segments, one for each impression. By recording 1 in the Sub-ID of the first of these OBX segments, 2 in the second, and 3 in the third, each OBX segment can be uniquely identified for editing or replacement. The sub-identifier can be further extended by adding decimals (e.g., 2.1, 2.2). It is strongly recommended that numeric values be used for laboratory-based reporting so that receiving applications can maintain easily the relational quality of the data.

The sub-identifier is also used to group related components in reports such as surgical pathology. It is traditional for surgical pathology reports to include all the tissues taken from one surgical procedure in one report. Consider, for example, a single surgical pathology report that describes the examination of gallbladder and appendix tissue. This report would be transmitted roughly as shown below.

Example of sub-identifier usage:

```
OBR|1|||88304&Surg Path Report...<CR>
OBX|1|CE|88304&ANT|1|T57000^GallBladder^SCT...<CR>
OBX|2|TX|88304&GDT|1|This is a normal gallbladder...<CR>
OBX|3|TX|88304&MDT|1|Microscopic exam shows histologically normal gallbladder...<CR>
OBX|4|CE|88304&IMP|1|M-00100^NML^SCT...<CR>
OBX|5|CE|88304&ANT|2|T66000^Appendix^SCT...<CR>
OBX|6|TX|88304&GDT|2|This is a red, inflamed, swollen, boggy appendix...<CR>
OBX|7|TX|88304&MDT|2|Infiltration with many PMN's – Indicating inflammatory change...<CR>
OBX|8|CE|88304&IMP|2|M-40000^InflammationNOS^SCT...<CR>
```

The example above has two segments for each component of the report, one for each of the two tissues, the gall bladder, and the appendix. Thus, there are two |88304&ANT| segments, there are two |88304&GDT| segments, and there are two |88304&MDT| segments. Segments that apply to the gallbladder all have the sub-identifier 1. Segments that apply to the appendix all have sub-identifier 2. The use of the sub ID to distinguish repeating OBXs for the same observation ID is really a special case of using the sub ID to group related subdivisions of information within the overall observation category. Its use must be carefully structured to avoid introducing ambiguities.

When this value is used, particularly in multi-specimen cases, this value must be populated.

OBX-5 Observation value ([11]*Data type varies, User-assigned, Required, Repeating maximum 12) 00573

Definition: The results of the test appear here. For cancer registry reporting, the text of the pathology report (e.g., nature of specimen, gross pathology, final diagnosis, etc.) will be recorded in this segment. OBX-3 is typically referred to as the question code while OBX-5 is referred to as the answer code. If multiple results or different sections of the pathology report are being reported for a case, it is recommended that they be entered in separate OBX segments. (See Appendix D for an example of a pathology report with multiple OBX segments.)

The below table is a list of the NAACCR data item names and numbers of information that could be included in OBX-5.

NAACCR Item Name	NAACCR Item Number
Path--Final Diagnosis	7450
Path--Text Diagnosis	7400
Path--Clinical History	7410
Path--Nature of Specimen	7420
Path--Gross Pathology	7430
Path--Micro Pathology	7440
Path--Comment Section	7460
Path--Suppl Reports	7470
Path--SNOMED CT Code(s)	7340
Path--SNOMED CT Version	7350
Path--ICD-CM codes	7360
Path--ICD Version Number[1]	7370
Path--CPT codes	7380
Path--CPT Code Version[1]	7390
Text--Staging	2600
Patient Age at Specimen	7080

Below are some examples of segments for the transmission of text pathology report data.

```
OBX|1|TX|22637-3^Path report.final diagnosis^LN||Malignant lymphoma, small B-cell type with
  plasmacytic differentiation and crystal-storing histiocytosis|...<CR>

OBX|1|TX|22636-5^Path report.relevant Hx^LN|| The patient was a 58 year-old woman who had
  inflammatory ductal carcinoma of the left breast diagnosed on a core biopsy in January
  2007. An axillary lymph node was positive for metastatic disease on a concurrent FNA. The
  tumor was found to be ER-positive, PR-negative, and Her2-Neu weakly positive. Workup for
  further metastatic disease found multiple lesions in the liver and spine as well as a 5
  cm mass in the upper pole of the left kidney. She received neoadjuvant chemotherapy and
  then underwent a modified radical mastectomy in September 2005 that found extensive
  primary tumor as well as metastases in 14 of 14 axillary lymph nodes.|...<CR>
```

For laboratory-based reporting, SNOMED CT is strongly recommended for OBX-5 whenever the CE (coded element) data type is indicated in OBX-2. If CE appears in OBX-2, it is assumed that OBX-3 uses a LOINC code and the result in OBX-5 is coded using SNOMED CT. OBX-5.3 and OBX-5.6 indicates the appropriate SNOMED CT coding system: concept or legacy. In addition to SNOMED CT codes, a CE data element could also contain ICD-9-CM or CPT codes. A table of the coding systems is noted in Table 0396. When numeric results are sent in OBX-5, the SN or NM data type is preferred for OBX-2, and thus, SNOMED CT is not required. OBX-5 may have either the SNOMED CT code for "positive" or the SNOMED CT-specific names of organisms identified in the tests described in OBX-3. It is strongly recommended that the SNOMED CT code be used for the modifiers "positive," "negative," and "indeterminate." Other modifiers should be avoided such as "limited findings," "insufficient specimen," "patient not at bedside," or "see technician." Further information on SNOMED CT can be found at the SNOMED CT website at http://www.snomed.org.

An example for a SNOMED CT coded final diagnosis:

```
OBX|1|CE|22637-3^path report final diagnosis^LN||82711006^Infiltrating duct
  carcinoma^SCT^M-85003^infiltrating duct carcinoma^SCT2[4]|…<CR>
```

An example for malignant melanoma as final diagnosis, and has an ICD-9-CM Disease Code in OBX-5:

```
     OBX|1|CE|22637-3^Path report.final diagnosis^LN||172.3^Malignant
       melanoma other and unspecified parts of face^I9CDX|…<CR>
```

An example for the transmission of CPT-4 coded elements:

```
OBX|1|CE|49560-6^Payment procedure ^LN||85097^Bone marrow biopsy^C4|…<CR>
```

An example with the transmission of an ICD-9-CM Procedure Code:

```
OBX|1|CE|49560-6^Payment procedure^LN||32.5^Complete pneumonectomy^I9CP|…<CR>
```

An example for the transmission of an ICD-O-3 coded element for histology:

```
OBX|2|CE|31205-8^Histology ICD-O-3^LN||M-98613^Acute myeloid leukemia NOS
^ICDO3|…<CR>
```

An example for the transmission of an ICD-O-3 coded element for a tumor site:

```
OBX|11|CE|22035-0^Primary site Cancer^LN||C11.3^Anterior wall of nasopharynx
^ICDO3|…<CR>
```

An example of a CWE data type for primary site with the version of the SNOMED CT code system noted in the OBX-5.7:

```
OBX|1|CWE|21855-2^Primary Site^LN||76752008^breast^SCT^T-04000
^breast^SCT2^January 2007^^|…<CR>

OBX|14|CWE|405979002^Breast-Pathologic Staging (pTNM)^SCT
||373204007^pT1b: Tumor more than 0.5 cm but not more than 1.0 cm in greatest
  dimension^SCT^^^^July 2007||||||F<CR>
```

4 Although either the SNOMED CT Concept Identifier (all numeric) or the alphanumeric 'legacy code' may be used as the code for the code system identified by 'SCT' from HL7 Table 0396, it is also permitted to use the mnemonic 'SCT2' to indicate explicitly that the code is a SNOMED CT alphanumeric legacy code, and not a concept identifier.

In addition to the above noted CE data items OBX could contain information typically transmitted in the cancer abstract report (see NAACCR Standards Volume II) e.g., ICD-O topography or histology, laterality. In some situations, electronic cancer pathology reports are transmitted from the hospital pathology laboratory to the hospital cancer registry where additional cancer registry data items are coded. The enhanced electronic pathology report is then sent to the central cancer registry. In these situations, the corresponding LOINC code for the respective NAACCR data item should be sent in OBX-3 and the coded element or text should be transmitted in OBX-5. For the CE data types, the coding system should be a combination of the following: 'NAACCR" (to indicate NAACCR cancer registry item number codes) concatenated with the corresponding NAACCR data item number (using 4 digits). Below is an example of the transmission of NAACCR data item "Laterality" which is NAACCR data item number 410.

```
OBX|1|CE|20228-3^Laterality^LN||2^Left:origin of primary^NAACCR0410|...<CR>
```

An example of a complete OBX segment coded for reported age of the patient at the time of diagnosis would appear as:

```
OBX|1|NM|21612-7^Age Patient Qn Reported^LN||47|yr^year^ANSI+|…<CR>
```

Similarly, a complete OBX segment for patient employment would appear as:

```
OBX|2|TX|11294-6^Current employment^LN||coal miner||||||F<CR>
```

An example for malignant melanoma as final diagnosis, and has an ICD9-CM in OBX-5:

```
OBX|1|CE|22637-3^Path report.final diagnosis^LN||172.3^Malignant
 melanoma Other and unspecified parts of face^I9CDX|…<CR>
```

An example with two separate OBX rows; the first pertains to nature of specimen, and has CPT-4 code in the OBX-5 field while the second one has final diagnosis (morphology as both histology and behavior) sent using ICD-O-3:

```
OBX|1|CE|22633-2^Path report.nature of specimen^LN||85097^Bone marrow biopsy^C4|…<CR>

OBX|2|CE|59847-4^Histology and Behavior ICD-O-3^LN||98613^Acute myeloid leukemia
  NOS^ICDO3|…<CR>
```

The same example for the morphology, but using SNOMED codes rather than ICD-O-3 codes:

```
OBX|2|CE|31205-8^Path report.final diagnosis^LN||M-98613^Acute myeloid leukemia
  NOS^SCT2^17788007^Acute myeloid leukemia^SCT|…<CR>
```

OBX-6 Units (CE-250, Required or empty) 00574

Definition: This field contains the units for the observation value in OBX-5 (ISO, ANSI, or UCUM). The default value is ISO+ abbreviation. The ISO+ and ANSI+ customary units are shown in Section 7.3.2.6.2 of the HL7 Version 2.5.1 standard. Commonly used ISO units include grams (gm or g), kilograms (kg), millimeter (mm), centimeter (cm), milligram per milliliter (mg/ml), gram per liter (gm/L), or moles per milligram (moles/mg).

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.

(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

For example:

```
|Ug/mL^microgram/milliliter^ISO+|
```

The units for age would be yr, wk, mo, d (in ANSI+ standards representation) in OBX-6.

For example:

```
|mo^month^ANS+|
```

For example:

```
|ng/mL^Nanograms per milliliter^UCUM|
```

This field is left empty if the OBX-5 Observation value holds data that is not a measurement, such as a coded value. Note that not all numeric values are measurements, some are counts. For example, an integer indicated the number of metastases observed would not require any units in OBX-6, whereas an integer indicating the size of a lesion would require units.

Note for cancer registries: Corresponds to NAACCR data item Units for Age at Specimen [7540].

In Canada, the units system "SI" (Systeme Internationale) must be used. This system is a constraint on the UCUM units system (there is no SI unit identified for cancer reporting that is not UCUM compliant). Therefore the code system to be populated in OBX-6 should be "UCUM" even if SI units are used, since this is not a different code system. Canada's Weights and Measures Act (1971) proclaimed that "all units of measurement used in Canada shall be determined on the basis of the International System of Units (SI) established by the General Conference on Weights and Measures". Canada Health Infoway has created an example Value Set which enumerates legal UCUM units of measure that are SI compliant and may be used for laboratory results in Canada. This Value Set is x_LabUnitsofMeasure 2.16.840.1.113883.2.20.3.152; members of the Canadian Standards Collaborative may access this Value Set content online at http://forums.infoway-inforoute.ca/PCS/.

In the United States, UCUM is the preferred system for reporting units. Existing laboratory systems may populate this units field using ANSI units of measure, in which case the code system should be reported using the code for ANSI+ code system, which is "ANS+". Some laboratory systems may report using ISO units following the ISO 2955.83 standard with HL7 extensions; in this case, the code system in the third component of this field should be "ISO+".

OBX-7 References range (ST-60, Required or Empty) 00575

Definition: When the observation quantifies the amount of a toxic substance, then the upper limit of the range identifies the toxic limit. If the observation quantifies a drug, the lower limits identify the lower therapeutic bounds and the upper limits represent the upper therapeutic bounds above which toxic side effects are common.

If numeric, the values of this field may report several values in one of the following three formats:

lower limit-upper limit	when both lower and upper limits are defined (e.g., for potassium "3.5 - 4.5")
> lower limit	if no upper limit (e.g., ">10")
< upper limit	if no lower limit (e.g., "<15")

If alphabetical, the normal value may be reported in OBX-7. For instance, the normal result on an assay may be "pink."

For those test results that have reference ranges that are known in the sending system, this field should be populated.

In the example, this field is not valued.

OBX-8 Abnormal flags (ID-5, Required or Empty, Repeating maximum 5) 00576

Definition: This field contains the microbiology sensitivity interpretations. Refer to *HL7 Table 0078 - Abnormal flags* for valid entries.

The value of an ID data type follows the formatting rules for an ST data type except that it is drawn from a table of HL7 legal values.

Abnormal flags should be used for reporting microbiology sensitivity data. Abnormal flags for antimicrobial sensitivity reporting should conform to the recommendations of National Committee of Clinical Laboratory Standards (NCCLS, http://www.nccls.org). For most reported findings, the allowable values are S, I, or R, and may be provided in addition to the numeric value in OBX-5. For those results where a laboratory typically identifies the test as normal or abnormal, this field may be valued.

For Cancer Reporting, microbiology results are rarely transmitted as part of cancer reporting, so this field is rarely valued. There are some other specific laboratory tests occasionally included with cancer pathology reports, such as tumor marker tests; if the laboratory collects these abnormal flags with the results, they should be sent. For example, in HER2/neu testing, a FISH result of greater than 6.0 copies may be reported in OBX-5, and the laboratory may have a policy of reporting a positive using the abnormal flag, which is then reported using this field. For example:

```
OBX|17|SN|31150-6^HER2/neu FISH^LN^^^||>^6.0|||P|||F<CR>
```

Note that only certain abnormal flags are appropriate for specific laboratory tests.

OBX-9 Probability (NM-5, Not Supported) 00577

OBX-10 Nature of abnormal test (ID-2, Required or Empty, Repeating maximum 5) 00578

Definition: This field contains the nature of the abnormal test. Valid values are drawn from *HL7-defined Table 0080 Nature of Abnormal Testing*.

The value of an ID data type follows the formatting rules for an ST data type except that it is drawn from a table of HL7 legal values.

In the example, this field is not valued.

OBX-11 Observation result status (ID-1, Required) 00579

Definition: This field contains the observation result status. Refer to *HL7 Table 0085 - Observation result status codes interpretation* for valid values. This field reflects the current completion status of the results for data contained in the *OBX-5-observation value* field. It is a required field. Previous versions of HL7 stated this implicitly by defining a default value of "F" indicating that the result has been verified to be correct and final.

The value of an ID data type follows the formatting rules for an ST data type except that it is drawn from a table of HL7 legal values.

Note for cancer registries: Corresponds to NAACCR item Path--Result Status [7330].

OBX-12 Date last observation normal values (TS-26, Not Supported) 00580

OBX-13 User defined access checks (ST-20, Not Supported) 00581

OBX-14 Date-time of the observation (TS-26, Required or Empty) 00582

Definition: Records the time of the observation. It is the physiologically relevant date-time or the closest approximation to that date-time of the observation. This field is required in two circumstances. The first is when the observations (OBXs) reported beneath one report header (OBR) have different dates, for instance when one measurement within a battery may have a different time/date than another measurement.

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

For example:
|200012161330|

It is also needed in the case of OBX segments that are being sent by the placer to the filler, in which case the date of the observation being transmitted is likely to have no relation to the date of the requested observation. In France, requesting services routinely send a set of the last observations along with the request for a new set of observations. The date of these observations is important to the filler laboratories.

In all cases, the observation date-time is the physiologically relevant date-time or the closest approximation to that date-time. In the case of tests performed on specimens, the relevant date-time is the specimen's collection date-time. In the case of observations taken directly on the patient (e.g., X-ray images, history and physical), the observation date-time is the date-time that the observation was performed.

For NAACCR messaging, if this date-time is recorded for the specimen collection date-time, it must be populated in this field.

OBX-15 Producer's Reference (CE-250, Conditional or Empty) 00583

Definition: Contains a unique identifier of the responsible producing service. The identifier for the producing service must be included for all cancer pathology report messages that are reported to cancer registries, and this is most often the sender of the message (laboratory) as identified in the *MSH-4 – Sending Facility.* However, when an observation in an OBX has been made by a facility other than that defined in the MSH, it must be identified here. When this field is null, the receiving system assumes that the observations were produced by the sending organization. In the US, this is generally the CLIA identifier. In Canada, the local jurisdictional authority may mandate the use of certain identifiers for pathology laboratories; please contact the local authority for guidance. When the test results are produced at outside laboratories, the CLIA identifier for the laboratory that performed the test must appear here and will be different from the identifier listed as the sending facility in the MSH-4. Note that since the data type of this field is a CE coded element rather than EI entity identifier, when populating this field the first component 'identifier' should contain the identifier of the organization, the second component 'text' should contain the name of the organization, and the third component 'Name of coding system' should contain the type of identifier, e.g. 'CLIA'. Conditionality predicate: populate the identifier of the facility or organization producing this observation if different from the identifier in *MSH-4 Sending facility* in this message.

The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
<identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
<alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>

CE data type components are defined as follows:
(1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
(2) Text (ST). Name or description of the item in question.
(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

For example:

```
|01D0301145^HITECK PATH LAB^CLIA|
```

or

```
|UNIVERSITY HEALTH NETWORK^3910^MOH|
```

(where MOH (Ministry of Health) is the assigning authority for Hospital Master numbers in Ontario, Canada.)

OBX-16 Responsible observer (XCN-250, Required or Empty, Repeating maximum 5) 00584

Definition: This field contains the identifier of the individual directly responsible for the observation (the person who either performed or verified it). In a laboratory, the observer is the technician who performed or verified the analysis. The code for the observer is recorded as a CE data type. If the code is sent as a local code, it should be unique and unambiguous when combined with OBX-15-producer ID. For Cancer reporting, this is the identifier of the Pathologist reading the slides, or reviewing and signing a section of the report.

With the increased adoption of the content standards for Cancer Reports, a number of required data elements are generally not directly observed by the Pathologist reading the slides, but are supplied to the laboratory with the specimen. These include items such as Patient History, Neoadjuvant therapy, metastatic disease, and other similar items collected or directly observed by clinicians outside of the Pathology Laboratory (surgeon, radiologist, etc.). When these data items are reported, information on the outside clinician documenting the item should be reported in OBX-16.

> Components of the XCN data type: <ID number (ST)>^<family name (ST)>&<last name prefix (ST)>^<given name (ST)>^<middle initial or name (ST)>^<suffix (e.g., Jr. or III) (ST)>^<prefix (e.g., Dr.) (ST)>^<degree (e.g., MD) (IS)>^<source table (IS)>^<assigning authority (HD)>^<name type code (ID)>^<identifier check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<identifier type code (IS)>^<assigning facility ID (HD)>^<name representation code (ID)>
>
> Subcomponents of assigning authority: <namespace ID (IS)>&<universal ID (ST)> & <universal ID type (ID)>
>
> Subcomponents of assigning facility: <namespace ID (IS)>&<universal ID (ST)> & <universal ID type (ID)>

If a responsible observer for the particular individual result carried in this OBX is different from the Principal Result Interpreter in OBR-32, and is recorded in the sending system, this field must be populated.

In the following example, the Principal Result Interpreter is Quincy Pathologist, and the Surgeon Dr. Bones McCoy. The result being reported is the tumor location from which the specimen was taken from the Patient by the Surgeon.

```
OBR|2||97810430|11529-5^SURGICAL PATH REPORT^LN^^PATHOLOGY REPORT^L|||20030922|||||||||
164341^ONCOLOGIST^HANNAH^^^DR|||||||||F|||||||109772^PATHOLOGIST^QUINCY<CR>
...
OBX|31|TX|21855-2^Primary site Cancer^LN||Prostate||||||F|||||57684^McCoy^Bones<CR>
```

OBX-17 Observation method (CE-250, Required or Empty, Repeating maximum 6) 00936

Definition: This field is used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by different methods and the distinction is not implicit in the test ID.

> The CE data type transmits codes and the text associated with the code. This type has six components arranged in two groups as follows:
> <identifier (ST)>^<text (ST)>^<name of coding system (ST)>^
> <alternate identifier (ST)>^<alternate text (ST)> ^<name of alternate coding system (ST)>
>
> CE data type components are defined as follows:
> (1) Identifier (ST). The code that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.
> (2) Text (ST). Name or description of the item in question.

(3) Name of coding system (ST). Identifies the coding system used. The combination of the identifier and the name of the coding system components will be a unique code for a data item.
(4-6) Three components analogous to 1-3 for the alternate or local coding system.

The vast majority of information in a Pathology Report is textual information (contained in the OBX segment) and produced directly by the Pathologist or other Clinicians in the Pathology Laboratory. If this field is not populated, then the Observation Method is considered to be the usual method for that type of result (physical examination for the Gross Pathology Study, microscopic examination by the Pathologies for the Microscopic Study, etc.). However, in some circumstances, the result carried in the OBX segment is generated by other means. Such means may include, but are not limited to, specific probes for molecular studies, codes assigned by the tumor registrar, and coded results generated by an autocoder system or Natural Language Processing (NLP) system. When this occurs, it is recommended that this field OBX-17 be used to indicate the method of obtaining those results. The recommended codes to indicate this circumstance are:

Code	Description
CTR	Generated by Certified Tumor Registrar
AUT	Generated by Autocoder or other automated system
OTH	Other staff (other than Tumor Registrar or Pathologist)

The code system to be populated in the third component of the CE triplet when using these codes should be "NAACCROMC" (NAACCR Observation Method Code).

Example of a Histology code assigned by the registrar:

```
OBX|46|CE|59847-4^Histology and Behavior ICD-O-3 Cancer^LN||81403^Adenocarcinoma, NOS,
Malignant^ICDO3||||||F||||||CTR^Generated by Certified Tumor Registrar^NAACCROMC|…
```

Example of an anatomical location assigned by an NLP autocoder program:

```
OBX|23|CE|21934-^Surgery site.primary
Cancer^LN||41216001^Prostate^SCT||||||F||||||AUT^Generated by Autocoder or other automated
system^NAACCROMC|…
```

For many newly emerging molecular studies, there exist no standard or commonly used codes for the method for the test. The following example, specifying a particular probe used in the HER2 FISH test, shows how this may be populated with a local name for the method (no local or standard code):

```
OBX|58|SN|49683-6^HER2/CEP17 Tiss FISH-Rto^LN||5.0||||||F||||||^PathVysion HER-2 DNA FISH|…
```

OBX-18 Equipment Instance Identifier (EI-22, Not Supported) 01479

OBX-19 Date/Time of the Analysis (TS-26, Conditional or Empty) 01480

Definition: This field is used to transfer the time stamp associated with generation of the analytical result by the instrument specified in Equipment Instance Identifier (see above). Conditionality predicate: may be populated if there is an Equipment Instance Identifier.

Time stamp (TS) data type must be in the format:
YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][ ]

The user values the field only as far as needed. When a system has only a partial date (e.g., month and year, but not day), the missing values may be interpreted as zeros. The time zone is assumed to be that of the sender.

OBX-20 Reserved for harmonization with V2.6

OBX-21 Reserved for harmonization with V2.6

OBX-22 Reserved for harmonization with V2.6

OBX-23 Performing Organization Name (XON-567, Required or Empty, Must Not Repeat) 02283

Definition: This field contains the name of the organization/service responsible for performing the service. When this field is null, the receiving system assumes that the observations were produced by the sending organization. The information for performing organization is recorded as an XON data type. In the US, the Medicare number of the performing organization is suggested as the identifier (component 10).

XON data type components: <Organization Name (ST)> ^ <Organization Name Type Code (IS)> ^ <DEPRECATED-ID Number (NM)> ^ <Check Digit (NM)> ^ <Check Digit Scheme (ID)> ^ <Assigning Authority (HD)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility (HD)> ^ <Name Representation Code (ID)> ^ <Organization Identifier (ST)>

Subcomponents for Assigning Authority (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

Subcomponents for Assigning Facility (HD): <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

For laboratory, this field specifies the laboratory that produced the test result described in this OBX segment. It should be reported explicitly when the test results are produced at outside laboratories, for example. This information supports CLIA regulations in the US. For the US producing laboratories, which are CLIA certified, the CLIA identifier should be used for the organization identifier (component 10). In Canada, use the identifier mandated by the local jurisdictional authority.

OBX-24 Performing Organization Address (XAD-631, Conditional or Empty, Must Not Repeat) 02284

Definition: This field contains the address of the organization/service responsible for performing the service.

XAD data type components: <Street Address (SAD)>^ <Other Designation (ST)>^<City (ST)>^<State or Province (ST)> ^<ZIP or Postal Code (ST)>^<Country (ID)>^<address type (ID)>^<Other Geographic Designation (ST)>^<County/Parish Code (IS)>^<Census Tract (IS)>^<Address Representation Code (ID)>^<Address Validity Range (DR)>^<Effective Date (TS)>^<Expiration Date (TS)>

XAD data type components are defined as follows:
(1) Street Address (SAD): This datatype specifies an entity's street address and associated detail. Up to three components of the street address. Subcomponents of SAD data type are: Street or Mailing Address (ST)&Street Name (ST)&Dwelling Number (ST)
- Street or Mailing Address: This component specifies the street or mailing address of a person or institution. When referencing an institution, this first component is used to specify the institution name. When used in connection with a person, this component specifies the first line of the address.
- Streen Name: This component specifies the name of the street.
- Dwelling Number: This component specifies a specific dwelling identification when a single street address contains multiple units.
(2) Other Designation (ST): Second line of address. In US usage, it qualifies address. Examples: Suite 555 or Fourth Floor. When referencing an institution, this component specifies the street address.
(3) City (ST): This component specifies the city, or district or place where the addressee is located depending upon the national convention for formatting addresses for postal usage.
(4) State or Province (ST): This component specifies the state or province where the addressee is located. State or province should be represented by the official postal service codes for that country.
(5) ZIP or Postal Code (ST): This component specifies the zip or postal code where the addressee is located. Zip or postal codes should be represented by the official codes for that country. In the US, the zip code takes the form 99999[-9999], while the Canadian postal code takes the form A9A9A9, and the Australian Postcode takes the form 9999.
(6) Country (ST): This component specifies the country where the addressee is located. HL7 specifies that the 3-character (alphabetic) form of ISO 3166-1 be used for the country code. Refer to *HL7 Table 0399 – Country code* for valid values.
(7) Address Type (ID): This component specifies the kind or type of address. Refer to *HL7 Table 0190 - Address type* for valid values.
(8) Other Geographic Designation (ST): This component specifies any other geographic designation. It includes county, bioregion, SMSA, etc.
(9) County/Parish Code (IS): A code that represents the county in which the specified address resides. User-defined Table 0289 - County/parish is used as the HL7 identifier for the user-defined table of values for this component. When this component is used to represent the county (or parish), component 8 <other geographic designation> should not duplicate it (i.e., the use of <other geographic designation> to represent the county is allowed only for the purpose of backward compatibility, and should be discouraged in this and future versions of HL7). Allowable values: codes defined by government.
(10) Census Tract (IS): A code that represents the census tract in which the specified address resides. *User-defined Table 0288 - Census Tract* is used as the HL7 identifier for the user-defined table of values for this component. Allowable values: codes defined by government
(11) Address Representation Code (ID): In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is

still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying. Refer to *HL7 Table 0465 - Name/address representation* for values.(12) Address Validity Range (DR): This component cannot be fully expressed. Identified as v 2.4 errata. Retained for backward compatibility only as of v 2.5. Refer to Effective Date and Expiration Date components. Do not use.
(13) Effective Date (TS): The first date, if known, on which the address is valid and active.
(14) Expiration Date (TS): The last date, if known, on which the address is valid and active.

For laboratories, this field specifies the address of the laboratory that produced the test result described in this OBX segment. It should be reported explicitly when the test results are produced at outside laboratories, for example. This information supports CLIA regulations in the US.

OBX-25 Performing Organization Medical Director (XCN-3002, Not Supported) 02285

2.8.4 Notes and Comments (NTE) Segment

The NTE segment is a common format for sending notes and comments. This optional, repeating segment may be inserted after any of the OBX segments, or the OBR segment, in the ORU message. The NTE segment applies to the information in the segment that immediately precedes it (i.e., the observation reported in the preceding OBX segment, or the type of observation identified in the OBR segment). The NTE segment is not further defined by HL7.

Note: This segment is not routinely completed, however, if this section is used it should only include general comments, instructions, or results and not specific results.

NTE Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			00096	Set ID - NTE		RE	[0..1]
2	8	ID	O		0105	00097	Source of Comment		RE	[0..1]
3	64k	FT	O	Y		00098	Comment		RE	[0..4]
4	250	CE	O		0364	01318	Comment Type		RE	[0..1]

Example:

```
NTE|1|L|THIS WOULD BE A COMMENT THAT COMES FROM THE LABORATORY.<CR>
```

NTE Field Definitions

NTE-1 Set ID (SI-4, Required or Empty) 00096

Definition: This field may be used where multiple NTE segments are included in a message. Their numbering must be described in the application message definition.

NTE-2 Source of comment (ID-8, Required or Empty) 00097

Definition: This field is used when source of comment must be identified. HL7-defined *Table 0105 Source of Comment* may be extended locally during implementation.

NTE-3 Comment (FT-64k, Required or Empty, Repeating maximum 4) 00098

Definition: This field contains the comment contained in the segment.

NTE-4 Comment type (CE-250, Required or Empty) 01318

Definition: This field contains a value to identify the type of comment text being sent in the specific comment record. Allowable values are given in *User-defined Table 0364 - Comment Type*.

Note: NTE-2 already identifies one source of comment (e.g., ancillary, placer, other). However, some applications need to support other types of comment text (e.g., instructions, reason, remarks, etc.). A separate NTE segment can be used for each type of comment (e.g., instructions are on one NTE and remarks on another NTE). If the amount of text for a specific type of comment exceeds the NTE segment maximum, the NTE-1 Set ID field can be valued to group related NTE's together when applicable. For example, all NTEs with a Set ID valued to 1 are grouped as a logical grouping of text.

2.8.5 Specimen (SPM) Segment

The intent of this segment is to describe the characteristics of a specimen. It differs from the intent of the OBR in that the OBR addresses order-specific information. It differs from the SAC segment in that the SAC addresses specimen container attributes. An advantage afforded by a separate specimen segment is that it generalizes the multiple relationships among order(s), results, specimen(s) and specimen container(s).

A specimen is defined as "A physical entity that is an individual, a group, an item, or a part representative of a larger group, class or whole that is the target of an observation or analysis for the purpose of drawing conclusions about the group, class, or whole." Note that any physical entity in the universe has the potential to become a specimen.

A specimen is collected or obtained from a source and may be representative of the source, or may represent a deviation within the source. A specimen may be wholly or partially consumed during an observation and any remaining portion of the specimen is persistent and can be stored.

This segment may also be used in limited cases to describe a "virtual" specimen. In particular, to identify the characteristics required for a specimen in the context of a specific observation or test.

In summary, SPM represents the attributes specific and unique to a specimen.

For Cancer Reporting, there are many different paths that the specimens and reports may follow, depending upon the complexity of the environment. The diagram below illustrates the simplest flow, where all participants and HL7 user are within the same institution. This can be referred to as a "One Hospital Flow", where there is one institution, one specimen, one Patient ID, and one Specimen ID for the entire report, which is sent (when complete) to the Cancer Registry.

There may alternatively sometimes be very complex paths that specimens take among multiple laboratories and systems, with one or more of these laboratories reporting to the registry, in addition to the facility collecting the specimen and originating the order. Please see the illustration of an example of such a complex case after the SPM field descriptions below.

SPM Attributes

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	4	SI	O			01754	Set ID – SPM		RE	[0..1]
2	80	EIP	O			01755	Specimen ID		R	[1..1]
3	80	EIP	O	Y		01756	Specimen Parent IDs		RE	[0..1]
4	250	CWE	R		0487	01900	Specimen Type		R	[1..1]
5	250	CWE	O	Y	0541	01757	Specimen Type Modifier		X	[0..0]
6	250	CWE	O	Y	0371	01758	Specimen Additives		X	[0..0]
7	250	CWE	O		0488	01759	Specimen Collection Method		X	[0..0]
8	250	CWE	O			01901	Specimen Source Site		X	[0..0]

Seq	Len	DT	Opt	RP #	Tbl #	Item #	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
9	250	CWE	O	Y	0542	01760	Specimen Source Site Modifier		X	[0..0]
10	250	CWE	O		0543	01761	Specimen Collection Site		X	[0..0]
11	250	CWE	O	Y	0369	01762	Specimen Role		X	[0..0]
12	20	CQ	O			01902	Specimen Collection Amount		X	[0..0]
13	6	NM	C			01763	Grouped Specimen Count		X	[0..0]
14	250	ST	O	Y		01764	Specimen Description		X	[0..0]
15	250	CWE	O	Y	0376	01908	Specimen Handling Code		X	[0..0]
16	250	CWE	O	Y	0489	01903	Specimen Risk Code		X	[0..0]
17	49	DR	O			01765	Specimen Collection Date/Time		RE	[0..1]
18	26	TS	O			00248	Specimen Received Date/Time		RE	[0..1]
19	26	TS	O			01904	Specimen Expiration Date/Time		X	[0..0]
20	1	ID	O		0136	01766	Specimen Availability		X	[0..0]
21	250	CWE	O	Y	0490	01767	Specimen Reject Reason		RE	[0..2]
22	250	CWE	O		0491	01768	Specimen Quality		X	[0..0]
23	250	CWE	O		0492	01769	Specimen Appropriateness		X	[0..0]
24	250	CWE	O	Y	0493	01770	Specimen Condition		X	[0..0]
25	20	CQ	O			01771	Specimen Current Quantity		X	[0..0]
26	4	NM	O			01772	Number of Specimen Containers		RE	[0..1]
27	250	CWE	O			01773	Container Type		X	[0..0]
28	250	CWE	O		0544	01774	Container Condition		X	[0..0]
29	250	CWE	O		0494	01775	Specimen Child Role		C	[0..1]
30	20	CX	O	Y		02314	Accession ID		RE	[0..25]
31	20	CX	O	Y		02315	Other Specimen ID		RE	[0..300]

Examples:

```
SPM|1|3444444&&123456&AHA^92756H&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200711091000|2
00711100900||||||||||||H4_3333333^^^PATHCONSULTANTS<CR>
```

SPM Field Definitions

SPM-1 Set ID - SPM (SI-4, Required or Empty) 01754

Definition: This field contains the sequence number. This field is used to identify SPM segment instances

in message structures where the SPM segment repeats. In messages where the SPM segment does not repeat, this field may be empty.

SPM-2 Specimen ID (EIP-80, Required) 01755

Definition: This field contains a unique identifier for the specimen as referenced by the Placer application, the Filler application, or both.

This field may be empty, as there are HL7 use cases in which a unique specimen identifier may not exist. For Cancer reporting, this field is always populated by the Filler application, as there are always actual specimens. Filler applications would be expected to assign a Specimen ID and populate this field accordingly.

Components: <Placer Assigned Identifier (EI)> ^ <Filler Assigned Identifier (EI)>

Subcomponents for Placer Assigned Identifier (EI): <Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

Subcomponents for Filler Assigned Identifier (EI): <Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

For any ORU message being sent to either a system from which a specimen was received, or to the central registry, the Placer Assigned Identifier is the specimen ID that was received with the specimen from the external 'upstream' system. If the message is being sent by the originating HIS, then this is the original ID assigned during the specimen collection procedure prior to sending to any pathology laboratory for the results. The Filler Assigned Identifier is the number assigned by the laboratory sending the results (usually during the accessioning process, but for child/parts of specimens, it can be during the division of the specimen).

When a laboratory is returning a results message (ORU) to its upstream system with the information received from another laboratory it sent the specimen out to, this filler number is its own number; the filler number assigned by the laboratory the reference results are received from should be populated in the SPM-31 Other Specimen ID.

Note that for complex flows amongst multiple institutions, each of which may assign their own Specimen ID and/or Accession Number, this field may not hold all the information from the multiple institutions. In these cases, the SPM-31 Other Specimen ID should be used to carry this additional information.

SPM-3 Specimen Parent IDs (EIP-80, Required or Empty, Does not Repeat) 01756

Definition: This field contains the identifiers for the specimen or specimens that contributed to the specimen that is described by the segment instance.

If this field repeats, then SPM-11-Specimen Role should be valued with "L" (pooled). The repetitions of this field then carry the specimen IDs of the parent specimens contributing to the pool.

Components: <Placer Assigned Identifier (EI)> ^ <Filler Assigned Identifier (EI)>

Subcomponents for Placer Assigned Identifier (EI): <Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

Subcomponents for Filler Assigned Identifier (EI): <Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>

SPM-4 Specimen Type (CWE-250, Required) 01900

Definition: This field describes the precise nature of the entity that will be the source material for the observation.

Any physical entity that may have observations made about it may qualify as a specimen. The entry in this attribute describes the specific entity as precisely as possible, whether that is a complex organism (e.g., an ostrich) or a specific cellular mass (e.g., a specific muscle biopsy).

This attribute corresponds to the first component of OBR.15 – Specimen Source and SAC.6 – Specimen Source component 1 – *Specimen source name or code.* These components, and the SPS data type, were deprecated upon the development of this segment.

A nationally recognized coding system is to be used for this field. Valid coding sources for this field include:

- *HL7 table 0487 – Specimen Type* (replaces *HL7 table 0070 – Specimen source codes*)
- SNOMED, etc.
- Veterinary medicine may choose the tables supported for the components of this field as decided by their industry.

Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

NAACCR supported. Note that for Cancer Reporting, the recommended HL7 values *HL7 table 0487 – Specimen Type* have been abbreviated in this document to those recommended for Cancer Reporting.

For example:

```
|TISS^Tissue^HL70487|
```

SPM-5 Specimen Type Modifier (CWE-250, Not Supported) 01757

SPM-6 Specimen Additives (CWE-250, Not Supported) 01758

SPM-7 Specimen Collection Method (CWE-250, Not Supported) 01759

SPM-8 Specimen Source Site (CWE-250, Not Supported) 01901

SPM-9 Specimen Source Site Modifier (CWE-250, Not Supported) 01760

SPM-10 Specimen Collection Site (CWE-250, Not Supported) 01761

SPM-11 Specimen Role (CWE-250, Not Supported) 01762

SPM-12 Specimen Collection Amount (CQ-20, Not Supported) 01902

SPM-13 Grouped Specimen Count (NM-6, Not Supported) 01763

SPM-14 Specimen Description (ST-250, Not Supported) 01764

SPM-15 Specimen Handling Code (CWE-250, Not Supported) 01908

SPM-16 Specimen Risk Code (CWE-250, Not Supported) 01903

SPM-17 Specimen Collection Date/Time (DR-49, Required or Empty) 01765

Definition: The date and time when the specimen was acquired from the source. The use of the Date Range data type allows for description of specimens collected over a period of time, for example, 24-hour urine collection. For specimens collected at a point in time, only the first component (start date/time) will be populated.

Please note that this length of 49 has been pre-adopted from HL7 v2.6, since it cannot be implemented within the length restriction imposed by the HL7 v2.5.1 standard. This new length is the two TS components of length 24 each (Degree of Precision subcomponents not removed) plus one delimiter.

Components: <Range Start Date/Time (TS)> ^ <Range End Date/Time (TS)>

Subcomponents for Range Start Date/Time (TS): <Time (DTM)> & <DEPRECATED-Degree of Precision (ID)>

Subcomponents for Range End Date/Time (TS): <Time (DTM)> & <DEPRECATED-Degree of Precision (ID)>

SPM-18 Specimen Received Date/Time (TS-26, Required or Empty) 00248

Definition: The specimen received date/time is the time that the specimen is received at the diagnostic service. The actual time that is recorded is based on how specimen receipt is managed and may correspond to the time the sample is logged in. This is fundamentally different from SPM-17 Specimen Collection date/time.

Components: <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>

SPM-19 Specimen Expiration Date/Time (TS-26, Not Supported) 01904

SPM-20 Specimen Availability (ID-1, Not Supported) 01766

SPM-21 Specimen Reject Reason (CWE-250, Required or Empty, Repeating maximum 2) 01767

Definition: This describes one or more reasons the specimen is rejected for the specified observation/result/analysis. Refer to *HL7 Table 0490 – Specimen Reject Reason* for valid values.

Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

For example:

```
|RN^Contamination^HL70490|
```

SPM-22 Specimen Quality (CWE-250, Not Supported) 01768

SPM-23 Specimen Appropriateness (CWE-250, Not Supported) 01769

SPM-24 Specimen Condition (CWE-250, Not Supported) 01770

SPM-25 Specimen Current Quantity (CQ-20, Not Supported) 01771

SPM-26 Number of Specimen Containers (NM-4, Required or Empty) 01772

Definition: This field identifies the number of containers for a given sample. For sample receipt verification purposes; may be different from the total number of samples that accompany the order.

SPM-27 Container Type (CWE-250, Not Supported) 01773

SPM-28 Container Condition (CWE-250, Not Supported) 01774

SPM-29 Specimen Child Role (CWE-250, Conditional) 01775

Definition: For child specimens, this field identifies the relationship between this specimen and the parent specimen. If this field is populated, then SPM-3-Specimen Parent ID must be populated. This field differs from SPM-

15-Specimen Role in that this field refers to the role of this specimen relative to a parent role rather than the role of this specimen to the ordered service.

Refer to *HL7 Table 0494 – Specimen Child Role* for valid values.

Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>

As illustrated in the section on Multiple Hospital Flows in the Interaction discussion in earlier sections, complex flows of information tracking among multiple institutions, several of which may assign their own Specimen ID and/or Accession Number to the case, or portion thereof, must be handled. In order to properly address these requirements, the following two fields in the SPM segment are being pre-adopted from the HL7 Standard version 2.7; these fields were added to HL7 at that time specifically to address these types of scenarios involving multiple identifiers for specimens in a report sent to a central monitoring or surveillance agency. These scenarios are currently active in North America and must be addressed for reporting to registries.

SPM-30 Accession ID (CX-20, Required or Empty, Repeating maximum 25) 02314

Definition: This field contains accession identifier(s) associated with the specimen. In many cases, applications involved in the collection, transportation or testing of the specimen will assign their own accession identifiers. This field allows communication of these accession identifiers.

An accession id may or may not, depending up laboratory practice, identify a single specimen. In addition, accession ids are commonly re-used over time, so the accession id may not uniquely identify a specimen. On the other hand, there is a great demand for unambiguously communicating the accession identifier(s). If the sending system has additional accession identifiers for this specimen, they must be populated in this field.

Components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>

Components are defined as follows:

(1) ID number (ST).

(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.

(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.

(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Example showing the SPM-30 field illustrating multiple accession numbers reported to the cancer registry.

```
|57482739^^^Hospital 2 Path Lab~987204926^^^Hospital 3 Lab|
```

SPM-31 Other Specimen ID (CX-20, Required or Empty, Repeating maximum 300) 02315

Definition: This field contains other identifier(s) for the specimen as referenced an application. Normally this field is used to carry additional identifiers for the specimen in addition to those identified in SPM-2 Specimen ID. In many cases other applications involved in the collection, transportation or testing of the specimen will assign additional specimen identifiers. This field allows communication of those other specimen identifiers. If the sending system has additional specimen identifiers for this specimen, they must be populated in this field.

Components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>

Components are defined as follows:
(1) ID number (ST).
(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.
(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.
(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.
(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Example showing the SPM-31 field for the message sent in Interaction 16 from section 3.2.3.1 *Interactions for Multiple Hospital Specimen Processing and Reporting with Consults*, illustrating how the multiple Specimen IDs that were assigned by Hospital 2 lab and Hospital 4 Lab are reported to the Cancer Registry.

```
|H2_3444444^^^HOSPITAL2~H4_3333333^^^HOSPITAL4<CR>
```

2.9 HL7 BATCH PROTOCOL

There are instances when it is convenient to transfer a batch of HL7 messages for reporting to cancer registries. Such a batch could be sent online using SFTP or HTTPS, or offline via tape or diskette.

2.9.1 HL7 Batch File Structure

A batch of HL7 messages may be sent online using a common file transfer protocol or offline via tape or diskette. If needed, a group of batches may be sent using the file header and trailer segments. The FHS and FTS are optional and need not be sent if the transaction is one batch of records. The file/batch syntax follows:

[FHS]	(file header segment)
{ [BHS]	(batch header segment)
{ [MSH	(zero or more HL7 messages)
PID	
OBR	
....	
] }	
[BTS]	(batch trailer segment)
}	
[FTS]	(file trailer segment)

The sequence numbering protocol has a natural application in batch transfers. See the discussion of batch acknowledgments that follows. A batch for reporting to cancer registries will consist of a single type of message (i.e., ORU). Batches should usually contain at least one HL7 message. There are only two cases in which an HL7 batch file may contain zero HL7 messages: (1) a batch containing zero HL7 messages may be sent to meet a requirement for periodic submission of batches when there are no messages to send; and (2)
a batch containing zero negative acknowledgment messages may be sent to indicate that all the HL7 messages contained in the batch being acknowledged are implicitly acknowledged. The attribute tables and field definitions for batch-related segments are given below.

Related Segments and Data Usage: The following segments relate to the HL7 Batch Protocol: (1) BHS - Batch Header, (2) BTS - Batch Trailer, (3) FHS - File Header, and (4) FTS - File Trailer. The BTS segment contains a field, *BTS-3-batch totals*, which may have one or more totals drawn from fields within the individual messages. The method for computing such totals resides with the sending facility.

2.9.2 Acknowledging Batches

In general, the utility of sending batches of data is that the data is accepted all at once, with errors processed on an exception basis. However, it is a permissible application of HL7 to acknowledge all messages. Several options for acknowledgment are given in the HL7 2.5.1 standard document and are not addressed further here.

2.9.3 Batch Segments

File Header (FHS) Segment

The FHS segment is used to head a file (group of batches). Ideally, a single sending facility, for instance a regional laboratory for a hospital consortium, could send a group of batches of reportable findings from separate laboratories within the consortium. In this setting, each separate BHS would have a different CLIA identifier. The FHS would have a different CLIA number as well, or would have the same CLIA number as the one batch that was performed at the sending facility. This complexity of message processing is not common yet, either at laboratories or cancer registries. The description of batch reporting in this guide demonstrates reporting from a single facility and thus the CLIA number is the same for MSH, BHS, and FHS. This segment is required for batch submissions only.

FHS Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Usage	NAACCR Cardnlty
1	1	ST	R			00067	File field separator		R	[1..1]
2	4	ST	R			00068	File encoding characters		R	[1..1]
3	227	HD	O			00069	File sending application		RE	[0..1]
4	227	HD	O			00070	File sending facility		R	[1..1]
5	227	HD	O			00071	File receiving application		RE	[0..1]
6	227	HD	O			00072	File receiving facility		RE	[0..1]
7	26	TS	O			00073	File creation date/time		R	[1..1]
8	40	ST	O			00074	File security		RE	[0..1]
9	20	ST	O			00075	File name/ID/type		RE	[0..1]
10	80	ST	O			00076	File comment		RE	[0..1]
11	20	ST	O			00077	File control ID		RE	[0..1]
12	20	ST	O			00078	Reference file control ID		RE	[0..1]

FHS Field Definitions

Usage notes: FHS fields 1-8 have the same definitions as the corresponding fields in the MSH segment. FHS segment was not shown in the examples, but the field definitions are provided below for reference.

FHS-1 File field separator (ST-1, Required) 00067

Definition: This field has the same definition as the corresponding field in the MSH segment.

FHS-2 File encoding characters (ST-4, Required) 00068

Definition: This field has the same definition as the corresponding field in the MSH segment.

FHS-3 File sending application (HD-227, Required or Empty) 00069

Definition: This field has the same definition as the corresponding field in the MSH segment.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

FHS-4 File sending facility (HD-227, Required) 00070
Definition: This field has the same definition as the corresponding field in the MSH segment.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

FHS-5 File receiving application (HD-227, Required or Empty) 00071
Definition: This field has the same definition as the corresponding field in the MSH segment.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

FHS-6 File receiving facility (HD-227, Required or Empty) 00072
Definition: This field has the same definition as the corresponding field in the MSH segment.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

FHS-7 File creation date/time (TS-26, Required) 00073
Definition: This field has the same definition as the corresponding field in the MSH segment.

Components: <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>

FHS-8 File security (ST-40, Required or Empty) 00074
Definition: This field has the same definition as the corresponding field in the MSH segment.

FHS-9 File name/ID (ST-20, Required or empty) 00075
Definition: This field can be used by the application processing file. Its use is not further specified.

FHS-10 File header comment (ST-80, Required or Empty) 00076
Definition: This field contains the free text field, the use of which is not further specified.

FHS-11 File control ID (ST-20, Required or Empty) 00077
Definition: This field is used to identify a particular file uniquely. Use Timestamp plus a counter similar to MSH-10 to uniquely identify the file here. It can be echoed back in *FHS-12-reference file control ID*.

FHS-12 Reference file control ID (ST-20, Required or Empty) 00078
Definition: This field contains the value of *FHS-11-file control ID* when this file was originally transmitted. Not present if this file is being transmitted for the first time.

File Trailer (FTS) Segment
Used to define the end of a file. This segment is required for batch submissions only.

FTS Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Opt	NAACCR Cardnlty
1	10	NM	O			00079	File batch count		R	[1..1]
2	80	ST	O			00080	File trailer comment		RE	[0..1]

FTS Field Definitions
Usage notes: FTS segment was not used in the given examples, but the field definitions are provided below for reference.

FTS-1 File batch count (NM-10, Required) 00079
Definition: This field contains the number of batches contained in the file.

FTS-2 File trailer comment (ST-80, Required or Empty) 00080
Definition: The use of this free text field is not further defined in the HL7 protocol.

Batch Header (BHS) Segment
Used to define the start of a batch. This segment is required for batch submissions only.

BHS Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Opt	NAACCR Cardnlty
1	1	ST	R			00081	Batch field separator		R	[1..1]
2	3	ST	R			00082	Batch encoding characters		R	[1..1]
3	227	HD	O			00083	Batch sending application		RE	[0..1]
4	227	HD	O			00084	Batch sending facility		R	[1..1]
5	227	HD	O			00085	Batch receiving application		RE	[0..1]
6	227	HD	O			00086	Batch receiving facility		RE	[0..1]
7	26	TS	O			00087	Batch creation date/time		R	[1..1]
8	40	ST	O			00088	Batch security		RE	[0..1]
9	20	ST	O			00089	Batch name/ID/type		RE	[0..1]
10	80	ST	O			00090	Batch comment		RE	[0..1]
11	20	ST	O			00091	Batch control ID		RE	[0..1]
12	20	ST	O			00092	Reference batch control ID		RE	[0..1]

BHS Field Definitions
Usage notes: BHS fields 1-8 have the same definitions as the corresponding fields in the MSH segment. BHS segment was not shown in the examples, but the field definitions are provided below for reference.

BHS-1 Batch field separator (ST-1, Required) 00081
Definition: This field contains the separator between the segment ID and the first real field, BHS-2-batch encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Recommended value is |,(ASCII 124).

BHS-2 Batch encoding characters (ST-3, Required) 00082
Definition: This field contains the four characters in the following order: the component separator, repetition separator, escape characters, and subcomponent separator. Recommended values are ^~\& (ASCII 94, 126, 92, and 38, respectively).

BHS-3 Batch sending application (HD-227, Required or Empty) 00083
Definition: This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

BHS-4 Batch sending facility (HD-227, Required) 00084
Definition: This field contains the address of one of several occurrences of the same application within the sending system. Absent other considerations, the Medicare Provider ID might be used with an appropriate sub-identifier in the second component. Entirely site-defined.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

BHS-5 Batch receiving application (HD-227, Required or Empty) 00085

Definition: This field uniquely identifies the receiving applications among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined.

Components: <Namespace ID (IS) ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

BHS-6 Batch receiving facility (HD-227, Required or Empty) 00086

Definition: This field identifies the receiving application among multiple identical instances of the application running on behalf of different organizations. See comments for BHS-4-batch sending facility. Entirely site-defined.

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

BHS-7 Batch creation date/time (TS-26, Required) 00087

Definition: This field contains the date/time that the sending system created the message. If the time zone is specified, it will be used throughout the message as the default time zone.

Components: <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>

BHS-8 Batch security (ST-40, Required or Empty) 00088

Definition: In some applications of HL7, this field is used to implement security features. Its use is not yet further specified.

BHS-9 Batch name/ID/type (ST-20, Required or Empty) 00089

Definition: This field can be used by the application processing the batch. It can have extra components if needed.

BHS-10 Batch comment (ST-80, Required or Empty) 00090

Definition: This field is a comment field that is not further defined in the HL7 protocol.

BHS-11 Batch control ID (ST-20, Required or Empty) 00091

Definition: This field is used to uniquely identify a particular batch. Use Timestamp and a counter similar to MSH-10 to uniquely identify the batch. It can be echoed back in BHS-12-reference batch control ID if an answering batch is needed.

BHS-12 Batch reference batch control ID (ST-20, Required or Empty) 00092

Definition: This field contains the value of BHS-11-batch control ID when this batch was originally transmitted. This field is not valued if this batch is being sent for the first time.

Batch Trailer (BTS) Segment

Used to define the end of a batch. This segment is required for batch submissions only.

BTS Attributes

Seq	Len	DT	Opt	RP#	Tbl#	Item#	Element Name	NAACCR Item #	NAACCR Opt	NAACCR Cardnlty
1	10	ST	O			00093	Batch message count		R	[1..1]
2	80	ST	O			00094	Batch comment		RE	[0..1]
3	100	NM	O	Y		00095	Batch totals		RE	[0..4]

BTS Field Definitions

Usage notes: BTS segment was not shown in the examples, but the field definitions are provided below for reference.

BTS-1 Batch message count (ST-10, Required) 00093

Definition: This field contains the count of the individual messages contained within the batch.

BTS-2 Batch comment (ST-80, Required or Empty) 00094

Definition: This field is a comment field that is not further defined in the HL7 protocol.

BTS-3 Batch totals (NM-100, Required or Empty, Repeating maximum 4) 00095

Definition: This field contains the batch total. The numbers of messages should be counted and represented here to allow recipients to have simple batch level auditing.

3 Synoptic Reporting

Synoptic Reporting is the standardized and structured documentation of a cancer pathology report, with common definitions, data items, and data item values. Synoptic is a term which implies synopsis or summary; and typically refers to checklists designed to ensure that key data fields are not omitted. Ideally synoptic cancer pathology report should use discrete data items with specific terminology codes such as SNOMED-CT instead of free text transcription. This approach is increasingly being deployed in North America. This chapter describes specific structures and characteristics of the HL7 cancer pathology report message to support the higher levels of reporting involved in synoptic reporting. This chapter addresses specific implementation of synoptic or checklist reporting being implemented in the cancer community following the form of question-and-answer pairs. The bulk of the patterns and rules in this chapter are specifically targeted at the message encoding of completed CAP electronic Cancer Checklists (eCC).

Starting in 2005 these cancer protocols were incorporated into the American College of Surgeons Commission on Cancer (CoC) accreditation program. The related standards do not specify that the CAP Checklist must be used, but rather that the data elements must be within the cancer pathology report. This has created some challenges for CoC reviewers ascertaining compliance and has resulted in some guidance from CAP on the matter (see below). In Canada, the Canadian Association of Pathologist formally endorsed the CAP Checklists as a pan-Canadian content standard for all cancer pathology reporting in July 2009.

To assist CoC reviewers the CAP Laboratory Accreditation Program has developed this list of specific features that define the synoptic reporting:

> **ANP.12385 Synoptic Reporting Phase 0**
> **Data elements required by applicable CAP Cancer Protocols are reported using a synoptic format.**
> **(Note: ANP = Anatomic Pathology Checklist)**
>
> 1. The synopsis can appear in the diagnosis section of the pathology report, at the end of the report or in a separate section
>
> 2. Narrative style comments are permitted, but should not be included in the synoptic section. It is not uncommon for narrative style comments to be used for clinical history, gross descriptions and microscopic descriptions
>
> 3. Elements not required for standard systems of staging, grading and prognostication may or may not be included in the synopsis at the option of the pathologist
>
> 4. Required data elements not applicable to the specimen need not be listed in the synopsis. For example, if a mastectomy specimen does not include lymph nodes, a line item labeled lymph nodes need not be included
>
> 5. Cancer reports for which no CAP Cancer Protocol applies need not include a synoptic report section (for example, incisional biopsy of the breast)
>
> 6. A synoptic section is not required for specimens that contain no cancer

The CAP Cancer Committee has defined formatting characteristics of this reporting style which include:

1. Data is displayed as the required checklist item followed by its answer (response), e.g. “Tumor Size: 5.5 cm”

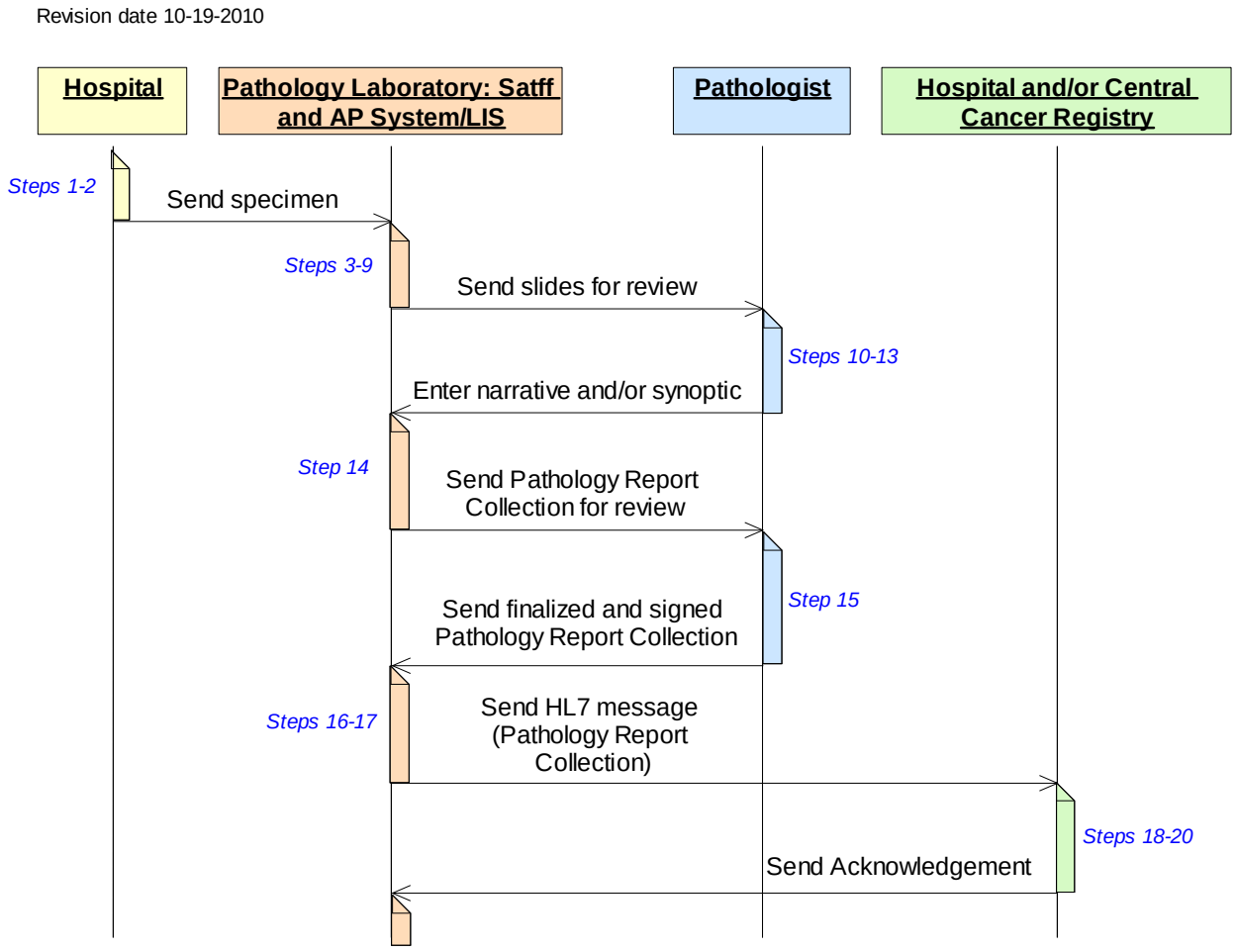
2. Each diagnostic parameter pair (checklist: response) is listed on a separate line
3. The synopsis can appear in the diagnosis section of the pathology report, at the end of the report or in a separate section, but all questions and responses must be listed together in one location

Narrative style comments occur in addition to, but are not a substitute for the synoptic reporting. It is common for narrative style comments to be used for clinical history, gross descriptions and microscopic descriptions. Note: the initial data elements of the synoptic report identify the specific report and its type e.g. "CAP Cancer Checklists", "Colon and Rectum ".

NAACCR recommends in this Guide for HL7 messaging of synoptic reports, the report is identified as such by the LOINC code 60568-3 Synoptic report which is carried in the OBR-4 field which begins the message section containing the report.

3.1 INTERACTIONS

The Actors illustrated in the Process Flow model in the preceding section have a number of interactions which must be supported with data transfers between the Actors. These interactions are illustrated in the Interaction Model shown below. The "Steps #-#" shown refer to the process flow steps as shown in the E-Path Reporting Guidelines.



Send Specimen The specimen(s), along with identifying information including Patient Demographics and perhaps Clinical History, Requisition Identifier, and Specimen Identifier(s) are physically sent to the Pathology Laboratory for analysis. The information may be sent electronically, but is typically captured on a paper form and physically sent with the Specimen(s).

Send slides for review The physical slides that have been prepared from the collected specimen(s), along with documentation from the original specimen collection and/or the processing of the specimen to prepare the slides, is sent to the Pathologist for the analysis and study.

Enter narrative and/or synoptic The Pathologist (and perhaps other Clinicians) enter the information to be contained in the Pathology Report. This may be done by dictation (followed by transcription), or may be some kind of direct data entry into a system for capturing the report.

Send Pathology Report Collection for review The report(s) that have been entered are returned to the Pathologist for review. Depending upon the workflow in the laboratory, this may be a different Pathologist than that data was originally collected from, or may be the same (e.g. to check for transcription errors). This

may be a physical transfer (of paper documents), or may be electronic (system-to-system, or within the same system).

Send finalized and signed Pathology Report Collection After review, verification, and signature (possibly electronic or physical), the collection of signed reports is returned to the system (may be a status changed if within a single system) so they may be transmitted to the registry.

Send HL7 message (Pathology Report Collection) The verified and signed collection of reports are formatting as per this Guide into an HL7 message, and transmitted to the registry.

Send Acknowledgement An HL7 ACK message, ACK^ORU_R01^ACK, is returned to the sending system by the Registry. If the message containing the Pathology Report Collection was transmitted successfully without error, a positive acknowledgement is sent. If there was an error, the error is report with this ACK message.

3.2 THE CAP CANCER CHECKLISTS

The CAP Cancer Protocols are designed as recommendations for definitive cancer reporting. They are released as a set of documents that include guidelines, protocol definitions, checklists, and work aids. These are beginning to be implemented in the data capture user interfaces of Pathology Laboratory Information Systems. The documents that are published for these are in the form of a checklist, and thus are often referred to as the CAP Cancer Checklists. These CAP Cancer Checklists, and the documentation of the protocols that they support, may be accessed at the following URL:

http://www.cap.org/apps/cap.portal?_nfpb=true&cntvwrPtlt_actionOverride=/portlets/contentViewer/show&_windowLabel=cntvwrPtlt&cntvwrPtlt{actionForm.contentReference}=committees/cancer/cancer_protocols/protocols_index.html&_pageLabel=cntvwr

3.3 THE CAP ECC (ELECTRONIC CANCER CHECKLISTS)

The most commonly used fully encoded synoptic reports are the CAP electronic Cancer Checklists (eCC). These are a fully machine-readable format of the CAP Cancer Checklists, designed to make the implementation of capture and reporting of fully coded information easier. New and improved versions of the CAP Cancer Checklists and the eCC are being released on a periodic basis by the CAP Cancer Committee, but some older versions have been implemented and are in use in the community. The CAP eCC advance the management and interoperability of health information through its XML format that can be integrated easily into existing pathology laboratory systems and cancer registry systems. Many of these older versions have had informatics issues and encoding issues identified, and these issues have largely been addressed by the newer releases of the eCC. However, there are still issues outstanding that are in the process of being addressed by CAP, and there are many other issues with encoding the older versions in HL7 messages using the ORU_R01 message structure. The questions and answers supplied in this section of the guide are based on the implementation experiences of synoptic pathology reporting projects underway in Canada, and some pilot studies in the United States. It should be noted that, at the time of publication of this document, many of the CAP Checklists are being revised; a release of both the Checklists and the eCC in early 2011 is scheduled.

The eCCs are available to all vendors, hospitals, and cancer registries licensed by CAP – please contact the College of American Pathologists' for more information on obtaining your license for use of the CAP eCCs. More information on the CAP eCC may be found at the following URL:

http://www.cap.org/apps/cap.portal?_nfpb=true&cntvwrPtlt_actionOverride=%2Fportlets%2FcontentViewer%2Fshow&_windowLabel=cntvwrPtlt&cntvwrPtlt{actionForm.contentReference}=snomed%2Fabout_ecc.html&_state=maximized&_pageLabel=cntvwr

When constructing a message which contains a synoptically structured report, such as that produced when using the CAP Cancer Checklists, the general pattern for encoding is to have every line item on the checklist transmitted in one OBX segment. The OBX-3 contains the 'question', i.e. the text identifying the information entered by the Pathology staff, and the OBX-5 contains the data entered. All data is text (OBX-2 Value Type is 'TX').

For line items on a checklist that are headers of groups of related items, such as the collection of entered data for margins, the header is encoded in the following way: OBX-3 contains the fixed text value "^Header" and OBX-5 contains the text of the header. In addition, to ease the task of registries that must process the received message, it is recommended that the OBX-4 Observation Sub-ID be used to group all of the items that the header refers to with the same numeric value. See the example in Appendix D.2.1 for an illustration of this. It is recognized that some laboratories will be unable to format the message in this way, but if it is done then Registries have an easier time of determining the grouping of the reported synoptic data.

3.4 RULES FOR CONSTRUCTING THE HL7 MESSAGE FOR CAP ECC SYNOPTIC REPORTING

The following list of rules serves as a set of guidelines and recommendations for encoding a completed CAP eCC in an HL7 message as specified in this Guide.

Please note that the HL7 constructs that result from the application of these rules differ from older interfaces, thus sending facilities must ensure that receiving facilities are able to accept and process them before reports formatted this way may be transmitted.

A. The question/answer sets must be transmitted using the published CKey values for the codes (OBX-3 for all questions, and OBX-5 for coded answers). The coded OBX-3 and OBX-5 support a second code to be transmitted, and this must be used to transmit standard codes along with the CKeys if they have been published. These standard codes include:

   - SNOMED-CT Core (many of these are distributed in the CAP eCC release)
   - SNOMED-CT Extension (work is underway for a Cancer Registry SNOMED extension)
   - LOINC Codes
   - NAACCR Registry Codes
   - ICD-O-3 Codes

   SNOMED-CT and/or LOINC codes that are distributed as part of the CAP eCC distribution must be sent. The access mechanisms for other standard codes for the purposes of constructing and processing HL7 messages as per this Volume V Guide are under development and will be published soon. Note that there are efforts underway to make maps between CKeys and Registry codes broadly available to the registry community. If there are published CKeys with no corresponding standard codes -- such CKeys can only be sent with prior approval by the receiving registry.

B. Each question/answer pair in the checklist will be encoded using either a single OBX segment, or at most two OBX segments. One OBX segment will contain information from only a single question/answer pair in the checklist.

C. Each question is encoded in the OBX-3 field.

D. Each selected or filled-in answer is encoded in the OBX-5 field.

E. Single select answers (radio buttons) will be encoded with a single OBX segment. Multi-select answers (checkboxes on the checklists) will be encoded with each selected answer in a separate OBX segment, where the OBX-3 value (question) is the same for all the encoded answers.

F. For multi-part answers (e.g. Other (specify)) there will be one OBX for each part, with the observation sub-ID (OBX-4) used to link the two answers together. The value for the sub-ID will be the CKey value of the answer.

G. For nesting of questions, the structure in HL7 will be flattened for simplicity. Panel headers and note text and other annotative elements on the checklists that are not explicitly questions or answers will not be encoded in the HL7 message when transmitting a CAPECC report. As all the items are explicitly identified with concept codes (CKeys or industry-standard semantic identifiers) the nested grouping of questions as depicted on paper forms is not necessary to determine the precise meaning and relationships of these encoded synoptic items.

H. When SNOMED-CT codes are transmitted in the HL7 message, the code value will be the SNOMED-CT Concept Identifier value (numeric), and the Coding System value will be "SCT". When LOINC codes are transmitted in the HL7 message, the code value will be the numeric LOINC code, and the Coding System value will be "LN". When CKeys are transmitted in the HL7 message, the code value will be the full value of the CKey, which includes a numeric identifier, followed by a decimal point, followed by the namespace identifier. The Coding System (third triplet) for CKeys is "CAPECC".

I. Because CKeys do not change their semantic and are stable over time, the 'code system version' property of the coded data types (seventh component of the CWE) is not populated when transmitting CKey values. Note that changes to CKeys and answer sets are identified by the version number of the checklist, whose versioning mechanism from CAP identifies all changes to CKeys without having to carry version information about the coding system itself in each OBX that carries a CKey.

J. Unique CKey values will be used to distinguish otherwise similarly worded values (e.g. margins for invasive carcinoma and DCIS both have Anterior, Posterial, Medial, Lateral, etc.) Each of these fields has a unique CKey value, but the value itself is a fill-in (not coded). Note that CKeys are not standard semantic terminological entities, but serve as 'hooks' for mapping tables that are used to translate the data captured in an eCC template into standard vocabularies, such as SNOMED-CT, LOINC, NAACCR registry codes, ICD-O-3 codes, etc. These CKey values are employed in the message for transmission, and imply that translation to standard coding systems will be done by the receivers of the messages.

K. The default value type (OBX-2) for all coded answers (radio buttons and check boxes) will be CWE (coded), to permit the CKey value to be sent as a coded answer. For non-coded answers, the 'fixed-list-fill in-answer'tags in the eCC contain an optional property of 'datatype' to inform the generation of the HL7 message where the Value Type is not coded (CWE). When this value is "String" the value type should be "ST". When this value is "Decimal" the value type should be NM, and in this case there is a property 'answer-units' which contains the value to populated in OBX-6 Units. Some question tags have a property 'question-fillin=true' indicating that there is no separate answer tag for the answer; the answer is buried within the question (see below Pattern Type 3). In this case, the 'datatype' and 'answer-units' properties may also be present to inform the software constructing the HL7 message what the value type and units (OBX-2 and OBX-6) must be. When these are not present, the default is CWE (coded with extensions) and the answer (OBX-5) will be populated with the CKey value. For narrative text reports, and for synoptically structured text reports, the value types should be "TX" for the text strings making up the data carried in the OBX-5 fields.

L. Units of Measure - note that measurements generally have a datatype of 'Decimal' or 'Integer' in the eCC XML tags, and thus OBX-2 should be "NM". Also, if the question code has a tag 'units' then the

units value must be populated in OBX-6. See discussion on OBX-6 above for code system to be used when populating OBX-6 Units.

M. Each report that is transmitted will begin with an OBR segment in the message; when more than one report is transmitted in a single message, there will be multiple OBR segments in the message. The OBR-4 Universal Service ID will indicate what type of report is being transmitted in the following OBX segments (see above section 1.4.1 Kinds of Pathology Reports and section 1.4.2 Styles of Pathology Reporting).

N. The default style for pathology reporting will be narrative text (as has been done historically); when the OBR indicates that the report is narrative text, the following OBX segments contain the body of the report. The report may or may not be split into sections, with the separate sections identified with LOINC codes (see section 1.4.4 above). When the report is synoptic (either synoptically structured or fully encoded) and identified as synoptic with the LOINC code of 60568-3 Synoptic report in the OBR-4, then the first several OBX segments in the report contain the detail information about the reporting style, as follows:

- The first OBX in the report will indicate the type of synoptic template that was used to construct the report, indicated using the LOINC code 60573-3 Report template source in the OBX-3. If the synoptic report is constructed using the CAP Cancer Protocols templates, then the OBX-5 will contain "CAP Cancer Protocols". The value type in OBX-2 will be "ST".
- The second OBX in the report will contain the identifier of the specific template used to construct the report, using the LOINC code 60572-5 Report template ID encoded in the OBX-3. If the report has been constructed using the CAP Cancer Protocols, then the OBX-5 will contain the identifier of the specific template used. For the text-based CAP protocols, the value type in OBX-2 will be "ST" and the OBX-5 will contain the name of the template or protocol as published by CAP. For the eCC CAP checklist protocols, the value type in OBX-2 will be "CWE" and the value in the OBX-5 will contain the CKey value of the template ID in the first triplet. If the transmission of the local name of the template (if different from the CAP name) as displayed to the user when the report data is collected is desired, then the name should be populated in the ninth component ('original text') of the first triplet of the CWE in the OBX-5.
- The third OBX in the report will contain the version of the template used to construct the report, encoded using the LOINC code 60574-1 Report template version ID in the OBX-3 field. The value type OBX-2 will be "ST" and the OBX-5 will contain the string of the version as published by the template authors. When the CAP eCC templates are used, the version ID is a set of four decimal numbers separated by periods; this is encoded as a string. When the text-based CAP protocols are used, the version is the name of the template concatenated with four decimal numbers separated by periods, as published on the CAP website.

O. The Surgical Pathology Number, as received by a laboratory on a requisition form, will be populated in the OBR-2 Placer Order Number field, as it is received from the system requesting the Pathology study.

3.5 HL7 ENCODING OF SPECIFIC CHECKLIST PATTERNS

Some patterns published in the CAP eCC are quite complex, and application of the above set of encoding rules still leaves some ambiguities in the precise population of HL7 fields and components. These patterns, and their HL7 encoding, are discussed in this section.

3.5.1 Units of Measure Defined in a Separate Question/Answer Pair

This type of structure is only present in older releases of the CAP eCC (prior to February 2011). It does not exist in current and future releases; it is believed that no implementations using the older releases are currently in use requiring a solution to this pattern issue.

3.6 HL7 ENCODING OF LOCALIZATION AND CUSTOMIZATION OF CHECKLISTS

At the time of publication of this document, active discussion is still underway to fully define the processes and mechanisms for local modifications and customizations of published Checklists. As soon as broad agreement has been reached on these, an update will be released to the community to provide guidance in the local modification of checklists, and the encoding of the data sent to registries.

Also under discussion is a mechanism for broad dissemination of common customizations, as there is a sense that users can benefit greatly from being able to easily take advantage of the work done in checklist customization and localization by others in the community.

4 Appendix A: Code Tables

Note: Where only selected values are listed for HL7 tables, please refer to the HL7 Standard for complete listings. In this section, values are selected from standard codes where available. Values that are assigned by NIP are italicized.

User-defined Table 0001 - Sex [values suggested by HL7] (use in PID-8, NK1-15)

Value	Description
F	Female
M	Male
H	Hermaphrodite, Undetermined
T	Transsexual
O	Other
U	Unknown

User-defined Table 0002 - Marital status (use in PID-16)

Value	Description
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed

HL7-defined Table 0003 - Event type [only selected values listed] (use in MSH-9, second component)
Note that this shows only the Event Type for the Cancer Pathology Report Message described in this Guide.

Value	Description
R01	ORU/ACK - Unsolicited transmission of an observation message

User-defined Table 0004 - Patient class [values suggested by HL7] (use in PV1-2)

Value	Description
E	Emergency
I	Inpatient
N	Not Applicable
O	Outpatient
P	Pre-admit
R	Recurring Patient
B	Obstetrics

User-defined Table 0005 - Race [These values are compliant with OMB directive for combined format] (use in PID-10, NK1-35)

Value	Description
1002-5	American Indian or Alaska Native
2029-7	Asian Indian
2033-9	Cambodian
2036-2	Filipino
2037-0	Hmong
2039-6	Japanese
2040-4	Korean
2041-2	Laotian
2044-6	Pakistani
2046-1	Thai
2047-9	Vietnamese
2054-5	Black or African-American
2078-4	Polynesian
2079-2	Native Hawaiian
2080-0	Samoan
2081-8	Tahitian
2082-6	Tongan
2085-9	Micronesian
2087-5	Guamanian
2088-3	Chamorro
2100-6	Melanesian
2101-4	Fijian
2102-2	Papua New Guinean
2106-3	White
2131-1	Other Race
2500-7	Other Pacific Islander
U	Unknown race

User-defined Table 0006 - Religion [From HL7 Version 2.5] (use in PID-17)

Value	Description
EVC	Christian: Evangelical Church
COI	Christian: Church of God in Christ
COL	Christian: Congregational
COM	Christian: Community
COP	Christian: Other Pentecostal
COT	Christian: Other
CRR	Christian: Christian Reformed
EOT	Christian: Eastern Orthodox
ABC	Christian: American Baptist Church
ERL	Ethnic Religionist
CNF	Confucian
FRQ	Christian: Friends
FWB	Christian: Free Will Baptist
GRE	Christian: Greek Orthodox
HIN	Hindu
HOT	Hindu: Other
HSH	Hindu: Shaivites
HVA	Hindu: Vaishnavites
JAI	Jain

EPI	Christian: Episcopalian
BTA	Buddhist: Tantrayana
AGN	Agnostic
AME	Christian: African Methodist Episcopal Zion
AMT	Christian: African Methodist Episcopal
ANG	Christian: Anglican
AOG	Christian: Assembly of God
ATH	Atheist
BAH	Baha'i
BAP	Christian: Baptist
COG	Christian: Church of God
BOT	Buddhist: Other
COC	Christian: Church of Christ
BTH	Buddhist: Theravada
BUD	Buddhist
CAT	Christian: Roman Catholic
CFR	Chinese Folk Religionist
CHR	Christian
CHS	Christian: Christian Science
CMA	Christian: Christian Missionary Alliance
JOR	Jewish: Orthodox
BMA	Buddhist: Mahayana
SIK	Sikh
JCO	Jewish: Conservative
PRC	Christian: Other Protestant
PRE	Christian: Presbyterian
PRO	Christian: Protestant
QUA	Christian: Friends
REC	Christian: Reformed Church
REO	Christian: Reorganized Church of Jesus Christ-LDS
SAA	Christian: Salvation Army
OTH	Other
SHN	Shintoist
ORT	Christian: Orthodox
SOU	Christian: Southern Baptist
SPI	Spiritist
UCC	Christian: United Church of Christ
UMD	Christian: United Methodist
UNI	Christian: Unitarian
UNU	Christian: Unitarian Universalist
VAR	Unknown
WES	Christian: Wesleyan
SEV	Christian: Seventh Day Adventist
MOM	Christian: Latter-day Saints
WMC	Christian: Wesleyan Methodist
JOT	Jewish: Other
JRC	Jewish: Reconstructionist
JRF	Jewish: Reform
JRN	Jewish: Renewal
JWN	Christian: Jehovah's Witness
LMS	Christian: Lutheran Missouri Synod
LUT	Christian: Lutheran

PEN	Christian: Pentecostal
MET	Christian: Methodist
JEW	Jewish
MOS	Muslim
MOT	Muslim: Other
MSH	Muslim: Shiite
MSU	Muslim: Sunni
NAM	Native American
NAZ	Christian: Church of the Nazarene
NOE	Nonreligious
NRL	New Religionist
MEN	Christian: Mennonite

User-defined Table 0007 - Admission Type See the HL7 Standard version 2.5.1 for suggested values.

HL7 Table 0008 - Acknowledgment code See the HL7 Standard version 2.5.1 for suggested values.

User-defined Table 0010 - Physician ID (use in all XCN data types; including PV1-7, 8,9,17, RXA-10) [locally-defined] To perform conformance on this table, populate this table with local values. Each facility should establish a system of coding its reporting physicians. The National Provider Identifier (NPI) may be used for this purpose when it becomes available.

HL7-defined Table 0061 - Check digit scheme (use in all CX data types; including PID-2,3,4,18,21) Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0063 - Relationship (From HL7 Standard, Version 2.5.1) (use in NK1-3, NK1-31, IN1-17, IN2-62)

Value	Description
ASC	Associate
BRO	Brother
CGV	Care giver
CHD	Child
DEP	Handicapped dependent
DOM	Life partner
EMC	Emergency contact
EME	Employee
EMR	Employer
EXF	Extended family
FCH	Foster child
FND	Friend
FTH	Father
GCH	Grandchild
GRD	Guardian
GRP	Grandparent
MGR	Manager
MTH	Mother
NCH	Natural child
NON	None
OAD	Other adult
OTH	Other
OWN	Owner

Value	Description
PAR	Parent
SCH	Stepchild
SEL	Self
SIB	Sibling
SIS	Sister
SPO	Spouse
TRA	Trainer
UNK	Unknown
WRD	Ward of court

HL7- Defined Table 0065 - Specimen action code (Use in OBR-11)

Value	Description
A	Add ordered tests to the existing specimen
G	Generated order; reflex order
L	Lab to obtain specimen from patient
O	Specimen obtained by service other than Lab
P	Pending specimen; Order sent prior to delivery
R	Revised order
S	Schedule the tests specified below

HL7-defined Table 0070 - Specimen source codes (use in OBR-15)

Value	Description
ABS	Abscess
AMN	Amniotic fluid
ASP	Aspirate
BPH	Basophils
BIFL	Bile fluid
BLDA	Blood arterial
BBL	Blood bag
BLDC	Blood capillary
BPU	Blood product unit
BLDV	Blood venous
BON	Bone
BRTH	Breath (use EXHLD)
BRO	Bronchial
BRN	Burn
CALC	Calculus (= Stone)
CDM	Cardiac muscle
CNL	Cannula
CTP	Catheter tip
CSF	Cerebral spinal fluid
CVM	Cervical mucus
CVX	Cervix
COL	Colostrum
CBLD	Cord blood
CNJT	Conjunctiva
CUR	Curettage
CYST	Cyst

Value	Description
DIAF	Dialysis fluid
DOSE	Dose med or substance
DRN	Drain
DUFL	Duodenal fluid
EAR	Ear
EARW	Ear wax (cerumen)
ELT	Electrode
ENDC	Endocardium
ENDM	Endometrium
EOS	Eosinophils
RBC	Erythrocytes
EYE	Eye
EXHLD	Exhaled gas (= breath)
FIB	Fibroblasts
FLT	Filter
FIST	Fistula
FLU	Body fluid, unsp
GAS	Gas
GAST	Gastric fluid/contents
GEN	Genital
GENC	Genital cervix
GENL	Genital lochia
GENV	Genital vaginal
HAR	Hair
IHG	Inhaled Gas
IT	Intubation tube
ISLT	Isolate
LAM	Lamella
WBC	Leukocytes
LN	Line
LNA	Line arterial
LNV	Line venous
LIQ	Liquid NOS
LYM	Lymphocytes
MAC	Macrophages
MAR	Marrow
MEC	Meconium
MBLD	Menstrual blood
MLK	Milk
MILK	Breast milk
NAIL	Nail
NOS	Nose (nasal passage)
ORH	Other
PAFL	Pancreatic fluid
PAT	Patient
PRT	Peritoneal fluid /ascites
PLC	Placenta
PLAS	Plasma
PLB	Plasma bag
PLR	Pleural fluid (thoracentesis fld)

Value	Description
PMN	Polymorphonuclear neutrophils
PPP	Platelet poor plasma
PRP	Platelet rich plasma
PUS	Pus
RT	Route of medicine
SAL	Saliva
SEM	Seminal fluid
SER	Serum
SKN	Skin
SKM	Skeletal muscle
SPRM	Spermatozoa
SPT	Sputum
SPTC	Sputum - coughed
SPTT	Sputum - tracheal aspirate
STON	Stone (use CALC)
STL	Stool = Fecal
SWT	Sweat
SNV	Synovial fluid (Joint fluid)
TEAR	Tears
THRT	Throat
THRB	Thrombocyte (platelet)
TISS	Tissue
TISG	Tissue gall bladder
TLGI	Tissue large intestine
TLNG	Tissue lung
TISPL	Tissue placenta
TSMI	Tissue small intestine
TISU	Tissue ulcer
TUB	Tube NOS
ULC	Ulcer
UMB	Umbilical blood
UMED	Unknown medicine
URTH	Urethra
UR	Urine
URC	Urine clean catch
URT	Urine catheter
URNS	Urine sediment
USUB	Unknown substance
VOM	Vomitus
BLD	Whole blood
BDY	Whole body
WAT	Water
WICK	Wick
WND	Wound
WNDA	Wound abscess
WNDE	Wound exudate
WNDD	Wound drainage
XXX	To be specified

HL7-defined Table 0074 - Diagnostic service section ID (Use in OBR-24) [Refer to HL7 Standard Version 2.5.1, Appendix A]. Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

HL7-defined Table 0076 - Message type [only selected values listed, those that are defined within this Guide] (use in MSH-9, first component)

Value	Description
ACK	General Acknowledgment
ORU	Unsolicited observation results

HL7-defined Table 0078 - Abnormal flags (use in OBX-8)

Value	Description
L	Below low normal
H	Above high normal
LL	Below lower panic limits
HH	Above upper panic limits
<	Below absolute low-off instrument scale
>	Above absolute high-off instrument scale
N	Normal (applies to non-numeric results)
A	Abnormal (applies to non-numeric results)
AA	Very abnormal (applies to non-numeric units, analogous to panic limits for numeric units)
null	No range defined, or normal ranges don't apply
U	Significant change up
D	Significant change down
B	Better--use when direction not relevant
W	Worse--use when direction not relevant
For microbiology susceptibilities only:	
S	Susceptible*
R	Resistant*
I	Intermediate*
MS	Moderately susceptible*
VS	Very susceptible*
For categorical responses in cancer reporting (NAACCR extension, HL7 approval pending). Note that this list may be extended as additional categorical values are introduced with new tumor marker studies. For full interpretations of these values, refer to the published CAP cancer protocols.	
P+	Strongly positive
P-	Weakly positive
P	Positive
E	Equivocal
N	Negative
N-	Weakly or faintly negative
N+	Strongly negative

HL7-defined Table 0080 - Nature of Abnormal Testing (use in OBX-10)

Value	Description	Comment
A	An age-based population	
N	None - generic normal range	
R	A race-based population	
S	A sex-based population	
SP	Species	
B	Breed	
ST	Strain	

HL7-defined Table 0085 - Observation result status codes interpretation (use in OBX-11)

Value	Description
C	Record coming over is a correction and thus replaces a final result
D	Deletes the OBX record
F	Final results; Can only be changed with a corrected result
I	Specimen in lab; results pending
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought
O	Order detail description only (no result)
P	Preliminary results
R	Results entered - not verified
S	Partial results
X	Results cannot be obtained for this observation
U	Results status change to Final without re-transmitting results already sent as "preliminary." (e.g., radiology changes status from preliminary to final.)
W	Post original as wrong (e.g., transmitted for wrong patient)

User-defined Table 0088 Procedure Codes (use in OBR-44) **–** The examples below are one to one maps. The map direction is from SNOMED CT to CPT.

SNOMED CT	CPT
27083005 Immunoglobulin G subclass measurement (procedure)	82787 Gammaglobulin; immunoglobulin subclasses, (IgG1, 2, 3, or 4), each
252299004 pyruvate kinase deficiency spot test (procedure)	84220 Pyruvate kinase
252298007 glucose-6-phosphate dehydrogenase deficiency spot test (procedure)	82960 Glucose-6-phosphate dehydrogenase (G6PD); screen
25459007 coated particle agglutination inhibition assay (procedure)	86403 Particle agglutination; screen, each antibody
56241004 bone marrow biopsy, needle or trocar (procedure)	38221 Bone marrow biopsy, needle or trocar
81070005 bronchoscopy through tracheostomy with biopsy of lung (procedure)	31615 Tracheobronchoscopy through established tracheostomy incision

HL7-defined Table 0103 - Processing ID (use in MSH-11)

Value	Description
D	Debugging
P	Production
T	Training

HL7-defined Table 0104 - Version ID (use in MSH-12)

Value	Description	
2.0	Release 2.0	September 1988
2.0D	Demo 2.0	October 1988
2.1	Release 2.1	March 1990
2.2	Release 2.2	December 1994
2.3	Release 2.3	March 1997

2.3.1	Release 2.3.1	May 1999
2.4	Release 2.4	November 2000
2.5	Release 2.5	May 2003
2.5.1	Release 2.5.1	January 2007

HL7-defined Table 0105 - Source of comment (use in NTE-2)

Value	Description
L	Ancillary (filler) department is source of comment
P	Orderer (placer) is source of comment
O	Other system is source of comment

User-defined Table 0113 - Discharged to location No suggested values. To perform conformance on this table, populate this table with local values.

HL7-defined Table 0123 - Result status (use in OBR-25)

Value	Description
O	Order received; specimen not yet received
I	No results available; specimen received, procedure incomplete
S	No results available; procedure scheduled, but not done
A	Some, but not all, results available
P	Preliminary: A verified early result is available, final results not yet obtained
C	Correction to results
R	Results stored; not yet verified
F	Final results; results stored and verified. Can only be changed with a corrected result.
X	No results available; Order canceled.
Y	No order on record for this test. (Used only on queries)
Z	No record of this patient. (Used only on queries)

HL7-defined Table 0125 - Value type (use in OBX-2)

Value type	Description
AD	Address
CE	Coded Entry
CF	Coded Element With Formatted Values
CK	Composite ID With Check Digit
CN	Composite ID And Name
CP	Composite Price
CWE	Coded with Extensions
CX	Extended Composite ID With Check Digit
DT	Date
ED	Encapsulated Data
FT	Formatted Text (Display)
MO	Money
NM	Numeric
PN	Person Name
RP	Reference Pointer
SN	Structured Numeric
ST	String Data
TM	Time
TN	Telephone Number

Value type	Description
TS	Time Stamp (Date & Time)
TX	Text Data (Display)
XAD	Extended Address
XCN	Extended Composite Name And Number For Persons
XON	Extended Composite Name And Number For Organizations
XPN	Extended Person Name
XTN	Extended Telecommunications Number

User-defined Table 0131 – Contact Role – To perform conformance on this table, populate this table with local values.

HL7-defined Table 0136 - Yes/no indicator (use in PID-24,30)

Value	Description
Y	Yes
N	No

HL7-defined Table 0155 - Accept/application acknowledgment conditions (use in MSH-15 and 16) To perform conformance on this table, see the values defined in the HL7 Standard version 2.5.1, Chapter 2. Not used in NAACCR Cancer Registry messaging.

HL7-defined Table 0163 - Administrative site [only selected values listed] (use in RXR-2) Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0171 - Citizenship (Use in PID-26) [Locally defined]

User-defined Table 0172 - Veterans military status (Use in PID-27) [Locally defined]

HL7 Table 0177 Confidentiality Code (use in ORC-28)

Value	Description	Comment
V	Very restricted	
R	Restricted	
U	Usual control	
EMP	Employee	
UWM	Unwed mother	
VIP	Very important person or celebrity	
PSY	Psychiatric patient	
AID	AIDS patient	
HIV	HIV(+) patient	
ETH	Alcohol/drug treatment patient	

User-defined Table 0189 - Ethnic group [These values are compliant with the OMB directive] (use in PID-22)

Value	Description
2135-2	Hispanic or Latino
2137-8	Spaniard
2148-5	Mexican
2155-0	Central American
2165-9	South American
2178-2	Latin American

2180-8	Puerto Rican
2182-4	Cuban
2184-0	Dominican
2186-5	not Hispanic or Latino

HL7-defined Table 0190 - Address type (use in all XAD data types; including PID-11)

Value	**Description**
C	Current or Temporary
P	Permanent
M	Mailing
B	Firm/Business
O	Office
H	Home
N	Birth (nee)
F	Country of Origin
L	Legal Address
BLD	Birth delivery location [*use for birth facility*]
BR	Residence at birth [*use for residence at birth*]
RH	Registry home
BA	Bad address

HL7-defined Table 0191 – Type of referenced Data (use in ED and RP datatypes)

Value	Description
AP	Other application data, typically uninterpreted binary data (HL7 V2.3 and later)
AU	Audio data (HL7 V2.3 and later)
Audio	Audio data
FT	Formatted Text
IM	Image data (HL7 V2.3 and later)
multipart	MIME multipart package
NS	Non-scanned image
SD	Scanned Document
SI	Scanned Image
TEXT	Machine readable text document (HL7 V2.3.1 and later)

HL7-defined Table 0200 - Name type (use in all XCN, XPN data types; including PID-5,6,9)

Value	**Description**
A	Alias Name
L	Legal Name
D	Display Name
M	Maiden Name
C	Adopted Name
B	Name at Birth
I	Licensing Name
N	Nickname /”Call me” Name/Street Name
P	Name of Partner/Spouse
S	Coded Name (used to ensure anonymity)
T	Tribal Name
U	Unspecified

HL7-defined Table 0201 - Telecommunication use code (use in all XTN data types; including PID-13,14)

Value	**Description**

PRN	Primary Residence Number
ORN	Other Residence Number
WPN	Work Number
VHN	Vacation Home Number
ASN	Answering Service Number
EMR	Emergency Number
NET	Network (email) Address
BPN	Beeper Number

HL7-defined Table 0202 - Telecommunication equipment type (use in all XTN data types; including PID-13, 14)

Value	Description
PH	Telephone
FX	Fax
MD	Modem
CP	Cellular Phone
BP	Beeper
Internet	Internet Address: Use Only if Telecommunication Use Code is NET
X.400	X.400 email address: Use Only if Telecommunication Use Code is NET
TDD	Telecommunications Device for the Deaf
TTY	Teletypewriter

User-defined Table 0203 - Identifier type [values suggested by HL7] (use in all CX, XCN type codes; including PID-2,3,4,18,21)

Value	Description	Comment
AM	American Express	Deprecated and replaced by BC in v 2.5.
AN	Account number	An identifier that is unique to an account.
ANON	Anonymous identifier	An identifier for a living subject whose real identity is protected or suppressed Justification: For public health reporting purposes, anonymous identifiers are occasionally used for protecting patient identity in reporting certain results. For instance, a state health department may choose to use a scheme for generating an anonymous identifier for reporting a patient that has had a positive human immunodeficiency virus antibody test. Anonymous identifiers can be used in PID 3 by replacing the medical record number or other non-anonymous identifier. The assigning authority for an anonymous identifier would be the state/local health department.
ANC	Account number Creditor	Class: Financial A more precise definition of an account number: sometimes two distinct account numbers must be transmitted in the same message, one as the creditor, the other as the debitor. Kreditorenkontonummer
AND	Account number debitor	Class: Financial A more precise definition of an account number: sometimes two distinct account numbers must be transmitted in the same message, one as the creditor, the other as the debitor. Debitorenkontonummer

Value	Description	Comment
ANT	Temporary Account Number	Class: Financial Temporary version of an Account Number. Use Case: An ancillary system that does not normally assign account numbers is the first time to register a patient. This ancillary system will generate a temporary account number that will only be used until an official account number is assigned.
APRN	Advanced Practice Registered Nurse number	An identifier that is unique to an advanced practice registered nurse within the jurisdiction of a certifying board
BA	Bank Account Number	Class: Financial
BC	Bank Card Number	Class: Financial An identifier that is unique to a person's bank card. Replaces AM, DI, DS, MS, and VS beginning in v 2.5.
BR	Birth registry number	
BRN	Breed Registry Number	
CC	Cost Center number	Class: Financial Use Case: needed especially for transmitting information about invoices.
CY	County number	
DDS	Dentist license number	An identifier that is unique to a dentist within the jurisdiction of the licensing board
DEA	Drug Enforcement Administration registration number	An identifier for an individual or organization relative to controlled substance regulation and transactions. Use case: This is a registration number that identifies an individual or organization relative to controlled substance regulation and transactions. A DEA number has a very precise and widely accepted meaning within the United States. Surprisingly, the US Drug Enforcement Administration does not solely assign DEA numbers in the United States. Hospitals have the authority to issue DEA numbers to their medical residents. These DEA numbers are based upon the hospital's DEA number, but the authority rests with the hospital on the assignment to the residents. Thus, DEA as an Identifier Type is necessary in addition to DEA as an Assigning Authority.
DI	Diner's Club card	Deprecated and replaced by BC in v 2.5.
DFN	Drug Furnishing or prescriptive authority Number	An identifier issued to a health care provider authorizing the person to write drug orders Use Case: A nurse practitioner has authorization to furnish or prescribe pharmaceutical substances; this identifier is in component 1.
DL	Driver's license number	
DN	Doctor number	
DPM	Podiatrist license number	An identifier that is unique to a podiatrist within the jurisdiction of the licensing board.
DO	Osteopathic License number	An identifier that is unique to an osteopath within the jurisdiction of a licensing board.
DR	Donor Registration Number	
DS	Discover Card	Deprecated and replaced by BC in v 2.5.
EI	Employee number	A number that uniquely identifies an employee to an employer.
EN	Employer number	
FI	Facility ID	
GI	Guarantor internal identifier	Class: Financial
GL	General ledger number	Class: Financial
GN	Guarantor external identifier	Class: Financial
HC	Health Card Number	

Value	Description	Comment
JHN	Jurisdictional health number (Canada)	Class: Insurance 2 uses: a) UK jurisdictional CHI number; b) Canadian provincial health card number:
IND	Indigenous/Aboriginal	A number assigned to a member of an indigenous or aboriginal group outside of Canada.
LI	Labor and industries number	
LN	License number	
LR	Local Registry ID	
MA	Patient Medicaid number	Class: Insurance
MB	Member Number	An identifier for the insured of an insurance policy (this insured always has a subscriber), usually assigned by the insurance carrier. Use Case: Person is covered by an insurance policy. This person may or may not be the subscriber of the policy.
MC	Patient's Medicare number	Class: Insurance
MCD	Practitioner Medicaid number	Class: Insurance
MCN	Microchip Number	
MCR	Practitioner Medicare number	Class: Insurance
MD	Medical License number	An identifier that is unique to a medical doctor within the jurisdiction of a licensing board. Use Case: These license numbers are sometimes used as identifiers. In some states, the same authority issues all three identifiers, e.g., medical, osteopathic, and physician assistant licenses all issued by one state medical board. For this case, the CX data type requires distinct identifier types to accurately interpret component 1. Additionally, the distinction among these license types is critical in most health care settings (this is not to convey full licensing information, which requires a segment to support all related attributes).
MI	Military ID number	A number assigned to an individual who has had military duty, but is not currently on active duty. The number is assigned by the DOD or Veterans' Affairs (VA).
MR	Medical record number	An identifier that is unique to a patient within a set of medical records, not necessarily unique within an application.
MRT	Temporary Medical Record Number	Temporary version of a Medical Record Number Use Case: An ancillary system that does not normally assign medical record numbers is the first time to register a patient. This ancillary system will generate a temporary medical record number that will only be used until an official medical record number is assigned.
MS	MasterCard	Deprecated and replaced by BC in v 2.5.
NE	National employer identifier	In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.
NH	National Health Plan Identifier	Class: Insurance Used for the UK NHS national identifier. In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.
NI	National unique individual identifier	Class: Insurance In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.

Value	Description	Comment
NII	National Insurance Organization Identifier	Class: Insurance In Germany a national identifier for an insurance company. It is printed on the insurance card (health card). It is not to be confused with the health card number itself. Krankenkassen-ID der KV-Karte
NIIP	National Insurance Payor Identifier (Payor)	Class: Insurance In Germany the insurance identifier addressed as the payor. Krankenkassen-ID des Rechnungsempfängers Use case: a subdivision issues the card with their identifier, but the main division is going to pay the invoices.
NNxxx	National Person Identifier where the xxx is the ISO table 3166 3-character (alphabetic) country code	
NP	Nurse practitioner number	An identifier that is unique to a nurse practitioner within the jurisdiction of a certifying board.
NPI	National provider identifier	Class: Insurance In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.
OD	Optometrist license number	A number that is unique to an individual optometrist within the jurisdiction of the licensing board.
OEI	Orderer Employee Number	
PA	Physician Assistant number	An identifier that is unique to a physician assistant within the jurisdiction of a licensing board
PCN	Penitentiary/correctional institution Number	A number assigned to individual who is incarcerated.
PE	Living Subject Enterprise Number	An identifier that is unique to a living subject within an enterprise (as identified by the Assigning Authority).
PEN	Pension Number	
PI	Patient internal identifier	A number that is unique to a patient within an Assigning Authority.
PN	Person number	A number that is unique to a living subject within an Assigning Authority.
PNT	Temporary Living Subject Number	Temporary version of a Lining Subject Number.
PPN	Passport number	A unique number assigned to the document affirming that a person is a citizen of the country. In the US this number is issued only by the State Department.
PRC	Permanent Resident Card Number	
PRN	Provider number	A number that is unique to an individual provider, a provider group or an organization within an Assigning Authority. Use case: This allows PRN to represent either an individual (a nurse) or a group/organization (orthopedic surgery team).
PT	Patient external identifier	
QA	QA number	
REI	Recorder Employee Number	
RI	Resource identifier	A generalized resource identifier. Use Case: An identifier type is needed to accommodate what are commonly known as resources. The resources can include human (e.g. a respiratory therapist), non-human (e.g., a companion animal), inanimate object (e.g., an exam room), organization (e.g., diabetic education class) or any other physical or logical entity.

Value	Description	Comment
RPH	Pharmacist license number	An identifier that is unique to a pharmacist within the jurisdiction of the licensing board.
RN	Registered Nurse Number	An identifier that is unique to a registered nurse within the jurisdiction of the licensing board.
RR	Railroad Retirement number	
RRI	Regional registry ID	
SL	State license	
SN	Subscriber Number	Class: Insurance An identifier for a subscriber of an insurance policy which is unique for, and usually assigned by, the insurance carrier. Use Case: A person is the subscriber of an insurance policy. The person's family may be plan members, but are not the subscriber.
SR	State registry ID	
SS	Social Security number	
TAX	Tax ID number	
TN	Treaty Number/ (Canada)	A number assigned to a member of an indigenous group in Canada. Use Case: First Nation.
U	Unspecified identifier	
UPIN	Medicare/CMS (formerly HCFA)'s Universal Physician Identification numbers	Class: Insurance
VEI	Vaccinator Employee Number	
VN	Visit number	
VS	VISA	Deprecated and replaced by BC in v 2.5.
WC	WIC identifier	
WCN	Workers' Comp Number	
XX	Organization identifier	

User-defined Table 0204 – Organizational name type – To perform conformance on this table, populate with the values that will be used in the implementation. The following are HL7 suggested values.

Value	Description	Comment
A	Alias name	
L	Legal name	
D	Display name	
SL	Stock exchange listing name	

HL7-defined Table 0205 - Price type Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

HL7-defined Table 0207 - Processing mode (use in MSH-11)

Value	Description
A	Archive
R	Restore from archive
I	Initial load
T	Current processing, transmitted at intervals (scheduled or on demand)
<blank>	Not present (the default, meaning *current* processing)

HL7-defined Table 0211 - Alternate character sets [only selected values listed] (use in MSH-18) Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0212 - Nationality [ISO 3166 suggested by HL7; this table shows selected values only. Note that the table reflects only 3-letter codes. Two-letter and numeric codes are also available.]

Partial list of ISO 3166 country codes set is available at: ftp://ftp.ripe.net/iso3166-countrycodes.txt (use in PID-28; also use for country code in all XAD data types)

Value	Description
CAN	Canada
MEX	Mexico
USA	United States
UMI	United States Minor Outlying Islands

User-defined Table 0220 - Living arrangement [values suggested by HL7; *with NIP-suggested additions*] (use in NK1-21) Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

HL7-defined Table 0224 - Transport arranged (Use in OBR-41)
[Refer to HL7 Standard Version 2.5.1, Appendix A]

HL7-defined Table 0225 - Escort required (Use in OBR-42) [Refer to HL7 Standard Version 2.5.1, Appendix A]

User-defined Table 0288 - Census tract (use in all XAD; including PID-11)
For information about identifying census tracts, see www.census.gov/geo/www/tractez.html.

User-defined Table 0289 - County/parish (use in all XAD; including PID-11)
A complete list of FIPS 6-4 county codes is available at www.itl.nist.gov/div897/pubs/fip6-4.htm. According to the FIPS guidance, the 2-letter state code (available at www.itl.nist.gov/div897/pubs/fip5-2.htm) plus the numeric county code should be used (e.g., AZ001 represents Apache County, Arizona and AL001 represents Autauga County, Alabama).

HL7-defined Table 0291 – Subtype of referenced data (use in ED and RP datatypes)

Value	Description	Comment
BASIC	ISDN PCM audio data	
DICOM	Digital Imaging and Communications in Medicine	
FAX	Facsimile data	
GIF	Graphics Interchange Format	
HTML	Hypertext Markup Language	
JOT	Electronic ink data (Jot 1.0 standard)	
JPEG	Joint Photographic Experts Group	
Octet-stream	Uninterpreted binary data	
PICT	PICT format image data	
PostScript	PostScript program	
RTF	Rich Text Format	
SGML	Standard Generalized Markup Language (HL7 V2.3.1 and later)	
TIFF	TIFF image data	
x-hl7-cda-level-one	HL7 Clinical Document Architecture Level One document	
XML	Extensible Markup Language (HL7 V2.3.1 and later)	

User-defined Table 0296 - Language [ISO 639 suggested by HL7; selected 2-letter values listed from ISO 639:1988. The full set of ISO 639 Language Codes is available for purchase from www.ansi.org. Where ISO 2-letter codes are not available, 3-letter codes are given from the *Ethnologue*, available at www.sil.org/ethnologue/.] (use in MSH-19, PID-15.)

Value	Description
ASE	American Sign Language
ar	Arabic
hy	Armenian
bn	Bengali
km	Cambodian (Khmer)
CJD	Chamorro
YUH	Chinese, Cantonese
zh	Chinese, Mandarin
hr	Croatian
cs	Czech
nl	Dutch
en	English
fa	Farsi (Persian)
fr	French
de	German
el	Greek
hi	Hindi
BLU	Hmong
hu	Hungarian
ILO	Ilocano
id	Indonesian
it	Italian
ja	Japanese
ko	Korean
lo	Laotian
pl	Polish
pt	Portuguese
ro	Romanian
ru	Russian
sm	Samoan
sr	Serbian
sk	Slovak
so	Somali
es	Spanish
tl	Tagalog
th	Thai
to	Tongan
uk	Ukranian
ur	Urdu
vi	Vietnamese
yi	Yiddish
OTH	Other (must add text component of the CE field with description)

User-defined Table 0297 – CN ID Source – To perform conformance on this table, populate this table with local values.

HL7-defined Table 0299 – Encoding (use in the ED datatype)

Value	Description	Comment
A	No encoding - data are displayable ASCII characters.	
Hex	Hexadecimal encoding - consecutive pairs of hexadecimal digits represent consecutive single octets.	
Base64	Encoding as defined by MIME (Multipurpose Internet Mail Extensions) standard RFC 1521. Four consecutive ASCII characters represent three consecutive octets of binary data. Base64 utilizes a 65-character subset of US-ASCII, consisting of both the upper and lower case alphabetic characters, digits "0" through "9", "+", "/", and "=".	The Request For Comment (RFC) 1521 standard is available at: http://www.ietf.org/rfc/rfc1521.txt

User-defined Table 0300 – Namespace ID – (use in all HD) To perform conformance on this table, populate this table with local values.

HL7 Table 0301 - Universal ID type

Value	Description	Comment
CLIA	An identifier that is part of the namespace created by the Clinical Laboratory Improvement Amendments as published by CMS. For more information see http://www.cms.hhs.gov/clia/	
DNS	An Internet dotted name. Either in ASCII or as integers	
GUID	Same as UUID.	
HCD	The CEN Healthcare Coding Scheme Designator. (Identifiers used in DICOM follow this assignment scheme.)	
HL7	Reserved for future HL7 registration schemes	
ISO	An International Standards Organization Object Identifier	
L,M,N	These are reserved for locally defined coding schemes.	
Random	Usually a base64 encoded string of random bits. The uniqueness depends on the length of the bits. Mail systems often generate ASCII string "unique names," from a combination of random bits and system names. Obviously, such identifiers will not be constrained to the base64 character set.	
URI	Uniform Resource Identifier	
UUID	The DCE Universal Unique Identifier	
x400	An X.400 MHS format identifier	
x500	An X.500 directory name	

Note: X400, X500, and DNS are not technically universally valid for all time. Names can be de-registered from an existing user and registered to a new user.

User-defined Table 0302 – Point of care – To perform conformance on this table, populate this table with local values.

User-defined Table 0303 – Room – To perform conformance on this table, populate this table with local values.

User-defined Table 0304 – Bed – To perform conformance on this table, populate this table with local values.

User-defined Table 0305 – Person location type – (use in the PL datatype) To perform conformance on this table, populate this table with local values, or use the suggested values.

Value	Description	Comment
C	Clinic	
D	Department	

Value	Description	Comment
H	Home	
N	Nursing Unit	
O	Provider's Office	
P	Phone	
S	SNF	

User-defined Table 0306 – Location status – To perform conformance on this table, populate this table with local values.

User-defined Table 0307 – Building – To perform conformance on this table, populate this table with local values.

User-defined Table 0308 – Floor – To perform conformance on this table, populate this table with local values.

User-defined Table 0338 – Practitioner ID number type – To perform conformance on this table, populate this table with local values.

User-defined Table 0347 – State/Province (may be used in the Assigning Jurisdiction component of the CX datatype)

Value	Description	Comment
AB	Alberta (US and Canada)	
MI	Michigan (US)	
GA	Georgia (US)	
…		

HL7-defined Table 0353 - CWE statuses (may be used when a valid value is not present for a CWE field or component, but information about the null value is to be transmitted)

Code	Description	Comment
U	Unknown	
UASK	Asked but Unknown	
NAV	Not available	
NA	Not applicable	
NASK	Not asked	

HL7-defined Table 0354 - Message structure [only selected values used in this Guide are listed] (use in MSH-9, third component)

Value	Events
ORU_R01	R01

HL7 Table 0356 - Alternate character set handling scheme Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

HL7 Table 0357 - Message error condition codes

Value	Description	Comment
0	Message accepted	Success. Optional, as the AA conveys success. Used for systems that must always return a status code.
100	Segment sequence error	Error: The message segments were not in the proper order, or required segments are missing.
101	Required field missing	Error: A required field is missing from a segment
102	Data type error	Error: The field contained data of the wrong data type, e.g. an NM field contained "FOO".
103	Table value not found	Error: A field of data type ID or IS was compared against the corresponding table, and no match was found.
200	Unsupported message type	Rejection: The Message Type is not supported.
201	Unsupported event code	Rejection: The Event Code is not supported.
202	Unsupported processing id	Rejection: The Processing ID is not supported.
203	Unsupported version id	Rejection: The Version ID is not supported.
204	Unknown key identifier	Rejection: The ID of the patient, order, etc., was not found. Used for transactions *other than* additions, e.g. transfer of a non-existent patient.
205	Duplicate key identifier	Rejection: The ID of the patient, order, etc., already exists. Used in response to addition transactions (Admit, New Order, etc.).
206	Application record locked	Rejection: The transaction could not be performed at the application storage level, e.g., database locked.
207	Application internal error	Rejection: A catchall for internal errors not explicitly covered by other codes.

User-defined Table 0360 – Degree/license/certificate Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0361 - Sending/receiving application (use in MSH-3, MSH-5, FHS-3, FHS-5, BHS-3, BHS-5) [locally-defined]

User-defined Table 0362 – Facility – To perform conformance on this table, populate this table with local values.

User-defined Table 0363 – Namespace ID – (use in CNN, EI, XCN, and XON) To perform conformance on this table, populate this table with local values.

User-defined Table 0364 - Comment type (use in NTE-4)

Value	Description
PI	Patient Instructions
AI	Ancillary Instructions
GI	General Instructions
1R	Primary Reason
2R	Secondary Reason
GR	General Reason
RE	Remark
DR	Duplicate/Interaction Reason

User-defined Table 0376 – Special Handling Code Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0396 - Coding system [Only selected values listed] [From HL7 Standard, Version 2.5.1] (Use in OBR-4, 26, OBX-3, 5,17) For the most current version of this table, see the page on Table 0396 at http://www.hl7.org under Tools and Resources.

Value	Description	Comment / Source	Category
99zzz or L	Local general code (where z is an alphanumeric character)	Locally defined codes for purpose of sender or receiver. Local codes can be identified by L (for backward compatibility) or 99zzz (where z is an alphanumeric character).	General code
ACR	American College of Radiology finding codes	Index for Radiological Diagnosis Revised, 3rd Edition 1986, American College of Radiology, Reston, VA.	Specific Non-Drug Code
ART	WHO Adverse Reaction Terms	WHO Collaborating Centre for International Drug Monitoring, Box 26, S-751 03, Uppsala, Sweden.	Drug code
ANS+	HL7 set of units of measure	HL7 set of units of measure based upon ANSI X3.50 - 1986, ISO 2988-83, and US customary units / see chapter 7, section 7.4.2.6.	
AS4	ASTM E1238/ E1467 Universal	American Society for Testing & Materials and CPT4 (see Appendix X1 of Specification E1238 and Appendix X2 of Specification E1467).	Specific Non-Drug Code
AS4E	AS4 Neurophysiology Codes	ASTM's diagnostic codes and test result coding/grading systems for clinical neurophysiology. See ASTM Specification E1467, Appendix 2.	Specific Non-Drug Code
ATC	American Type Culture Collection	Reference cultures (microorganisms, tissue cultures, etc.), related biological materials and associated data. American Type Culture Collection, 12301 Parklawn Dr, Rockville MD, 20852. (301) 881-2600. http://www.atcc.org	Specific Non-Drug Code
C4	CPT-4	American Medical Association, P.O. Box 10946, Chicago IL 60610.	Specific Non-Drug Code
C5	CPT-5	(under development – same contact as above)	Specific Non-Drug Code
CAPECC	College of American Pathologists Electronic Cancer Checklist Code	Entry identifiers from the electronic checklist format	Specific Non-Drug Code
CAS	Chemical abstract codes	These include unique codes for each unique chemical, including all generic drugs. The codes do not distinguish among different dosing forms. When multiple equivalent CAS numbers exist, use the first one listed in USAN. USAN 1990 and the USP dictionary of drug names, William M. Heller, Ph.D., Executive Editor, United States Pharmacopeial Convention, Inc., 12601 Twinbrook Parkway, Rockville, MD 20852.	Drug code
CCC	Clinical Care Classification system	Clinical Care Classification System (formerly Home Health Care Classification system) codes. The Clinical Care Classification (CCC) consists of two terminologies: CCC of Nursing Diagnose and CCC of Nursing Interventions both of which are classified by 21 Care Components. Virginia Saba, EdD, RN; Georgetown University School of Nursing; Washington, DC.	
CD2	CDT-2 Codes	American Dental Association's Current Dental Terminology (CDT-2) code. American Dental Association, 211 E. Chicago Avenue,. Chicago, Illinois 60611.	Specific Non-Drug Code
CDCA	CDC Analyte Codes	As above, for CDCM	
CDCM	CDC Methods/Instruments Codes	Public Health Practice Program Office, Centers for Disease Control and Prevention, 4770 Buford Highway, Atlanta, GA, 30421. Also available via FTP: `ftp.cdc.gov/pub/laboratory _info/CLIA` and Gopher: `gopher.cdc.gov:70/11/laboratory info/CLIA`	Drug code
CDS	CDC Surveillance	CDC Surveillance Codes. For data unique to specific public health surveillance requirements. Epidemiology Program Office, Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA, 30333. (404) 639-3661.	Specific Non-Drug Code
CE (obsolete)	CEN ECG diagnostic codes	CEN ECG diagnostic codes – (Obsolete, retained for backwards compatibility only. See the entry for the MDC coding system.)	Specific Non-Drug Code
CLIA	CLIA Numbers	OBX-15 Producer's Reference requires a CLIA number but is a coded datatype, thus this entry needs to be in this table.	Specific Non-Drug Code
CLP	CLIP	Simon Leeming, Beth Israel Hospital, Boston MA. Codes for radiology reports.	Specific Non-Drug Code
CPTM	CPT Modifier Code	Available for the AMA at the address listed for CPT above. These codes are found in Appendix A of CPT 2000 Standard Edition. (CPT 2000 Standard Edition, American Medical Association, Chicago, IL).	Specific Non-Drug Code

Value	Description	Comment / Source	Category
CST	COSTART	International coding system for adverse drug reactions. In the USA, maintained by the FDA, Rockville, MD.	Drug code
CVX	CDC Vaccine Codes	National Immunization Program, Centers for Disease Control and Prevention, 1660 Clifton Road, Atlanta, GA, 30333	Drug code
DCM	DICOM Controlled Terminology	Codes defined in DICOM Content Mapping Resource. Digital Imaging and Communications in Medicine (DICOM). NEMA Publication PS-3.16 National Electrical Manufacturers Association (NEMA). Rosslyn, VA, 22209. Available at: http://medical.nema.org	Specific Non-Drug Code
E	EUCLIDES	Available from Euclides Foundation International nv, Excelsiorlaan 4A, B-1930 Zaventem, Belgium; Phone: 32 2 720 90 60.	Specific Non-Drug Code
E5	Euclides quantity codes	Available from Euclides Foundation International nv (see above)	Specific Non-Drug Code
E6	Euclides Lab method codes	Available from Euclides Foundation International nv, Excelsiorlaan 4A, B-1930 Zaventem, Belgium; Phone: 32 2 720 90 60.	Specific Non-Drug Code
E7	Euclides Lab equipment codes	Available from Euclides Foundation International nv (see above)	Specific Non-Drug Code
ENZC	Enzyme Codes	Enzyme Committee of the International Union of Biochemistry and Molecular Biology. Enzyme Nomenclature: Recommendations on the Nomenclature and Classification of Enzyme-Catalysed Reactions. London: Academic Press, 1992.	Specific Non-Drug Code
EPASRS	EPA Substance Registry System		Specific Non-Drug Code
FDAUNII		FDA Unique Ingredient Identifier	
FDDC	First DataBank Drug Codes	National Drug Data File. Proprietary product of First DataBank, Inc. (800) 633-3453, or http://www.firstdatabank.com.	Drug code
FDDX	First DataBank Diagnostic Codes	Used for drug-diagnosis interaction checking. Proprietary product of First DataBank, Inc. As above for FDDC.	Drug code
FDK	FDA K10	Dept. of Health & Human Services, Food & Drug Administration, Rockville, MD 20857. (device & analyte process codes).	Specific Non-Drug Code
GDRG2004	G-DRG German DRG Codes v 2004	German Handbook for DRGs. The THREE versions, "2004" , "2005" and "2006" are active	
GDRG2005	G-DRG German DRG Codes v 2005	German Handbook for DRGs. The THREE versions, "2004" , "2005" and "2006" are active	
GDRG2006	G-DRG German DRG Codes v 2006	German Handbook for DRGs. The THREE versions, "2004" , "2005" and "2006" are active	
GMDC2004	German Major Diagnostic Codes v 1004	German Major Diagnostic Codes version "2004"	
GMDC2005	German Major Diagnostic Codes v2005		
GMDC2006	German Major v2006 Diagnostic Codes		
HB	HIBCC	Health Industry Business Communications Council, 5110 N. 40th St., Ste 120, Phoenix, AZ 85018.	Specific Non-Drug Code
HCPCS	CMS (formerly HCFA) Common Procedure Coding System	HCPCS: contains codes for medical equipment, injectable drugs, transportation services, and other services not found in CPT4. http://www.cms.hhs.gov/MedHCPCSGenInfo/	Specific Non-Drug Code
HCPT	Health Care Provider Taxonomy	The Blue Cross and Blue Shield Association will act as the administrator of the Provider Taxonomy so that the code structure is classified as external to X12. Ongoing maintenance is solely the responsibility of Workgroup 15 (Provider Information) within ANSI ASC X12N, or the work group's successor. Blue Cross and Blue Shield Association, 225 North Michigan Avenue, Chicago, IL 60601, Attention: ITS Department, ECNS Unit. http://www.wpc-edi.com/taxonomy/ Primary distribution is the responsibility of Washington Publishing Company, through its World Wide Web Site, at the same web site.	Specific Non-Drug Code
HHC	Home Health Care	Home Health Care Classification System; Virginia Saba, EdD, RN; Georgetown University School of Nursing; Washington, DC. Superceded by 'CCC' (see above); this entry is retained for backward-compatibility.	Specific Non-Drug Code

Value	Description	Comment / Source	Category
HI	Health Outcomes	Health Outcomes Institute codes for outcome variables available (with responses) from Stratis Health (formerly Foundation for Health Care Evaluation and Health Outcomes Institute), 2901 Metro Drive, Suite 400, Bloomington, MN, 55425-1525; (612) 854-3306 (voice); (612) 853-8503 (fax); dziegen@winternet.com. See examples in the Implementation Guide.	Specific Non-Drug Code
HL7nnnn	HL7 Defined Codes where nnnn is the HL7 table number	Health Level Seven where nnnn is the HL7 table number	General code
HOT	Japanese Nationwide Medicine Code		
HPC	CMS (formerly HCFA Procedure Codes (HCPCS)	Health Care Financing Administration (HCFA) Common Procedure Coding System (HCPCS) including modifiers.[1]	Specific Non-Drug Code
I10	ICD-10	World Health Publications, Albany, NY.	Specific Non-Drug Code
I10P	ICD-10 Procedure Codes	Procedure Coding System (ICD-10-PCS.) See http://www.cms.hhs.gov/ICD9ProviderDiagnosticCodes/08_ICD10.asp for more information.	Specific Non-Drug Code
I9	ICD9	World Health Publications, Albany, NY.	Specific Non-Drug Code
I9C	ICD-9CM	International Classification Of Diseases-9-CM, (1979) Commission on Professional and Hospital Activities, 1968 Green Road, Ann Arbor, MI 48105 (includes all procedures and diagnostic tests).	Specific Non-Drug Code
I9CDX	ICD-9CM Diagnosis codes	Indicates codes from ICD-9-CM drawn from Volumes 1 and 2, which cover diagnosis codes only.	
I9CP	ICD-9CM Procedure codes	Indicates codes from ICD-9-CM drawn from Volume 3, which covers procedure codes only.	
IBT	ISBT	Retained for backward compatibility only as of v 2.5. This code value has been superceded by IBTnnnn. International Society of Blood Transfusion. Blood Group Terminology 1990. VOX Sanquines 1990 58(2):152-169.	Specific Non-Drug Code
IBTnnnn	ISBT 128 codes where nnnn specifies a specific table within ISBT 128.	International Society of Blood Transfusion. (specific contact information will be supplied to editor.) The variable suffix (nnnn) identifies a specific table within ISBT 128.	Specific Non-Drug Code
I10G2004	ICD 10 Germany 2004	Three code sets exist I10G2004, I10G2005, I10G2006	
I10G2005	ICD 10 Germany 2005	Three code sets exist I10G2004	
I10G2006	ICD 10 Germany 2006	Three code sets exist I10G2004	
IC2	ICHPPC-2	International Classification of Health Problems in Primary Care, Classification Committee of World Organization of National Colleges, Academies and Academic Associations of General Practitioners (WONCA), 3rd edition. An adaptation of ICD9 intended for use in General Medicine, Oxford University Press.	Specific Non-Drug Code
ICD10AM	ICD-10 Australian modification		
ICD10CA	ICD-10 Canada		
ICDO	International Classification of Diseases for Oncology	International Classification of Diseases for Oncology, 2nd Edition. World Health Organization: Geneva, Switzerland, 1990. Order from: College of American Pathologists, 325 Waukegan Road, Northfield, IL, 60093-2750. (847) 446-8800.	Specific Non-Drug Code
ICDO2	International Classification of Diseases for Oncology second edition	International Classification of Diseases for Oncology, 2nd Edition. World Health Organization: Geneva, Switzerland, 1990. Order from: College of American Pathologists, 325 Waukegan Road, Northfield, IL, 60093-2750. (847) 446-8800.	
ICDO3	International Classification of Diseases for Oncology third edition	International Classification of Diseases for Oncology, 2nd Edition. World Health Organization: Geneva, Switzerland, 1990. Order from: College of American Pathologists, 325 Waukegan Road, Northfield, IL, 60093-2750. (847) 446-8800.	
ICS	ICCS	Commission on Professional and Hospital Activities, 1968 Green Road, Ann Arbor, MI 48105.	Specific Non-Drug Code

Value	Description	Comment / Source	Category
ICSD	International Classification of Sleep Disorders	International Classification of Sleep Disorders Diagnostic and Coding Manual, 1990, available from American Sleep Disorders Association, 604 Second Street SW, Rochester, MN 55902	Specific Non-Drug Code
ISOnnnn	ISO Defined Codes where nnnn is the ISO table number	International Standards Organization where nnnn is the ISO table number	General code
ISO+	ISO 2955.83 (units of measure) with HL7 extensions	See chapter 7, section 7.4.2.6	
ITIS	Integrated Taxonomic Information System	Source= www.itis.gov. This is a taxonomic hierarchy for living organisms.	
IUPP	IUPAC/IFCC Property Codes	International Union of Pure and Applied Chemistry/International Federation of Clinical Chemistry. The Silver Book: Compendium of terminology and nomenclature of properties in clinical laboratory sciences. Oxford: Blackwell Scientific Publishers, 1995. Henrik Olesen, M.D., D.M.Sc., Chairperson, Department of Clinical Chemistry, KK76.4.2, Rigshospitalet, University Hospital of Copenhagen, DK-2200, Copenhagen. http://www.iupac.org/objID/Source/sou20545143408790796041488	Specific Non-Drug Code
IUPC	IUPAC/IFCC Component Codes	Codes used by IUPAC/IFF to identify the component (analyte) measured. Contact Henrik Olesen, as above for IUPP.	Specific Non-Drug Code
JC8	Japanese Chemistry	Clinical examination classification code. Japan Association of Clinical Pathology. Version 8, 1990. A multiaxial code including a subject code (e.g., Rubella = 5f395, identification code (e.g., virus ab IGG), a specimen code (e.g., serum =023) and a method code (e.g., ELISA = 022)	withdrawn
JC10	JLAC/JSLM, nationwide laboratory code	Source: Classification &Coding for Clinical Laboratory. Japanese Society of Laboratory Medicine(JSLM, Old:Japan Society of Clinical Pathology). Version 10, 1997. A multiaxial code including a analyte code (e.g., Rubella = 5f395), identification code (e.g., virus ab IGG=1431), a specimen code (e.g., serum =023) and a method code (e.g., ELISA = 022)	
JJ1017	Japanese Image Examination Cache		
LB	Local billing code	Local billing codes/names (with extensions if needed).	General code
LN	Logical Observation Identifier Names and Codes (LOINC®)	Regenstrief Institute, c/o LOINC, 1050 Wishard Blvd., 5th floor, Indianapolis, IN 46202. 317/630-7433. Available from the Regenstrief Institute server at http://www.Regenstrief.org/loinc/loinc.htm. Also available via HL7 file server: FTP/Gopher (www.mcis.duke.edu/standards/termcode/loinclab and www.mcis.duke.edu/standards/termcode/loinclin) and World Wide Web (http://www.mcis.duke.edu/standards/termcode/loincl.htm). January 2000 version has identifiers, synonyms and cross-reference codes for reporting over 26,000 laboratory and related observations and 1,500 clinical measures.	Specific Non-Drug Code
MCD	Medicaid	Medicaid billing codes/names.	Specific Non-Drug Code
MCR	Medicare	Medicare billing codes/names.	Specific Non-Drug Code
MDC	Medical Device Communication	EN ISO/IEEE 11073-10101 Health informatics – Point-of-care medical device communication - Nomenclature	Specific Non-Drug Code
MDDX	Medispan Diagnostic Codes	Codes Used for drug-diagnosis interaction checking. Proprietary product. Hierarchical drug codes for identifying drugs down to manufacturer and pill size. MediSpan, Inc., 8425 Woodfield Crossing Boulevard, Indianapolis, IN 46240. Tel: (800) 428-4495. URL: http://www.medispan.com/Products/index.aspx?cat=1. As above for MGPI.	Drug code
MEDC	Medical Economics Drug Codes	Proprietary Codes for identifying drugs. Proprietary product of Medical Economics Data, Inc. (800) 223-0581.	Drug code

Value	Description	Comment / Source	Category
MEDR	Medical Dictionary for Drug Regulatory Affairs (MEDDRA)	Patrick Revelle, Director MSSO 12011 Sunset Hills Road, VAR1/7B52 Reston, VA 20190 Patrick.Revelle@ngc.com http://www.meddramsso.com/index.asp	Drug code
MEDX	Medical Economics Diagnostic Codes	Used for drug-diagnosis interaction checking. Proprietary product of Medical Economics Data, Inc. (800) 223-0581.	Drug code
MGPI	Medispan GPI	Medispan hierarchical drug codes for identifying drugs down to manufacturer and pill size. Proprietary product of MediSpan, Inc., 8425 Woodfield Crossing Boulevard, Indianapolis, IN 46240. Tel: (800) 428-4495.	Drug code
MVX	CDC Vaccine Manufacturer Codes	As above, for CVX	Drug code
NCPDPnnnnsss	NCPDP code list for data element nnnn [as used in segment sss]	NCPDP maintain code list associated with the specified Data Element (nnnn) and Segment (sss). The Segment portion is optional if there is no specialization of the Data Element codes between segments. Examples: NCPDP1131RES = code set defined for NCPDP data element 1131 as used in the RES segment (Code List Qualifier – Response Code) NCPDP1131STS = code set defined for NCPDP data element 1131 as used in the STS segment (Code List Qualifier – Reject Code) NCPDP9701 = code set defined for NCPDP data element 9701 (Individual Relationship, Coded). No specialization to a segment exists for this data element. National Council for Prescription Drug Programs, 924Ø East Raintree Drive, Scottsdale, AZ 8526Ø. Phone: (48Ø) 477-1ØØØ Fax: (48Ø) 767-1Ø42 e-mail: ncpdp@ncpdp.org www.ncpdp.org	
NDA	NANDA	North American Nursing Diagnosis Association, Philadelphia, PA.	Specific Non-Drug Code
NDC	National drug codes	These provide unique codes for each distinct drug, dosing form, manufacturer, and packaging. (Available from the National Drug Code Directory, FDA, Rockville, MD, and other sources.)	Drug code
NIC	Nursing Interventions Classification	Iowa Intervention Project, College of Nursing, University of Iowa, Iowa City, Iowa	Specific Non-Drug Code
NPI	National Provider Identifier	Health Care Finance Administration, US Dept. of Health and Human Services, 7500 Security Blvd., Baltimore, MD 21244.	Specific Non-Drug Code
NUBC	National Uniform Billing Committee Code		
OHA	Omaha System	Omaha Visiting Nurse Association, Omaha, NB.	Specific Non-Drug Code
OHA	Omaha	Omaha Visiting Nurse Association, Omaha, NB.	Specific Non-Drug Code
O301	German Procedure Codes	Source: OPS Operationen- und Prozedurenschlussel. Three versions are active.	
O3012004	OPS Germany 2004	Source: OPS Operationen- und Prozedurenschlussel. Three versions are active	
O3012005	OPS Germany 2005	Source: OPS Operationen- und Prozedurenschlussel. Three versions are active	
O3012006	Ops Germany 2006	Source: OPS Operationen- und Prozedurenschlussel. Three versions are active	
POS	POS Codes	HCFA Place of Service Codes for Professional Claims (see http://www.cms.hhs.gov/PlaceofServiceCodes).	Specific Non-Drug Code
RC	Read Classification	The Read Clinical Classification of Medicine, Park View Surgery, 26 Leicester Rd., Loughborough LE11 2AG (includes drug procedure and other codes, as well as diagnostic codes).	Specific Non-Drug Code
SCT	SNOMED Clinical Terms	SNOMED-CT concept identifier codes. SNOMED International, I325 Waukegan Rd, Northfield, IL, 60093, +1 800-323-4040, mailto:snomed@cap.org http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html	Specific Non-Drug Code

Value	Description	Comment / Source	Category
SCT2	SNOMED Clinical Terms alphanumeric codes	Used to indicate that the code value is the legacy-style SNOMED alphanumeric codes, rather than the concept identifier codes. SNOMED International, I325 Waukegan Rd, Northfield, IL, 60093, +1 800-323-4040, mailto:snomed@cap.org http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html	
SDM	SNOMED- DICOM Microglossary	College of American Pathologists, Skokie, IL, 60077-1034. (formerly designated as 99SDM).	Specific Non-Drug Code
SNM	Systemized Nomenclature of Medicine (SNOMED)	Systemized Nomenclature of Medicine, 2nd Edition 1984 Vols 1, 2, College of American Pathologists, Skokie, IL.	Specific Non-Drug Code
SNM3	SNOMED International	SNOMED International, 1993 Vols 1-4, College of American Pathologists, Skokie, IL, 60077-1034.	Specific Non-Drug Code
SNT	SNOMED topology codes (anatomic sites)	College of American Pathologists, 5202 Old Orchard Road, Skokie, IL 60077-1034.	Specific Non-Drug Code
UC	UCDS	Uniform Clinical Data Systems. Ms. Michael McMullan, Office of Peer Review Health Care Finance Administration, The Meadows East Bldg., 6325 Security Blvd., Baltimore, MD 21207; (301) 966 6851.	Specific Non-Drug Code
UCUM	UCUM code set for units of measure(from Regenstrief)	Added by motion of VOCABULARY T.C. 20060308 14-0-3	
UMD	MDNS	Universal Medical Device Nomenclature System. ECRI, 5200 Butler Pike, Plymouth Meeting, PA 19462 USA. Phone: 215-825-6000, Fax: 215-834-1275.	Device code
UML	Unified Medical Language	National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894.	Specific Non-Drug Code
UPC	Universal Product Code	The Uniform Code Council. 8163 Old Yankee Road, Suite J, Dayton, OH 45458; (513) 435 3070	Specific Non-Drug Code
UPIN	UPIN	Medicare/CMS 's (formerly HCFA) universal physician identification numbers, available from Health Care Financing Administration, U.S. Dept. of Health and Human Services, Bureau of Program Operations, 6325 Security Blvd., Meadows East Bldg., Room 300, Baltimore, MD 21207	Specific Non-Drug Code
USPS	United States Postal Service	Two Letter State and Possession Abbreviations are listed in Publication 28, Postal Addressing Standards which can be obtained from Address Information Products, National Address Information Center, 6060 Primacy Parkway, Suite 101, Memphis, Tennessee 38188-0001 Questions of comments regarding the publication should be addressed to the Office of Address and Customer Information Systems, Customer and Automation Service Department, US Postal Service, 475 Lenfant Plaza SW Rm 7801, Washington, DC 20260-5902	Specific Non-Drug Code
W1	WHO record # drug codes (6 digit)	World Health organization record number code. A unique sequential number is assigned to each unique single component drug and to each multi-component drug. Eight digits are allotted to each such code, six to identify the active agent, and 2 to identify the salt, of single content drugs. Six digits are assigned to each unique combination of drugs in a dispensing unit. The six digit code is identified by W1, the 8 digit code by W2.	Drug code
W2	WHO record # drug codes (8 digit)	World Health organization record number code. A unique sequential number is assigned to each unique single component drug and to each multi-component drug. Eight digits are allotted to each such code, six to identify the active agent, and 2 to identify the salt, of single content drugs. Six digits are assigned to each unique combination of drugs in a dispensing unit. The six digit code is identified by W1, the 8 digit code by W2.	Drug code
W4	WHO record # code with ASTM extension	With ASTM extensions (see Implementation Guide), the WHO codes can be used to report serum (and other) levels, patient compliance with drug usage instructions, average daily doses and more (see Appendix X1 the Implementation Guide).	Drug code
WC	WHO ATC	WHO's ATC codes provide a hierarchical classification of drugs by therapeutic class. They are linked to the record number codes listed above.	Drug code
X12DEnnnn	ASC X12 Code List nnnn	Code list associated with X12 Data Element nnnn. Example:: X12DE738 – code set defined for X12 data element 738 (Measurement Qualifier) The Accredited Standards Committee (ASC) X12 www.x12.org	General Codes

Value	Description	Comment / Source	Category
[1]	The HCPCS code is divided into three "levels." Level I includes the entire CPT-4 code by reference. Level II includes the American Dental Association's Current Dental Terminology (CDT-2) code by reference. Level II also includes the genuine HCPCS codes, approved and maintained jointly by the Alpha-Numeric Editorial Panel, consisting ofCMS, the Health Insurance Association of America, and the Blue Cross and Blue Shield Association. Level III are codes developed locally by Medicare carriers. The HCPCS modifiers are divided into the same three levels, I being CPT-4 modifiers, II CDT-2 and genuine HCPCS modifiers, and III being locally agreed modifiers.		
The genuine HCPCS codes and modifiers of level II can be found at https://www.cms.gov/HCPCSReleaseCodeSets. CMS distributes the HCPCS codes via the National Technical Information Service (NTIS, www.ntis.gov) and NTIS distribution includes the CDT-2 part of HCPCS Level II, but does not include the CPT-4 part (Level I). CMS may distribute the CPT-4 part to its contractors.			

HL7-defined Table 0398 – Continuation Style Code

Value	Description	Comment
F	Fragmentation	
I	Interactive Continuation	

HL7 Table 0399 – Country Code - Use 3-character (alphabetic) form of ISO 3166-1. More information may be found at http://www.iso.org/iso/country_codes.htm.

HL7 Table 0444 – Name Assembly Order Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0445 - Identity Reliability Code

Value	Description	Comment
US	Unknown/Default Social Security Number	
UD	Unknown/Default Date of Birth	
UA	Unknown/Default Address	
AL	Patient/Person Name is an Alias	

User-defined Table 0448 – Name Context – To perform conformance on this table, populate this table with local values.

User-defined Table 0465 – Name/address representation (use in all XPN, XAD data types) (PID-5, 6, 9, 11) Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

User-defined Table 0476 – Medically Necessary Duplicate Procedure Reason – To perform conformance on this table, populate this table with local values.

HL7 Table 0487 –Specimen Type

Note that in Cancer Registry reporting using Synoptic Reports, details of the specimen are generally carried in OBX-3/OBX-5 pairs as captured on the CAP Checklists. In these cases, much of the detail carried in this table of Specimen types is redundant, and often will not match the types and details recorded in the checklists and processed by Cancer registries. The code contents of this table has been abbreviated to only those Specimen type codes that are appropriate for Cancer Registry messaging.

NAACCR Usage: If the laboratory does not specifically code this field, instead using the 'nature of specimen' report in the OBX, then the entry OTH – Source other may be used instead.

Value	Description	Comment
ASP	Aspirate	
WB	Blood, Whole	Blood
BON	Bone	
BNMRW	Bone marrow	
BRSH	Brush	Product; Brush or brushing (these may be 2 separate entries as in a physical brush or a portion thereof vs the substance obtained after a surface has been brushed)
FLUID	Fluid	Fluid
MUCOS	Mucosa	Condition
NEDL	Needle	Device
PLAS	Plasma	Blood
SER	Serum	
OTH	Source, Other	
SPT	Sputum	
TISS	Tissue	
UR	Urine	
WASH	Wash	Product
WASI	Washing, e.g. bronchial washing	Product

HL7-defined Table 0488 – Specimen Collection Method Not used in NAACCR Cancer Registry messaging. See the HL7 Standard version 2.5.1 for defined values.

HL7 Table 0490 – Specimen Reject Reason

Value	Description	Comment
EX	Expired	
QS	Quantity not sufficient	
RB	Broken container	
RC	Clotting	
RD	Missing collection date	
RA	Missing patient ID number	
RE	Missing patient name	
RH	Hemolysis	
RI	Identification problem	
RM	Labeling	
RN	Contamination	
RP	Missing phlebotomist ID	
RR	Improper storage	
RS	Name misspelling	

HL7 Table 0494 – Specimen Child Role

Value	Description	Comment
A	Aliquot	
C	Component	
M	Modified from original specimen	

User-defined Table 0507 – Observation Result Handling – Suggested values from HL7. To perform conformance on this table, populate this table with local values.

Value	Description	Comment
F	Film with Patient	
N	Notify Provider when ready	

HL7 Table 0516 – Error severity

Value	Description	Comment
W	Warning	Transaction successful, but there may issues
I	Information	Transaction was successful but includes information e.g., inform patient
E	Error	Transaction was unsuccessful

User-defined Table 0530 – Organization, agency, department – (may be used for the Assigning Agency or Department component of the CX datatype) Suggested HL7 values. To perform conformance on this table, populate this table with local values.

Value	Description	Comment
AE	American Express	
DEA	Drug Enforcement Agency	The US Drug Enforcement Administration does not solely assign DEA numbers in the United States. Hospitals have the authority to issue DEA numbers to their medical residents. These DEA numbers are based upon the hospital's DEA number, but the authority rests with the hospital on the assignment to the residents. Thus, DEA as an Assigning Authority is necessary in addition to DEA as an Identifier Type.
DOD	Department of Defense	In some countries e.g., the US, more than one department may issue a military identifier. Hence, US is not sufficient as the Assigning Authority.
MC	Master Card	
VA	Veterans Affairs	
VI	Visa	

User-defined Table 0541 –Specimen Type Modifier – To perform conformance on this table, populate this table with local values.

User-defined Table 0542 –Specimen Source Type Modifier – To perform conformance on this table, populate this table with local values.

User-defined Table 0543 –Specimen Collection Site – To perform conformance on this table, populate this table with local values.

User-defined Table 0544 – Container Condition – To perform conformance on this table, populate this table with local values.

For all other tables mentioned in this Guide, but not enumerated or described here, please refer to the HL7 Standard Version 2.5.1.

5 Appendix B: Detailed HL7 Data Type Specifications

This appendix contains the detailed specification of all the HL7 datatypes that are assigned to fields that are supported for use in Cancer Registry Messaging in this guide. For datatypes that are not described here for those fields that are Not Supported, please refer to Chapter 2A of the HL7 Standard version 2.5.1.

Note that a number of the datatypes in this section are identified new for v2.5.1 but are actually replacements for the old CM datatypes of v2.3.1, which have all been removed. As of v2.5.1, all of the CM datatypes were deprecated and replaced with explicit new datatypes that call out the components, rather than being defined inline with the fields for which they are used.

B.1 CE – coded element

HL7 Component Table - CE – Coded Element

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	ST	O		Identifier	R	
2	199	ST	O		Text	RE	
3	20	ID	O	0396	Name of Coding System	R	
4	20	ST	O		Alternate Identifier	RE	
5	199	ST	O		Alternate Text	RE	
6	20	ID	O	0396	Name of Alternate Coding System	RE	

Definition: This data type transmits codes and the text associated with the code.

Maximum Length: 483

Note: retained for backward compatibility only as of v 2.5. Refer to the CNE and CWE data types.

Example:

```
|F-11380^CREATININE^I9^2148-5^CREATININE^LN|
```

Usage Note on the Alternate components (4, 5, 6)

These three components are defined analogously to components 1, 2 and 3 for the alternate or local coding system. If the alternate text component is absent, and the alternate identifier is present, the alternate text will be taken to be the same as the text component. If the alternate coding system component is absent, it will be taken to mean the locally-defined system.

Note: The presence of two sets of equivalent codes in this data type is semantically different from a repetition of a CE-type field. With repetition, several distinct codes (with distinct meanings) may be transmitted.

B.1.1 Identifier (ST)

Definition: Sequence of characters (the code) that uniquely identifies the item being referenced. Different coding schemes will have different elements here.

B.1.2 Text (ST)

Definition: The descriptive or textual name of the identifier, e.g., myocardial infarction or X-ray impression.

B.1.3 Name of Coding System (ID)

Definition: Identifies the coding scheme being used in the identifier component. The combination of the **identifier** and **name of coding system** components will be a unique code for a data item. Each system has a unique identifier.
Refer to HL7 Table 0396 in section 2.17.5 for valid values. The table includes ASTM E1238-94, Diagnostic, procedure, observation, drug ID, health outcomes and other coding systems.

Some organizations that publish code sets author more than one. The coding system, then, to be unique is a concatenation of the name of the coding authority organization and the name of its code set or table. When an HL7 table is used for a CE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number. Similarly, ISO tables will be named ISOnnnn, where nnnn is the ISO table number.

B.1.4 Alternate Identifier (ST)

Definition: An alternate sequence of characters (the code) that uniquely identifies the item being referenced. See usage note in section introduction.

B.1.5 Alternate Text (ST)

Definition: The descriptive or textual name of the alternate identifier. See usage note in section introduction.

B.1.6 Name of Alternate Coding System (ID)

Definition: Identifies the coding scheme being used in the alternate identifier component.
Refer to HL7 Table 0396 in section 2.17.5 for valid values. When an HL7 table is used for a CE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number.

B.2 CF - coded element with formatted values

HL7 Component Table - CF – Coded Element with Formatted Values

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	ST	O		Identifier	R	
2	65536	FT	O		Formatted Text	RE	
3	20	ID	O	0396	Name of Coding System	R	
4	20	ST	O		Alternate Identifier	RE	
5	65536	FT	O		Alternate Formatted Text	RE	
6	20	ID	O	0396	Name of Alternate Coding System	RE	

Definition: This data type transmits codes and the formatted text associated with the code. This data type can be used to transmit for the first time the formatted text for the **canned text** portion of a report, for example, a standard radiological description for a normal chest X-ray. The receiving system can store this information and in subsequent messages only the identifier need be sent. Another potential use of this data type is transmitting master file records that contain formatted text. This data type has six components as follows:

Maximum Length: 65536

The components, primary and alternate, are defined exactly as in the CE data type with the exception of the second and fifth components, which are of the formatted text data type.

Example:

```
OBX||CF|71020^CXR^99CPMC||79989^\H\Description:\N\\.sp\\ti+4\Heart is not
    enlarged. There is no evidence of pneumonia, effusion, pneumothorax or any
    masses. \.sp+3\\H\Impression:\N\\.sp\\.ti+4\Negative chest.^99CPMC
```

B.2.1 Identifier (ST)

Definition: Sequence of characters (the code) that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.

B.2.2 Formatted Text (FT)

Definition: Name or description of the item in question with the addition of embedded formatting instructions.

B.2.3 Name of Coding System (ID)

Definition: Contains the name of the coding system employed.
Refer to HL7 Table 0396 in section 2.17.5 for valid values.

B.2.4 Alternate Identifier (ST)

Definition: Alternate sequence of characters (the code) that uniquely identifies the item being referenced by the <text>. This identifier is the equivalent of component one.

B.2.5 Alternate Formatted Text (FT)

Definition: Name or description of the alternate identifier in question with the addition of embedded formatting instructions.

B.2.6 Name of Alternate Coding System (ID)

Definition: Contains the name of the coding system employed for the alternate identifier.
Refer to HL7 Table 0396 in section 2.17.5 for valid values.

B.3 CNE – coded with no exceptions

HL7 Component Table - CNE – Coded with No Exceptions

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	ST	R		Identifier	R	
2	199	ST	O		Text	RE	
3	20	ID	O	0396	Name of Coding System	R	
4	20	ST	O		Alternate Identifier	RE	
5	199	ST	O		Alternate Text	RE	
6	20	ID	O	0396	Name of Alternate Coding System	RE	
7	10	ST	C		Coding System Version ID	CE	
8	10	ST	O		Alternate Coding System Version ID	CE	
9	199	ST	O		Original Text	RE	

Definition: Specifies a coded element and its associated detail. The CNE data type is used when a required or mandatory coded field is needed. The specified HL7 or externally defined table must be used and may not be extended with local values. Text may not replace the code. A CNE field must have an HL7 defined or external table associated with it. It must be specified in the standard.

Maximum Length: 705

B.3.1 Identifier (ST)

Sequence of characters (the code) that uniquely identifies the item being referenced by the CNE.2. Different coding schemes will have different elements here.

Usage Note: The identifier is required and must be a valid code.

B.3.2 Text (ST)

Definition: The descriptive or textual name of the identifier, e.g., myocardial infarction or X-ray impression. Its data type is string (ST). This is the corresponding text assigned by the coding system to the identifier.

Usage Note: Text description of code is optional but its use should be encouraged since it makes messages easier to review for accuracy, especially during interface testing and debugging.

B.3.3 Name of Coding System (ID)

Each coding system is assigned a unique identifier. This component will serve to identify the coding scheme being used in the identifier component. The combination of the **identifier** and **name of coding system** components will be a unique code for a data item. Each system has a unique identifier.

Refer to HL7 Table 0396 in section 2.17.5 for valid values. The table includes ASTM E1238-94, Diagnostic, procedure, observation, drug ID, health outcomes, and other coding systems.

Some organizations that publish code sets author more than one. The coding system, then, to be unique is a concatenation of the name of the coding authority organization and the name of its code set or table. When an HL7 table is used for a CNE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number. Similarly, ISO tables will be named ISOnnnn, where nnnn is the ISO table number.

Usage Note: The *Coding system* must either be present and have a value from the set of allowed coding systems or if not present it will be interpreted to have the same meaning as if it had been valued with the code meaning "HL7 coding system." Refer to HL7 Table 0396 in section 2.17.5 for valid values.

B.3.4 Alternate Identifier (ST)

Analogous to "Identifier" in component 1.

Usage Notes: The Alternate Identifier is used to represent the local or user seen code as described. If present, it obeys the same rules of use and interpretation as described for component 1. If both are present, the identifiers in component 4 and component 1 should have exactly the same meaning, i.e., they should be exact synonyms.

B.3.5 Alternate Text (ST)

Definition: The descriptive or textual name of the alternate identifier. Analogous to "Text" in component 2. See usage notes in section introduction for further description.

Usage Notes: If present, component 5 obeys the same rules of use and interpretation as described for component 2.

B.3.6 Name of Alternate Coding System (ID)

Definition: Identifies the coding scheme being used in the alternate identifier component. Analogous to "Name of Coding System" in component 3. Refer to HL7 Table 0396 in section 2.17.5 for valid values.

Usage Notes: If present, components 6 obeys the same rules of use and interpretation as described for component 3.

B.3.7 Coding System Version ID (ST)

Definition: the version ID for the coding system identified by component 3. It belongs conceptually to components 1-3 and appears here only for reasons of backward compatibility.

Usage Note: If the coding system is any system other than an "HL7 coding system," version ID must be valued with an actual version ID. If the coding system is "HL7 coding system," version ID may have an actual value or it may be absent. If version ID is absent, it will be interpreted to have the same value as the HL7 version number in the message header. Text description of code is optional but its use should be encouraged since it makes messages easier to review for accuracy, especially during interface testing and debugging.

B.3.8 Alternate Coding System Version ID (ST)

Definition: the version ID for the coding system identified by component -6. It belongs conceptually to the group of Alternate components (see note B.1.6) and appears here only for reasons of backward compatibility.

Usage Notes: If present, component 8 obeys the same rules of use and interpretation as described for component 7.

B.3.9 Original Text (ST)

The original text that was available to an automated process or a human before a specific code was assigned.

B.4 CNN - composite ID number and name simplified

HL7 Component Table - CNN - Composite ID Number and Name Simplified

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	15	ST	O		ID Number	RE	
2	50	ST	O		Family Name	R	
3	30	ST	O		Given Name	RE	
4	30	ST	O		Second and Further Given Names or Initials Thereof	RE	
5	20	ST	O		Suffix (e.g., JR or III)	RE	
6	20	ST	O		Prefix (e.g., DR)	RE	
7	5	IS	O	0360	Degree (e.g., MD	X	
8	4	IS	C	0297	Source Table	CE	
9	20	IS	C	0363	Assigning Authority - Namespace ID	RE	
10	199	ST	C		Assigning Authority - Universal ID	CE	
11	6	ID	C	0301	Assigning Authority - Universal ID Type	CE	

Definition: Specifies a person using both an identifier and the person's name

Note: Restores the original data type CN as was initially implementable in the CM used in sections 4.5.3.32 and 7.4.1.32-(OBR-32) , 4.5.3.33 and 7.4.1.33 - (OBR-33) 4.5.3.34 and 7.4.1.34 - (OBR-34) 4.5.3.35 and 7.4.1.35 - (OBR-35). Components 7 and 8, however, have been promoted to data type IS to be consistent with current practice without violating backward compatibility.

Note that this was formerly the 'CN' datatype in v2.3.1; component 9 has been redefined, and components 10 & 11 were added.

Maximum Length: 406

B.4.1 ID Number (ST)

Coded ID according to a user-defined table. If the first component is present, either component 8 or 9, or both 10 and 11, must be valued.

B.4.2 Family Name (ST)

This component contains the person's family name in a string format.

B.4.3 Given Name (ST)

Used to specify a first name.

B.4.4 Second and Further Given Names or Initials Thereof (ST)

Multiple middle names may be included by separating them with spaces.

B.4.5 Suffix (ST)

Used to specify a name suffix (e.g., Jr. or III).

B.4.6 Prefix (ST)

Used to specify a name prefix (e.g., Dr.).

B.4.7 Degree (IS)

Used to specify an educational degree (e.g., MD). Refer to *User-defined Table 0360 – Degree* for suggested values.

B.4.8 Source Table (IS)

Refer to *User-defined Table 0297 - CN ID source* for suggested values. Used to delineate the first component. If component 1 is valued, either component 8, or 9, or both 10 and 11, must be valued.

B.4.9 Assigning Authority - Namespace ID (IS)

See section, *B.7.4*, "*Assigning Authority (HD)*" for definition. Refer to *User-defined Table 0363 – Assigning authority* for suggested values. Assigning Authority is normally expressed as an HD data type, but has been flattened to 3 components here (CNS.9, CNS.10 and CNS.11) in this data type so that it may be fully expressed. Also note that if additional components are added to the HD data type in the future, adjustment will need to be made accordingly to this data type.

For Cancer Registry reporting, the State or Provincial license number for a Physician should be transmitted. When this is transmitted, the Namespace ID used in HD here, or also in CNN and related datatypes, should be populated with a string following the pattern “xy_PHYSICIANLICENSE” where “xy” is the two-letter state or province code.

If component 1 is valued, either component 8, or 9, or both 10 and 11, must be valued.

B.4.10 Assigning Authority - Universal ID (ST)

See section, *B.7.4*, "*Assigning Authority (HD)*" for definition.

If CNN.11 is valued, this component must be valued. If component 1 is valued, either component 8, or 9, or both 10 and 11, must be valued.

B.4.11 Assigning Authority - Universal ID Type (ID)

See section, *B.7.4*, "*Assigning Authority (HD)*" for definition. If this component is a known UID refer to *HL7 Table 0301 - Universal ID type* for valid values

If CNN.10 is valued, this component must be valued. If component 1 is valued, either component 8, or 9, or both 10 and 11, must be valued.

B.5 CQ - composite quantity with units

HL7 Component Table - CQ –Composite Quantity with Units

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	16	NM	O		Quantity	R	
2	483	CE	O		Units	RE	

Maximum Length: 500

Note: CQ cannot be legally expressed when embedded within another data type. Its use is constrained to a segment field. Future use of this data type will be avoided because the same data can usually be sent as two separate fields, one with the value, and one with the units as a CE data type.

Examples:

```
|123.7^kg|          kilograms is an ISO unit
|150^lb&&ANSI+|     weight in pounds is a customary US unit defined within ANSI+.
```

B.5.1 Quantity (NM)

Definition: This component specifies the numeric quantity or amount of an entity.

B.5.2 Units (CE)

Definition: This component species the units in which the quantity is expressed. Field-by-field, default units may be defined within the specifications. When the quantity is measured in the default units, the units need not be transmitted. If the quantity is recorded in units different from the default, the units must be transmitted.

B.6 CWE – coded with exceptions

HL7 Component Table - CWE – Coded with Exceptions

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	ST	O		Identifier	R	
2	199	ST	O		Text	RE	
3	20	ID	O	0396	Name of Coding System	R	
4	20	ST	O		Alternate Identifier	RE	
5	199	ST	O		Alternate Text	RE	
6	20	ID	O	0396	Name of Alternate Coding System	RE	
7	10	ST	C		Coding System Version ID	CE	
8	10	ST	O		Alternate Coding System Version ID	CE	
9	199	ST	O		Original Text	RE	

Definition: Specifies a coded element and its associated detail. The CWE data type is used when 1) more than one table may be applicable **or** 2) the specified HL7 or externally defined table may be extended with local values **or** 3) when text is in place, the code may be omitted. The CWE data type is similar to the CE data type with the addition of being able to communicate the coding system versions for each coded triplet. It also allows communication of the original text which was the basis for the coding.

Maximum Length: 705

Usage Notes: This is a field that is generally sent using a code, but where the code may be omitted in exceptional instances or by site agreement. Exceptional instances arise when the coding system being used does not have a code to describe the concept in the text.

Components 1-3 & 7 are used in one of three ways:

Coded: The identifier contains a valid code from a coding system. The coding system must either be present and have a value from the set of allowed coding systems, or if not present, it will be interpreted to have the same meaning as if it had been valued with the code meaning "HL7 coding system". Refer to HL7 Table 0396 in section 2.17.5 for valid values. The table includes ASTM E1238-94, Diagnostic, procedure, observation, drug ID, and health outcomes coding systems. If the coding system is any system other than "HL7 coding system," version ID must be valued with an actual version ID. If the coding system is "HL7 coding system," version ID may have an actual value or it may be absent. If version ID is absent, it will be interpreted to have the same value as the HL7 version number in the message header. Text description is optional, but its use should be encouraged to aid in readability of the message during testing and debugging.

Example 1a: OBX segment where the observation identifier is a LOINC code and the observation value is being sent as a CWE value, and the value is taken from SNOMED International.

```
OBX|1|CWE|883-9^ABO Group^LN|1|F-D1250^Type O^SNM3^^^^3.4|||N||F<cr>
```

Example 1b: OBX segment where the observation identifier is a LOINC code and the observation value is being sent as an CWE value, and the value is taken from a (currently hypothetical) HL7 table.

```
OBX|1|CWE|883-9^ABO Group^LN|1|O^Type O^HL74875^^^^2.5.1|||N||F<cr>
```

Uncoded: Text is valued, the identifier has no value, and coding system and version ID follow the same rules as discussed for option 1.

Example 2: OBX segment where the observation identifier is a LOINC code and the observation value is being sent as a CWE value, and the value is sent as text because the correct clinical value, "Wesnerian" was not found in the set of allowed values.

```
OBX|1|CWE|883-9^ABO Group^LN|1|^Wesnerian^SNM3^^^^3.4|||A||F<cr>
```

Data missing: The name of the coding system is "HL7 CWE Status," version ID is either a real version, or if not present it has the same meaning as the version in the message header, and the identifier takes its value from one of the allowed CWE field statuses. The codes for the allowed CWE field statuses are shown below and will be maintained in a table as part of the HL7 vocabulary. Text description of code is optional.

Example 3: OBX segment where the observation identifier is a LOINC code and the observation value is being sent as an LCE value, and no value can be sent because the test was not done.

```
OBX|1|CWE|883-9^ABO Group^LN|1|NAV^Not Available^HL70353^^^^2.5.1|||N||F<cr>
```

Component 9:

This is the original text that was available to an automated process or a human before a specific code was assigned. This field is optional.

Components 3-6 & 8:

Components 3-6 & 8 are optional. They are used to represent the local or user seen code. If present, components 3-6 & 8 obey the same rules of use and interpretation as described for components 1-3 & 7 (of the CWE data type). If both are present, the identifiers in component 4 and component 1 should have exactly the same meaning; i.e. they should be exact synonyms.

Example 4: OBX segment where the observation identifier is a LOINC code and the observation value is being sent as an CWE value, and the value is taken from SNOMED International. The user seen fields are being used to represent a local coding system (99LAB) used in the sending system.

```
OBX|1|CWE|883-9^ABO Group^LN|1|F-D1250^Type O^SNM3^O^O Type
    Blood^99LAB^3.4^|||||F<cr>
```

Summary of CWE usage notes with table of status values for various states without values:

The CWE data type should be used for coded fields that are optional or where it is permissible to send text for items that are not yet a part of the approved value set. In the normal situation, the identifier is valued with the code from the value set. If the value of the field is known, but is not part of the value set, then the value is sent as text, and the identifier has no value. If the field has an unknown status, then third form of the field is used (see **Data missing** above), and the appropriate status for the field is selected from the table of allowed statuses. When no code exists, refer to *HL7 Table 0353 – CWE statuses* for valid values.

Where a text modifier might accompany a code, the "field" in the HL7 message would be of data type CWE and would be allowed to repeat. The first instance of the field would be used, as per option 1; i.e. the identifier would have a valid code. The second instance of the repeating field would be used, as per option 2, that is, the text description would take the value of the free text modifier.

B.6.1 Identifier (ST)

Definition: Sequence of characters (the code) that uniquely identifies the item being referenced. Different coding schemes will have different elements here.

B.6.2 Text (ST)

Definition: The descriptive or textual name of the identifier, e.g., myocardial infarction or X-ray impression.

B.6.3 Name of Coding System (ID)

Definition: Identifies the coding scheme being used in the identifier component.

The combination of the **identifier** and **name of coding system** components will be a unique code for a data item. Each system has a unique identifier.

Refer to HL7 Table 0396 in section 2.17.5 for valid values. The table includes ASTM E1238-94, Diagnostic, procedure, observation, drug ID, health outcomes and other coding systems.

Some organizations that publish code sets author more than one. The coding system, then, to be unique is a concatenation of the name of the coding authority organization and the name of its code set or table. When an HL7 table is used for a CE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number. Similarly, ISO tables will be named ISOnnnn, where nnnn is the ISO table number.

B.6.4 Alternate Identifier (ST)

Definition: An alternate sequence of characters (the code) that uniquely identifies the item being referenced. Analogous to "Identifier" in component 1. See usage note in section introduction.

B.6.5 Alternate Text (ST)

Definition: The descriptive or textual name of the alternate identifier. Analogous to "Text" in component 2. See usage note in section introduction.

B.6.6 Name of Alternate Coding System (ID)

Definition: Identifies the coding scheme being used in the alternate identifier component. Analogous to “Name of Coding System” above. See usage note in section introduction.

B.6.7 Coding System Version ID (ST)

This is the version ID for the coding system identified by components 1-3. It belongs conceptually to the group of component 1-3 and appears here only for reasons of backward compatibility.

B.6.8 Alternate Coding System Version ID (ST)

This is the version ID for the coding system identified by components 4-6. It belongs conceptually to the group of alternate components (See usage note in section introduction) and appears here only for reasons of backward compatibility.

B.6.9 Original Text (ST)

The original text that was available to an automated process or a human before a specific code was assigned.

B.7 CX - extended composite ID with check digit

HL7 Component Table - CX – Extended Composite ID with Check Digit

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	15	ST	R		ID Number	R	
2	1	ST	O		Check Digit	X	
3	3	ID	O	0061	Check Digit Scheme	X	
4	227	HD	O	0363	Assigning Authority	R	
5	5	ID	O	0203	Identifier Type Code	RE	
6	227	HD	O		Assigning Facility	RE	
7	8	DT	O		Effective Date	RE	
8	8	DT	O		Expiration Date	RE	

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
9	705	CWE	O		Assigning Jurisdiction	RE	
10	705	CWE	O		Assigning Agency or Department	RE	

Definition: This data type is used for specifying an identifier with its associated administrative detail.

Maximum Length: 1913

Note: The check digit and check digit scheme are null if ID is alphanumeric.

Example:

```
|1234567^4^M11^ADT01^MR^Good Health Hospital|
```

B.7.1 ID Number (ST)

Definition: The value of the identifier itself.

B.7.2 Check Digit (ST)

The check digit in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

B.7.3 Check Digit Scheme (ID)

Definition: Contains the code identifying the check digit scheme employed.

Refer to *HL7 Table 0061 - Check digit scheme* for valid values.

The algorithm for calculating a Mod10 check digit is as follows:

Assume you have an identifier - 12345. Take the odd digit positions, counting from the right, i.e., 531, multiply this number by 2 to get 1062. Take the even digit positions, starting from the right (i.e., 42), prepend these to the 1062 to get 421062. Add all of these six digits together to get 15. Subtract this number from the next highest multiple of 10, i.e., 20 - 15 to get 5. The Mod10 check digit is 5. The Mod10 check digit for 401 is 0; for 9999, it's 4; for 99999999, it's 8.

The algorithm for calculating a Mod11 check digit is as follows:

Terms

d = digit of number starting from units digit, followed by 10's position, followed by 100's position, etc.

w = weight of digit position starting with the units position, followed by 10's position, followed by 100's position etc. Values for w = 2, 3, 4, 5, 6, 7, 2, 3, 4, 5, 6, 7, etc. (repeats for each group of 6 digits)

c = check digit

Calculation

(Step 1) m = sum of (d * w) for positions 1, 2, etc. starting with units digit
for d = digit value starting with units position to highest order
for w = weight value from 2 to 7 for every six positions starting with units digit

(Step 2) c1 = m mod 11

(Step 3) if c1 = 0 then reset c1 = 1
(Step 4) = (11 - c1) mod 10

Example:

```
If the number is 1234567, then the mod 11 check digit = 4
```

The calculations are:

```
M  = (7*2)+(6*3)+(5*4)+(4*5)+(3*6)+(2*7)+(1*2)
   = 14 + 18 + 20 + 20 + 18 + 14 + 2
   = 106
c1 = 106 mod 11
   = 7
c  = (11-c1) mod 10
   = 4 mod 10
   = 4
```

Other variants of these check digit algorithms exist and may be used by local bilateral site agreement.

Note: The check digit and code identifying check digit scheme are null if ID is alphanumeric.

B.7.4 Assigning Authority (HD)

The assigning authority is a unique name of the system (or organization or agency or department) that creates the data. . Refer to *User-defined Table 0363 – Assigning authority* for suggested values.

The reader is referred to the CX.9 and the CX.10 if there is a need to transmit values with semantic meaning for an assigning jurisdiction or assigning department or agency in addition to, or instead of, an assigning authority. However, all 3 components may be valued. If, in so doing, it is discovered that the values in CX.9 and/or CX.10 conflict with CX.4, the user would look to the Message Profile or other implementation agreement for a statement as to which takes precedence.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

By site agreement, implementers may continue to use *User-defined Table 0300 – Namespace ID* for the first sub-component.

B.7.5 Identifier Type Code (ID)

A code corresponding to the type of identifier. In some cases, this code may be used as a qualifier to the "Assigning authority" component. Refer to *HL7 Table 0203 - Identifier type* for suggested values.

B.7.6 Assigning Facility (HD)

Definition: The place or location identifier where the identifier was first assigned to the patient. This component is not an inherent part of the identifier but rather part of the history of the identifier: as part of this data type, its existence is a convenience for certain intercommunicating systems.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component), may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

B.7.7 Effective Date (DT)

Definition: The first date, if known, on which the identifier is valid and active.

B.7.8 Expiration Date (DT)

Definition: The last date, if known, on which the identifier is valid and active.

B.7.9 Assigning Jurisdiction (CWE)

Definition: The geo-political body that assigned the identifier in component 1.

- Refer to *HL7 Table 0399 Country Code* for valid values if the administrative unit under whose jurisdiction the identifier was issued is a country.
- Refer to *User-Defined Table 0347 State/Province* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is a state or province. This table is country specific. In the US postal codes may be used.
- Refer to *User-defined Table –0289 County/Parish* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is a county or parish.

The reader is referred to the CX.4, if there is a need to transmit this information as an OID.

B.7.10 Assigning Agency or Department (CWE)

Definition: The agency or department that assigned the identifier in component 1.

Refer to *User-defined Table –0530 Organizations, Agency, Department* for suggested values if the administrative unit under whose jurisdiction the identifier was issued is an organization, agency or department. This is populated with site-specific assigning authorities. It also should contain national or international codes when CX-5 Identifier Type may be assigned by more than one authority within a governmental or organizational unit. For example, a federal government may have 2 departments that assign a military identifier, its Veterans Affairs department and its department of defense. It is **not** recommended to include values for entities such as Social Security Administration (SSA), Immigration and Naturalization Service (INS), Center for Medicare and Medicaid Services (CMS) because they are included in the identifier type table. In these cases the name of the country plus the identifier type yields the correct interpretation of the identifier in component one. Likewise, entries like department of motor vehicles (DMV) and licensing boards are **not** recommended for inclusion because the combination of state and identifier type yields the correct interpretation of the identifier in component one. This approach is not to be confused with the detailed information provided in the chapter 15 segments that have provision for specifying the precise granting body and issuing body information needed in personnel management messages.

Example 1: <Identifier> plus <Visa> yields a unique identifier.

Example 2: <identifier> plus <state> plus <DLN> yields a unique driver's license number.

Example 3: <identifier> plus <country> plus <INS> yields a unique immigration number.

The reader is referred to the CX.4, if there is a need to transmit this information as an OID.

B.8 DLD – discharge to location and date

HL7 Component Table - DLD – Discharge Location and Date

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	IS	R	0113	Discharge Location	R	
2	26	TS	O		Effective Date	RE	

Definition: Specifies the healthcare facility to which the patient was discharged and the date.

Maximum Length: 47

Note: Replaces the CM data type used in section 3.4.3.37 PV1-37, as of v 2.5.

B.8.1 Discharge Location (IS)

Definition: Specifies the healthcare facility to which the patient was discharged. Refer to *User-defined Table 0113 - Discharged to location* for suggested values.

B.8.2 Effective Date (TS)

Definition: Specifies the date on which the patient was discharged to a healthcare facility.

B.9 DR – date/time range

HL7 Component Table - DR – Date/Time Range

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	26	TS	O		Range Start Date/Time	RE	
2	26	TS	O		Range End Date/Time	RE	

Note: DR cannot be legally expressed when embedded within another data type. Its use is constrained to a segment field.

Maximum Length: 53

B.9.1 Range Start Date/Time (TS)

Definition: The first component contains the earliest date/time (time stamp) in the specified range.

B.9.2 Range End Date/Time (TS)

The second component contains the latest date/time in the specified range. Note that the TS (time stamp) data type allows the specification of precision.

B.10 DT - date

HL7 Component Table - DT – Date

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	8				Date		

Definition: Specifies the century and year with optional precision to month and day.

Maximum Length: 8

As of v 2.3, the number of digits populated specifies the precision using the format specification YYYY[MM[DD]]. Thus:

only the first four digits are used to specify a precision of "year"

the first six are used to specify a precision of "month"

the first eight are used to specify a precision of "day"

Examples:

```
|19880704|
|199503|
```

Prior to v 2.3, this data type was specified in the format YYYYMMDD. As of v 2.3 month and days are no longer required. By site-specific agreement, YYYYMMDD may be used where backward compatibility must be maintained.

B.11 DTM - date/time

HL7 Component Table - DTM – Date/Time

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	24				Date/Time		

Definition: Specifies a point in time using a 24-hour clock notation.

Maximum Length: 24

The number of characters populated (excluding the time zone specification) specifies the precision.

Format: YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ].

Thus:

only the first four are used to specify a precision of "year"

the first six are used to specify a precision of "month"

the first eight are used to specify a precision of "day"

the first ten are used to specify a precision of "hour"

the first twelve are used to specify a precision of "minute"

the first fourteen are used to specify a precision of "second"

the first sixteen are used to specify a precision of "one tenth of a second"

the first nineteen are used to specify a precision of " one ten thousandths of a second"

Example: |199904| specifies April 1999.

The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Co-ordinated Universal Time (UTC) (formerly Greenwich Mean Time (GMT)), where +0000 or -0000 both represent UTC (without offset). The specific data representations used in the HL7 encoding rules are compatible with ISO 8824-1987(E).

Note that if the time zone is not included, the time zone defaults to that of the local time zone of the sender. Also note that a DTM or TS valued field with the HHMM part set to "0000" represents midnight of the night extending from the previous day to the day given by the YYYYMMDD part (see example below). Examples:

Example	Description
|19760704010159-0500|	1:01:59 on July 4, 1976 in the Eastern Standard Time zone (USA)
|19760704010159-0400|	1:01:59 on July 4, 1976 in the Eastern Daylight Saving Time zone (USA).
|198807050000|	Midnight of the night extending from July 4 to July 5, 1988 in the local time zone of the sender.
|19880705|	Same as prior example, but precision extends only to the day. Could be used for a birth date, if the time of birth is unknown.
|19981004010159+010|	1:01:59 on October 4, 1998 in Amsterdam, NL. (Time zone=+0100).

The HL7 Standard strongly recommends that all systems routinely send the time zone offset but does not require it. All HL7 systems are required to accept the time zone offset, but its implementation is application specific. For many applications the time of interest is the local time of the sender. For example, an application in the Eastern

Standard Time zone receiving notification of an admission that takes place at 11:00 PM in San Francisco on December 11 would prefer to treat the admission as having occurred on December 11 rather than advancing the date to December 12.

Note: The time zone [+/-ZZZZ], when used, is restricted to legally-defined time zones and is represented in HHMM format.

One exception to this rule would be a clinical system that processed patient data collected in a clinic and a nearby hospital that happens to be in a different time zone. Such applications may choose to convert the data to a common representation. Similar concerns apply to the transitions to and from daylight saving time. HL7 supports such requirements by requiring that the time zone information be present when the information is sent. It does not, however, specify which of the treatments discussed here will be applied by the receiving system.

B.12 ED - encapsulated data

HL7 Component Table - ED – Encapsulated Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	227	HD	O		Source Application	RE	
2	9	ID	R	0191	Type of Data	R	
3	18	ID	O	0291	Data Subtype	RE	
4	6	ID	R	0299	Encoding	R	
5	65536	TX	R		Data	R	

Definition: This data type transmits encapsulated data from a source system to a destination system. It contains the identity of the source system, the type of data, the encoding method of the data, and the data itself. This data type is similar to the RP (reference pointer) data type except that instead of pointing to the data on another system, it contains the data which is to be sent to that system.

Maximum Length: 65536

B.12.1 Source Application (HD)

A unique name that identifies the system which was the source of the data. Identical format and restrictions as in reference pointer (see the *HL7 Standard version 2.5.1, Chapter 2A, Section 2A.65 RP Reference Pointer*).

B.12.2 Type of Data (ID)

Identical to "type of data" component in the reference pointer (RP) data type. See *HL7 Standard version 2.5.1, Chapter 2A, Section 2A.65 RP Reference Pointer*".

Refer to *HL7 Table 0191 – Type of referenced data* for valid values.

B.12.3 Data Subtype (ID)

Identical to "subtype" component in the reference pointer (RP) data type. See Section *HL7 Standard version 2.5.1, Chapter 2A, Section 2A.65 RP Reference Pointer*.

Refer to *HL7 Table 0291 - Subtype of referenced data* for valid values.

B.12.4 Encoding (ID)

The type of encoding used to represent successive octets of binary data as displayable ASCII characters. Refer to *HL7 Table 0299 - Encoding* for valid values.

B.12.5 Data (TX)

Displayable ASCII characters which constitute the data to be sent from source application to destination application. The characters are limited to the legal characters of the ST data type, as defined in Section

AB.1B.32, "*ST - string data*," and, if encoded binary, are encoded according to the method of Section *AB.1B.12.2*, "*Type of Data (ID)*".

If the encoding component (see Section *AB.1B.12.4*, "*Encoding (ID)*") = "A" (none), then the data component must be scanned before transmission for HL7 delimiter characters, and any found must be escaped by using the HL7 escape sequences defined in Section 2.7 Use of escape sequences in text fields. On the receiving application, the data field must be de-escaped after being parsed.

If the encoding component ED.4 does not equal "A," then, after encoding, the (encoded) data must be scanned for HL7 delimiter characters, and any found must be escaped by using the HL7 escape sequences. Only then can the component be added to the HL7 segment/message. On the receiving application, the data field must be de-escaped after being parsed out of the message before being decoded. This can be expressed as "encode," "escape, "parse," "de-escape" or "decode".

B.13 EI - entity identifier

HL7 Component Table - EI – Entity Identifier

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	199	ST	O		Entity Identifier	R	
2	20	IS	O	0363	Namespace ID	RE	
3	199	ST	C		Universal ID	CE	
4	6	ID	C	0301	Universal ID Type	CE	

Definition: The entity identifier defines a given entity within a specified series of identifiers.

Maximum Length: 427

The EI is appropriate for, but not limited to, machine or software generated identifiers. The generated identifier goes in the first component. The remaining components, 2 through 4, are known as the assigning authority; they identify the machine/system responsible for generating the identifier in component 1.

The specified series, the assigning authority, is defined by components 2 through 4. The assigning authority is of the hierarchic designator (HD) data type, but it is defined as three separate components in the EI data type, rather than as a single component as would normally be the case. This is in order to maintain backward compatibility with the EI's use as a component in several existing data fields. Otherwise, the components 2 through 4 are as defined in Section *AB.1B.19*, "*HD - hierarchic designator*". Hierarchic designators (HD) are unique across a given HL7 implementation.

B.13.1 Entity Identifier (ST)

The first component, <entity identifier>, is usually defined to be unique within the series of identifiers created by the <assigning authority>, defined by a hierarchic designator, represented by components 2 through 4. See Section *AB.1B.19*, "*HD - hierarchic designator*".

B.13.2 Namespace ID (IS)

See Section *AB.1B.19.1*, "*Namespace ID (IS)*" for definition.

The assigning authority is a unique identifier of the system (or organization or agency or department) that creates the data. Refer to *User-defined Table 0363 – Assigning authority* for suggested values.

Note: When the HD is used as a part of another data type, in this case as part of the EI data type, this table may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

By site agreement, implementers may continue to use *User-defined Table 0300 – Namespace ID* for the first component

B.13.3 Universal ID (ST)

See Section *AB.1B.19.2*, "*Universal ID (ST)*" for definition.

B.13.4 Universal ID Type (ID)

Refer to *HL7 Table 0301 - Universal ID type* for valid values. See Section *AB.1B.19.3*, "*Universal ID Type (ID)*," for definition.

B.14 EIP - entity identifier pair

HL7 Component Table - EIP – Entity Identifier Pair

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	427	EI	O		Placer Assigned Identifier	RE	
2	427	EI	O		Filler Assigned Identifier	RE	

Definition: Specifies an identifier assigned to an entity by either the placer or the filler system. If both components are populated the identifiers must refer to the same entity.

Maximum Length: 855

Note: Replaces the CM data type used in sections 4.5.1.8 - ORC-8, 4.5.3.29 – OBR-29, 7.3.1.29 – OBR-29, as of v 2.5.

B.14.1 Placer Assigned Identifier (EI)

Definition: Specifies an identifier assigned to an entity by the placer system.

For example, the component might be used to convey the following:
placer order number of the parent order

the specimen identifier as assigned by the placer.

A location identifier assigned (or used by) the placer.

B.14.2 Filler Assigned Identifier (EI)

Definition: Specifies an identifier assigned to an entity by the filler system.

For example, the component might convey the following:
filler order number of the parent order

the specimen identifier as assigned by the filler.

A location identifier assigned (or used by) the filler.

B.15 ELD - error location and description

HL7 Component Table - ELD – Error Location and Description

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	3	ST	O		Segment ID	R	
2	2	NM	O		Segment Sequence	R	
3	2	NM	O		Field Position	RE	
4	483	CE	O	0357	Code Identifying Error	R	

Definition: Specifies the segment that contains an error and describes the nature of the error.

Maximum Length: 493

Note: Replaces the CM data type used in 2.16.5.1 ERR-1 as of v 2.5. Retained for backward compatibility only as of v 2.5. Refer to ERR segment.

B.15.1 Segment ID (ST)

Definition: The segment containing the error in another message

B.15.2 Segment sequence (NM)

Definition: Specifies the specific occurrence if the segment specified in component 1 occurs more than once in the message.

B.15.3 Field Position (NM)

Definition: Ordinal position of the data field within the segment. For systems that do not use the HL7 Encoding Rules, the data item number may be used for the third component.

B.15.4 Code Identifying Error (CE)

Definition: A code that describes the nature of the error. Refer to *HL7 Table 0357 - Message error condition codes* for valid values.

B.16 ERL - error location

HL7 Component Table - ERL – Error Location

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	3	ST	R		Segment ID	R	
2	2	NM	R		Segment Sequence	R	
3	2	NM	O		Field Position	RE	
4	2	NM	O		Field Repetition	RE	
5	2	NM	O		Component Number	RE	
6	2	NM	O		Sub-Component Number	RE	

Definition: This data type identifies the segment and its constituent where an error has occurred.

Maximum Length: 18

B.16.1 Segment ID (ST)

Definition: Specifies the 3-letter name for the segment.

B.16.2 Segment Sequence (NM)

Definition: Identifies the segment occurrence within the message.

B.16.3 Field Position (NM)

Definition: Identifies the number of the field within the segment. The first field is assigned a number of 1. Field number should not be specified when referring to the entire segment.

B.16.4 Field Repetition (NM)

Definition: Identifies the repetition number of the field. The first repetition is counted as 1. If a Field Position is specified, but Field Repetition is not, Field Repetition should be assumed to be 1. If Field Position is not specified, Field Repetition should not be specified.

B.16.5 Component Number (NM)

Definition: Identifies the number of the component within the field. The first component is assigned a number of 1. Component number should not be specified when referring to the entire field.

B.16.6 Sub-Component Number (NM)

Definition: Identifies the number of the sub-component within the component. The first sub-component is assigned a number of 1. Sub-component number should not be specified when referring to the entire component.

B.17 FN - family name

HL7 Component Table - FN – Family Name

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	50	ST	R		Surname	R	
2	20	ST	O		Own Surname Prefix	RE	
3	50	ST	O		Own Surname	RE	
4	20	ST	O		Surname Prefix From Partner/Spouse	RE	
5	50	ST	O		Surname From Partner/Spouse	RE	

Definition: This data type allows full specification of the surname of a person. Where appropriate, it differentiates the person's own surname from that of the person's partner or spouse, in cases where the person's name may contain elements from either name. It also permits messages to distinguish the surname prefix (such as "van" or "de") from the surname root.

Maximum Length: 194

Note: Appears ONLY in the PPN, XCN and XPN.

B.17.1 Surname (ST)

The atomic element of the person's family name. In most Western usage, this is the person's last name.

B.17.2 Own Surname Prefix (ST)

Internationalization usage for Germanic languages. This component is optional. An example of a <surname prefix> is the "van" in "Ludwig van Beethoven". Since the <surname prefix> doesn't sort completely alphabetically, it is reasonable to specify it as a separate sub-component of the PN and extended PN data types (XPN and XCN).

Note: Subcomponents <own surname prefix>, <own surname>, <surname prefix from partner/spouse> and <surname from partner/spouse> decompose complex Germanic names such as “Martha de Mum-van Beethoven”. If these subcomponents are valued, the <surname> subcomponent should still be fully valued for backward compatibility, i.e., ^de Mum-van Beethoven&de&Mum&van&Beethoven^.
Also, for clarity, the <last name prefix> has been renamed to <own surname prefix>.

B.17.3 Own Surname (ST)

The portion of the surname (in most Western usage, the last name) that is derived from the person's own surname, as distinguished from any portion that is derived from the surname of the person's partner or spouse. This component is optional.

If the person's surname has legally changed to become (or incorporate) the surname of the person's partner or spouse, this is the person's surname immediately prior to such change. Often this is the person's "maiden name".

B.17.4 Surname Prefix from Partner/Spouse (ST)

Internationalization usage for Germanic languages. This component is optional. An example of a <surname prefix> is the “van” in "Ludwig van Beethoven". Since the <surname prefix> doesn't sort completely alphabetically, it is reasonable to specify it as a separate sub-component of the PN and extended PN data types (XPN and XCN).

Note: Subcomponents <own surname prefix>, <own surname>, <surname prefix from partner/spouse> and <surname from partner/spouse> decompose complex Germanic names such as "Martha de Mum-van Beethoven". If these subcomponents are valued, the <surname> subcomponent should still be fully valued for backward compatibility, i.e., ^de Mum-van Beethoven&de&Mum&van&Beethoven^.
Also, for clarity, the <last name prefix> has been renamed to <own surname prefix>.

B.17.5 Surname from Partner/Spouse (ST)

The portion of the person's surname (in most Western usage, the last name) that is derived from the surname of the person's partner or spouse, as distinguished from the part derived from the person's own surname. This component is optional.

If no portion of the person's surname is derived from the surname of the person's partner or spouse, this component is not valued. Otherwise, if the surname of the partner or spouse has legally changed to become (or incorporate) the person's surname, this is the surname of the partner or spouse immediately prior to such change.

B.18 FT - formatted text data

HL7 Component Table - FT – Formatted Text Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	65536				Coded Value for HL7-Defined Tables		

Maximum Length: 65536

This data type is derived from the string data type by allowing the addition of embedded formatting instructions. These instructions are limited to those that are intrinsic and independent of the circumstances under which the field is being used. The actual instructions and their representation are described elsewhere in this chapter. ***The FT field is of arbitrary length (up to 64k)*** and may contain formatting commands enclosed in escape characters.

Example:

```
|\.sp\(skip one vertical line)|
```

For additional examples of formatting commands see Section 2.7, "Use of Escape Sequences in Text Fields".

To include alternative character sets, use the appropriate escape sequence. See Section 2.15.9.18, "Character set" and Section 2.15.9.20, "Alternate character set handling".

B.19 HD - hierarchic designator

HL7 Component Table - HD – Hierarchic Designator

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	IS	O	0300	Namespace ID	RE	
2	199	ST	C		Universal ID	CE	
3	6	ID	C	0301	Universal ID Type	CE	

Definition: The basic definition of the HD is that it identifies an (administrative or system or application or other) entity that has responsibility for managing or assigning a defined set of instance identifiers (such as placer or filler number, patient identifiers, provider identifiers, etc.). This entity could be a particular health care application such as a registration system that assigns patient identifiers, a governmental entity such as a licensing authority that assigns professional identifiers or drivers' license numbers, or a facility where such identifiers are assigned.

Maximum Length: 227

The HD is designed to be a more powerful and more general replacement for the application identifier of HL7 versions 2.1 and 2.2. It adds two additional components, the <universal ID> and the <universal ID type> to the former application ID (which is renamed more generically to be the namespace ID).

In the case where an HD identifies an entity that assigns/creates instance identifiers such as a particular patient registration system, it defines an "assigning authority". In the case where an HD identifies a location where instance identifiers are given out (although they may be created by another entity at another location) such as a particular "department of motor vehicles office location," it defines an "assigning facility". These two different uses of the HD appear in many of the extended data types.

The "assigning authority" defined by the HD is similar in its role to the coding system (and version) part of the coded element data types: both identify a set of more discrete instance identifiers. The difference is that the set of HD-defined discrete instances contain identifiers of "real-world" things such as patient or clinical orders, while the coded element-defined set of discrete instances contains concept identifiers (codes).

The HD is designed to be used either as a local identifier (with only the <namespace ID> valued) or a publicly-assigned identifier, a UID (<universal ID> and <universal ID type> both valued). Syntactically, the HD is a group of two identifiers: a local identifier defined by the first component and a universal identifier defined by the second and third components. HDs that have defined third components (defined UID types) must have a second component that is unique within the series of IDs defined by that component.

Note: The HD is used in fields that in earlier versions of HL7 used the IS data type. Thus, a single component HD (only the first component valued) will look like a simple IS data type for older systems expecting a single component in the place of the HD data type.

If the first component for the HD data type is present, the second and third components are optional. If the third component is present, then the second must also be present (although in this case the first is optional). The second and third components must either both be valued (both non-null), or both be not valued (both null).

This means that if all three components of the HD are valued, the entity identified by the first component is the same as the entity identified by components two and three taken together. However, implementers may choose, by site agreement, to specify that if all three components of the HD are valued, the first component defines a member in the set defined by the second and third components.

Examples:

Example 1: ISO examples with only the 2nd and 3rd components valued:

```
|^1.2.344.24.1.1.3^ISO|
|^1.2.34.4.1.5.1.5.1,1.13143143.131.3131.1^ISO|
```

The syntax of the second component is defined by the ISO standard for object identifiers, not by HL7 (for which the second component is of the ST data type). Thus the periods (".") and comma (",") in the second component are part of the ISO syntax, but are legal by the definition of the HL7 ST data type.

Example 2: A GUID example

```
|^14344.14144321.4122344.14434.654^GUID|
```

Example 3: An internet example

```
|^falcon.iupui.edu^DNS|
```

Example 4: a RANDOM UID

```
|^40C983F09183B0295822009258A3290582^RANDOM|
```

Local examples:

Example 5: Local use only: a HD that looks like an IS data type

```
|LAB1|
|RX.PIMS.SystemB.KP.CA.SCA|
```

Note that the syntax of the first component is not defined by HL7 but by the site according to its own needs: the only requirement is that the first component's structure is allowed by the HL7 string (ST) data type, which is used for values by the IS data type.

Example 6: Local identifier using components 2 and 3 only

```
|^RX.PIMS.SystemB.CA.SCA^M|
```

An alternate way to encode the previous example, illustrating the use of the third component value of "M" (see above *HL7 Table 0301 - Universal ID type*) to identify a locally-defined identifier set. The second component has the same value as the previous example but is now defined to be a member of a set of allowable values defined by a site for the identifier set "M".

Example 7: Local identifier with 2nd and 3rd components populated.

```
|PathLab^PL.UCF.UC^L|
```

The 'PathLab' application is identified by the namespace component but it is also identified by the 2nd and 3rd components, (i.e., by the locally-defined UID system "L"). The two identifiers are equivalent.

This is a more complex HD in which the middle component, which is locally defined, is itself structured. As with the ISO example above, the middle component's structure is not defined by HL7 but by the site according to its own needs: the only requirement is that the middle component's structure is allowed by the HL7 string (ST) data type.

Example 8: local identifier and universal ID types:

```
|LAB1^1.2.3.3.4.6.7^ISO|
```

A HD with an ISO "object Identifier" as a UID and a locally defined system name. Both the first component and the second and third (taken together) refer to the same entity. This example shows that the local value and the universal ID value may be transmitted with a single HD field.

B.19.1 Namespace ID (IS)

User-defined Table 0300 - Namespace ID is used as the HL7 identifier for the user-defined table of values for this component.

For Cancer Registry reporting, the State or Provincial license number for a Physician should be transmitted. When this is transmitted, the Namespace ID used in HD here, or also in CNN and related datatypes, should be populated with a string following the pattern "xy_PHYSICIANLICENSE" where "xy" is the two-letter state or province code. Note this is used also in *User-defined Table 0363 Namespace ID*.

Note: When the HD is used in a given segment (either as a field or as a component of another data type) this table may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

B.19.2 Universal ID (ST)

The HD's second component, <universal ID> (UID), is a string formatted according to the scheme defined by the third component, <universal ID type> (UID type). The UID is intended to be unique over time within the UID type. It is rigorously defined. Each UID must belong to one of the specifically enumerated schemes for constructing UIDs (defined by the UID type). The UID (second component) must follow the syntactic rules of the particular universal identifier scheme (defined by the third component). Note that these syntactic rules are not defined within HL7 but are defined by the rules of the particular universal identifier scheme (defined by the third component). Conditionality predicate: If the Namespace ID is not valued, then this component must be valued.

B.19.3 Universal ID Type (ID)

The third component governs the interpretation of the second component of the HD. If the third component is a known UID refer to *HL7 Table 0301 - Universal ID type* for valid values, then the second component is a universal ID of that type. Conditionality predicate: If the Universal ID is valued, then this component must be valued.

B.20 ID - coded value for HL7 defined tables

HL7 Component Table - ID – String Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
					Coded Value for HL7-Defined Tables		

Maximum Length: Varies - dependent on length of longest code in code set.

The value of such a field follows the formatting rules for an ST field except that it is drawn from a table of legal values. There shall be an HL7 table number associated with ID data types. An example of an ID field is OBR-25-res*ult status*. This data type should be used only for HL7 tables (see Section 2.5.3.6 -Table). The reverse is not true, since in some circumstances it is more appropriate to use the CNE or CWE data type for HL7 tables.

B.21 IS - coded value for user-defined tables

HL7 Component Table - IS – String Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	20				Coded Value for User-Defined Tables		

Maximum Length: 20

The value of such a field follows the formatting rules for a ST field except that it is drawn from a site-defined (or user-defined) table of legal values. There shall be an HL7 table number associated with IS data types. An example of an IS field is the Event reason code defined in Section 3.3.1.4, "Event reason code". This data type should be used only for user-defined tables (see Section 2.5.3.6 - Table). The reverse is not true, since in some circumstances, it is more appropriate to use the CWE data type for user-defined tables.

B.22 MSG - message type

HL7 Component Table - MSG – Message Type

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	3	ID	R	0076	Message Code	R	
2	3	ID	R	0003	Trigger Event	R	
3	7	ID	R	0354	Message Structure	R	

Definition: This field contains the message type, trigger event, and the message structure ID for the message.

Maximum Length: 15.

Note: Replaces the CM data type used in 2.16.9.9 MSH-9 as of v 2.5.

B.22.1 Message Code (ID)

Definition: Specifies the message type code. Refer to HL7 Table – Message Type in section 2.17.1 for valid values.

This table contains values such as ACK, ADT, ORM, ORU etc.

See section 2.5.1- Messages for further discussion.

B.22.2 Trigger Event (ID)

Definition: Specifies the trigger event code. Refer to HL7 Table – Event Type in section 2.17.2 for valid values.

This table contains values like A01, O01, R01 etc.

See the HL7 Standard version 2.5.1 Section 2.3.1 – Trigger Events for further discussion.

B.22.3 Message Structure (ID)

Definition: Specifies the abstract message structure code. Refer to HL7 Table 0354 – Message Structure in section 2.17.3 for valid values.

B.23 NDL – name with date and location

HL7 Component Table - NDL – Name with Date and Location

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	406	CNN	O		Name	R	
2	26	TS	O		Start Date/time	RE	
3	26	TS	O		End Date/time	RE	
4	20	IS	O	0302	Point of Care	X	
5	20	IS	O	0303	Room	X	
6	20	IS	O	0304	Bed	X	
7	227	HD	O		Facility	X	
8	20	IS	O	0306	Location Status	X	
9	20	IS	O	0305	Patient Location Type	X	
10	20	IS	O	0307	Building	X	
11	20	IS	O	0308	Floor	X	

Definition: Specifies the name of the person performing a service, when the person performed the service and where the person performed the service.

Maximum Length: 835

Note: Replaces the CM data type used in sections 4.5.3.32 and 7.4.1.32-(OBR-32), 4.5.3.33 and 7.4.1.33 - (OBR-33) 4.5.3.34 and 7.4.1.34 - (OBR-34) 4.5.3.35 and 7.4.1.35 - (OBR-35) as of v 2.5.

B.23.1 Name (CNN)

Definition: This component specifies the name of the person performing a service.

B.23.2 Start date/time (TS)

Definition: This component specifies the starting date and time for when the person is performing the service.

B.23.3 End Date/time (TS)

Definition: This component specifies the ending date and time for when the person is performing the service.

B.23.4 Point of Care (IS)

Definition: This component specifies the code for the point where patient care is administered. It is conditional on NDL. 9 Person Location Type (e.g., nursing unit or department or clinic). After floor, it is the most general patient location designation. Refer to *User-defined Table 0302 - Point of care* for suggested values

B.23.5 Room (IS)

Definition: Patient room. After point of care, it is the most general location designation. Refer to *User-defined Table 0303 - Room* for suggested values.

B.23.6 Bed (IS)

Definition: This component specifies the code for the patient's bed. After room, it is the most general location designation. Refer to *User-defined Table 0304 - Bed* for suggested values.

B.23.7 Facility (HD)

Definition: This component is subject to site interpretation but generally describes the highest level physical designation of an institution, medical center or enterprise. It is the most general location designation.

B.23.8 Location Status (IS)

Definition: This component specifies the code for the status or availability of the location. For example, it may convey bed status. Refer to *User-defined Table 0306 - Location status* for suggested values.

B.23.9 Location Type (IS)

Definition: Location type is the categorization of the location defined by facility, building, floor, point of care, room or bed. Although not a required field, when used, it may be the only populated field. Usually includes values such as nursing unit, department, clinic, SNF, physician's office. Refer to *User-defined Table 0305 - Person location type* for suggested values.

B.23.10 Building (IS)

Definition: This component specifies the code for the building where the person is located. After facility, it is the most general location designation. Refer to *User-defined Table 0307 - Building* for suggested values.

B.23.11 Floor (IS)

Definition: This component specifies the code for the floor where the person is located. After building, it is the most general location designation. Refer to *User-defined Table 0308 - Floor* for suggested values.

B.24 NM - numeric

HL7 Component Table - NM – Numeric

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	16				Numeric		

Definition: A number represented as a series of ASCII numeric characters consisting of an optional leading sign (+ or -), the digits and an optional decimal point. In the absence of a sign, the number is assumed to be positive. If there is no decimal point the number is assumed to be an integer.

Maximum Length: 16

Examples:

```
|999|
|-123.792|
```

Leading zeros, or trailing zeros after a decimal point, are not significant. For example, the following two values with different representations, "01.20" and "1.2," are identical. Except for the optional leading sign (+ or -) and the optional decimal point (.), no non-numeric ASCII characters are allowed. Thus, the value <12 should be encoded as a structured numeric (SN) (preferred) or as a string (ST) (allowed, but not

B.25 PL - person location

HL7 Component Table - PL– Person Location

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	20	IS	O	0302	Point of Care	RE	
2	20	IS	O	0303	Room	X	
3	20	IS	O	0304	Bed	X	
4	227	HD	O		Facility	RE	
5	20	IS	O	0306	Location Status	RE	
6	20	IS	C	0305	Person Location Type	RE	
7	20	IS	O	0307	Building	X	
8	20	IS	O	0308	Floor	X	
9	199	ST	O		Location Description	RE	
10	427	EI	O		Comprehensive Location Identifier	RE	
11	227	HD	O		Assigning Authority for Location	RE	

Definition: This data type is used to specify a patient location within a healthcare institution. Which components are valued depends on the needs of the site. For example for a patient treated at home, only the person location type is valued. It is most commonly used for specifying patient locations, but may refer to other types of persons within a healthcare setting.

Maximum Length: 1230

Note: This data type contains several location identifiers that should be thought of in the following order from the most general to the most specific: facility, building, floor, point of care, room, bed.
Additional data about any location defined by these components can be added in the following components: person location type, location description and location status.

Example: Nursing Unit

A nursing unit at Community Hospital: 4 East, room 136, bed B

```
4E^136^B^CommunityHospital^^N^^^
```

Example: Clinic

A clinic at University Hospitals: Internal Medicine Clinic located in the Briones building, 3rd floor.

```
InternalMedicine^^^UniversityHospitals^^C^Briones^3^
```

Example: Home

The patient was treated at his home.

```
^^^^^H^^^
```

B.25.1 Point of Care (IS)

Definition: This component specifies the code for the point where patient care is administered. It is conditional on PL.6 Person Location Type (e.g., nursing unit or department or clinic). After floor, it is the most general patient location designation. Refer to *User-defined Table 0302 - Point of care* for suggested values.

B.25.2 Room (IS)

Definition: This component specifies the code for the patient's room. After point of care, it is the most general person location designation. Refer to *User-defined Table 0303 - Room* for suggested values.

B.25.3 Bed (IS)

Definition: This component specifies the code for the patient's bed. After room, it is the most general person location designation. Refer to *User-defined Table 0304 - Bed* for suggested values.

B.25.4 Facility (HD)

Definition: This component is subject to site interpretation but generally describes the highest level physical designation of an institution, medical center or enterprise. It is the most general person location designation.

(See Section *AB.1B.19*, "*HD - hierarchic designator*" for discussion of data type.)

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be redefined (given a different user-defined table number and name) by the technical committee responsible for that segment.

B.25.5 Location Status (IS)

Definition: This component specifies the code for the status or availability of the location. For example, it may convey bed status. Refer to *User-defined Table 0306 - Location status* for suggested values.

B.25.6 Person Location Type (IS)

Definition: Person location type is the categorization of the person's location defined by facility, building, floor, point of care, room or bed. Although not a required field, when used, it may be the only populated field. It usually includes values such as nursing unit, department, clinic, SNF, physician's office. Refer to *User-defined Table 0305 - Person location type* for suggested values.

B.25.7 Building (IS)

Definition: This component specifies the code for the building where the person is located. After facility, it is the most general person location designation. Refer to *User-defined Table 0307 - Building* for suggested values.

B.25.8 Floor (IS)

Definition: This component specifies the code for the floor where the person is located. After building, it is the most general person location designation. Refer to *User-defined Table 0308 - Floor* for suggested values.

B.25.9 Location Description (ST)

Definition: This component describes the location in free text.

B.25.10 Comprehensive Location Identifier (EI)

Definition: The unique identifier that represents the physical location as a whole without regard for the individual components. This accommodates sites that may have a different method of defining physical units or who may code at a less granular level. For example, point of care, room, and bed may be 1 indivisible code.

B.25.11 Assigning Authority for Location (HD)

Definition: The entity that creates the data for the individual physical location components. If populated, it should be the authority for all components populated. Refer to *User-defined Table 0363 – Assigning authority* for suggested values for the first sub-component of the HD component, <namespace ID>.

This component makes it possible for codes to be differentiated when the field in which this data type is used repeats.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

By site agreement, implementors may continue to use *User-defined Table 0300 – Namespace ID* for the first sub-component.

B.26 PRL - parent result link

HL7 Component Table - PRL – Parent Result Link

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	483	CE	R		Parent Observation Identifier	R	Defined in the OBX-3 of the parent result.
2	20	ST	O		Parent Observation Sub-identifier	RE	Defined in the OBX-4 of the parent result.
3	250	TX	O		Parent Observation Value Descriptor	RE	Taken from the OBX-5 of the parent result.

Definition: Uniquely identifies the parent result's OBX segment related to the current order, together with the information in OBR-29-parent.

Usage Note: This data type is applied only to OBR-26 - Parent Result where it serves to make information available for other types of linkages (e.g., toxicology). This important information, together with the information in OBR-29-parent, uniquely identifies the parent result's OBX segment related to this order. The value of this OBX segment in the parent result is the organism or chemical species about which this battery reports. For example, if the current battery is an antimicrobial susceptibility, the parent results identified OBX contains a result that identifies the organism on which the susceptibility was run. This indirect linkage is preferred because the name of the organism in the parent result may undergo several preliminary values prior to finalization.

We emphasize that this field does not take the entire result field from the parent. It is meant only for the text name of the organism or chemical subspecies identified. This field is included only to provide a method for linking back to the parent result for those systems that could not generate unambiguous Observation IDs and sub-IDs.

This field is present only when the parent result is identified by OBR-29-parent and the parent spawns child orders for each of many results. See Chapter 7 for more details about this linkage.

Maximum Length: 755

Note: Replaces the CM data type used in sections 4.5.3.26 - OBR-26 and 7.4.1.26 - OBR-26 as of v 2.5.

B.26.1 Parent Observation Identifier (CE)

Definition: Contains the unique identifier of the parent observation as defined in the OBX-3 of the parent result. The value is the same as the OBX-3 of the parent.

B.26.2 Parent Observation Sub-identifier (ST)

Definition: Contains the sub-ID of the parent result as defined in the OBX-4 of the parent result. The value is the same as the OBX-4 of the parent.

B.26.3 Parent Observation Value Descriptor (TX)

Definition: Contains a descriptor of the parent observation value as specified in the OBX-5 of the parent result.

As an example, the third component may be used to record the name of the microorganism identified by the parent result directly. The organism in this case should be identified exactly as it is in the parent culture.

B.27 PT - processing type

HL7 Component Table - PT – Processing Type

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	1	ID	O	0103	Processing ID	R	
2	1	ID	O	0207	Processing Mode	RE	

Definition: This data type indicates whether to process a message as defined in HL7 Application (level 7) Processing rules.

Maximum Length: 3

B.27.1 Processing ID (ID)

A value that defines whether the message is part of a production, training, or debugging system. Refer to *HL7 Table 0103 - Processing ID* for valid values.

B.27.2 Processing Mode (ID)

A value that defines whether the message is part of an archival process or an initial load. Refer to *HL7 Table 0207 - Processing mode* for valid values.

B.28 SAD – street address

HL7 Component Table - SAD – Street Address

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	120	ST	O		Street or Mailing Address	R	
2	50	ST	O		Street Name	RE	
3	12	ST	O		Dwelling Number	RE	

Definition: This data type specifies an entity's street address and associated detail.

Maximum Length: 184

Note: Appears ONLY in the XAD data type

B.28.1 Street or Mailing Address (ST)

Definition: This component specifies the street or mailing address of a person or institution. When referencing an institution, this first component is used to specify the institution name. When used in connection with a person, this component specifies the first line of the address.

B.28.2 Street Name (ST)

B.28.3 Dwelling Number (ST)

B.29 SI - sequence ID

HL7 Component Table - SI – Sequence ID

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	4				Sequence ID		

Definition: A non-negative integer in the form of a NM field. The uses of this data type are defined in the chapters defining the segments and messages in which it appears.

Maximum Length: 4. This allows for a number between 0 and 9999 to be specified.

B.30 SN - structured numeric

HL7 Component Table - SN – Structured Numeric

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	2	ST	O		Comparator	RE	
2	15	NM	O		Num1	R	
3	1	ST	O		Separator/Suffix	RE	
4	15	NM	O		Num2	RE	

Definition: The structured numeric data type is used to unambiguously express numeric clinical results along with qualifications. This enables receiving systems to store the components separately, and facilitates the use of numeric database queries. The corresponding sets of values indicated with the <comparator> and <separator/suffix> components are intended to be the authoritative and complete set of values. If additional values are needed for the <comparator> and <separator/suffix> components, they should be submitted to HL7 for inclusion in the Standard.

If <num1> and <num2> are both non-null, then the separator/suffix must be non-null. If the separator is "-", the data range is inclusive; e.g., <num1> - <num2> defines a range of numbers x, such that: <num1> <=x<= <num2>.

Maximum Length: 36

B.30.1 Comparator (ST)

Defined as greater than, less than, greater than or equal, less than or equal, equal, and not equal, respectively (= ">" or "<" or ">=" or "<=" or "=" or "<>"

If this component is not valued, it defaults to equal ("=").

B.30.2 Num1 (NM)

A number.

B.30.3 Separator/Suffix (ST)

"-" or "+" or "/" or "." or ":"

Examples:

```
|>^100|                    (greater than 100)
|^100^-^200|               (equal to range of 100 through 200)
|^1^:^228|         (ratio of 1 to 128, e.g., the results of a serological test)
|^2^+|                     (categorical response, e.g., occult blood positivity)
```

B.30.4 Num2 (NM)

A number or null depending on the measurement.

B.31 SPS – specimen source

HL7 Component Table - SPS – Specimen Source

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	705	CWE	O		Specimen Source Name or Code	RE	
2	705	CWE	O	0371	Additives	X	
3	200	TX	O		Specimen Collection Method	RE	
4	705	CWE	O	0163	Body Site	RE	

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
5	705	CWE	O	0495	Site Modifier	X	
6	705	CWE	O		Collection Method Modifier Code	X	
7	705	CWE	O	0369	Specimen Role	X	

Definition: This data type identifies the site where the specimen should be obtained or where the service should be performed.

Maximum Length: 4436

Note: Replaces the CM data type used in 4.5.3.15 OBR-15, 7.4.1.15 OBR-15, 13.4.3.6 SAC-6 and 13.4.9.3 TCC-3 as of v 2.5. This data type is retained for backward compatibility only as on v 2.5, The reader is referred to the SPM segment defined in chapter 4.

B.31.1 Specimen Source Name or Code (CWE)

Definition: contains the specimen source name or code (as a CWE data type component). (Even in the case of observations whose name implies the source, a source may be required, e.g., blood culture-heart blood.)

A nationally recognized coding system is to be used for this field. Valid coding sources for this field include:

- HL7 table 0487 – Specimen Type (replaces HL7 table 0070 – Specimen source codes)
- SNOMED, etc.
- Veterinary medicine may choose the tables supported for the components of this field as decided by their industry.

B.31.2 Additives (CWE)

Definition: identifies an additive introduced to the specimen before or at the time of collection. Refer to HL7 Table 0371 – Additive in chapter 7 for valid values. The table's values are taken from NCCLS AUTO4. The value set can be extended with user specific values.

B.31.3 Specimen Collection Method (TX)

Definition: describes the method of collection when that information is a part of the order. When the method of collection is logically an observation result, it should be included as a result segment (i.e., OBX segment).

B.31.4 Body Site (CWE)

Definition: This component specifies the body site from which the specimen was obtained. A nationally recognized coding system is to be used for this field. Valid coding sources for this field include:

- *HL7 Table 0163 - Body site*
- SNOMED

B.31.5 Site Modifier (CWE)

Definition: modifies body site. For example, the site could be antecubital fossa, and the site modifier "right." Refer to HL7 Table 0495 Body Site Modifier for allowed values.

B.31.6 Collection Method Modifier Code (CWE)

Definition: Indicates whether the specimen is frozen as part of the collection method. Suggested values are F (Frozen); R (Refrigerated). If the component is blank, the specimen is assumed to be at room temperature.

B.31.7 Specimen Role (CWE)

Definition: indicates the role of the sample. Refer to *User-defined Table 0369 – Specimen role* for suggested values. Each of these values is normally identifiable by the systems and its components and can influence processing and data management related to the specimen.

B.32 ST - string data

HL7 Component Table - ST – String Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	199				String Data		

Maximum Length: 199

String data is left justified with trailing blanks optional. Any displayable (printable) ACSII characters (hexadecimal values between 20 and 7E, inclusive, or ASCII decimal values between 32 and 126), except the defined escape characters and defined delimiter characters.

Example:

```
|almost any data at all|
```

To include any HL7 delimiter character (except the segment terminator) within a string data field, use the appropriate HL7 escape sequence (see Section 2.7.1, "Formatting Codes").

Usage note: The ST data type is intended for short strings (e.g., less than 200 characters). For longer strings the TX or FT data types should be used (see Sections *AB.1B.35*, "*TX - text data*" or *AB.1B.18*, "*FT - formatted text data*").

Alternate character set note: ST - string data may also be used to express other character sets. See Section 2.15.9.18, "Character set," and Section 2.15.9.20, "Alternate character set handling" for details.

B.33 TM – time

HL7 Component Table - TM –Time

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
	16				Time		

Definition: Specifies the hour of the day with optional minutes, seconds, fraction of second using a 24-hour clock notation and time zone.

Maximum Length: 16

As of v 2.3, the number of characters populated (excluding the time zone specification) specifies the precision.

Format: HH[MM[SS[.S[S[S[S]]]]]][+/-ZZZZ]

Thus:

the first two are used to specify a precision of "hour"

the first four are used to specify a precision of "minute"

the first six are used to specify a precision of "second"

the first eight are used to specify a precision of "one tenth of a second"

the first eleven are used to specify a precision of " one ten thousandths of a second"

Example: |0630| specifies 6: 30 AM.

The fractional seconds could be sent by a transmitter who requires greater precision than whole seconds. Fractional representations of minutes, hours or other higher-order units of time are not permitted.

Note: The time zone [+/-ZZZZ], when used, is restricted to legally-defined time zones and is represented in HHMM format.

The time zone of the sender may be sent optionally as an offset from the coordinated universal time (previously known as Greenwich Mean Time). Where the time zone is not present in a particular TM field but is included as part of the date/time field in the MSH segment, the MSH value will be used as the default time zone. Otherwise, the time is understood to refer to the local time of the sender.

Examples:

Time	Description
|0000|	midnight
|235959+1100|	1 second before midnight in a time zone eleven hours ahead of Universal Coordinated Time (i.e., East of Greenwich).
|0800|	Eight AM, local time of the sender.
|093544.2312|	44.2312 seconds after Nine thirty-five AM, local time of sender.
|13|	1pm (with a precision of hours), local time of sender.

Prior to v 2.3, this data type was specified in the format HHMM[SS[.SSSS]][+/-ZZZZ]. As of v 2.3 minutes are no longer required. By site-specific agreement, HHMM[SS[.SSSS]][+/-ZZZZ] may be used where backward compatibility must be maintained.

B.34 TS - time stamp

HL7 Component Table - TS – Time Stamp

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	24	DTM	R		Time	R	
2	1	ID	B	0529	Degree of Precision	X	

Definition: Specifies a point in time.

Maximum Length: 26

```
Format: YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ]^<degree of precision>
```

B.34.1 Time (DTM)

Definition: The point in time.

See section *B.10 DTM – date/time* for the full description of this component.

B.34.2 Degree of Precision (ID)

Retained only for purposes of backward compatibility as of v 2.3. Refer to component 1 for current method of designating degree of precision.

Definition: Indicates the degree of precision of the time stamp (Y = year, L = month, D = day, H = hour, M = minute, S = second). Refer to HL7 Table 0529 – Precision for valid value.

Note that the Degree of Precision is either the same as or overrides the precision indicated by the first component. It may not indicate greater precision. In the following example, the second component overrides the first and indicates a lesser precision, April 1999.

```
|199904011200^L|
```

Refer to *HL7 table 0529 – Precision* for valid values.

B.35 TX - text data

HL7 Component Table - TX – Text Data

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
					Text Data		

Definition: String data meant for user display (on a terminal or printer). Such data would not necessarily be left justified since leading spaces may contribute greatly to the clarity of the presentation to the user. Because this type of data is intended for display, it may contain certain escape character sequences designed to control the display. Escape sequence formatting is defined in Section 2.7 "Use of escape sequences in text fields". Leading spaces should be included. Trailing spaces should be removed.

Example:

```
|  leading spaces are allowed.|
```

Since TX data is intended for display purposes, the repeat delimiter, when used with a TX data field, implies a series of repeating lines to be displayed on a printer or terminal. Therefore, the repeat delimiters are regarded as paragraph terminators or hard carriage returns (e.g., they would display as though a CR/LF were inserted in the text (DOS type system) or as though a LF were inserted into the text (UNIX style system)).

A receiving system would word-wrap the text between repeat delimiters in order to fit it into an arbitrarily sized display window but start any line beginning with a repeat delimiter on a new line.

Maximum Length: 65536

To include alternative character sets, use the appropriate escape sequence. See Section 2.15.9.18 “MSH-18 Character Set” and Section 2.15.9.20 “MSH-20 Alternate Character Set Handling Scheme”.

B.36 VID – version identifier

HL7 Component Table - VID – Version Identifier

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	5	ID	O	0104	Version ID	R	
2	483	CE	O	0399	Internationalization Code	RE	
3	483	CE	O		International Version ID	X	

Maximum Length: 973

B.36.1 Version ID (ID)

Used to identify the HL7 version. Refer to HL7 Table 0104 – Version ID in section 2.15.9.12 for valid values.

B.36.2 Internationalization Code (CE)

Used to identify the international affiliate country code. The values to be used are those of ISO 3166 -1:1977. The ISO 3166 table has three separate forms of the country code: HL7 specifies that the 3-character (alphabetic) form be used for the country code.

Refer to *HL7 Table 0399 – Country code* in section 2.15.9.17 for the 3-character codes as defined by ISO 3166 table.

B.36.3 International Version ID (CE)

This field component identifies international affiliate's version; it is especially important when the international affiliate has more than a single local version associated with a single US version.

B.37 XAD - extended address

HL7 Component Table - XAD – Extended Address

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	184	SAD	O		Street Address	RE	
2	120	ST	O		Other Designation	RE	
3	50	ST	O		City	RE	
4	50	ST	O		State or Province	RE	
5	12	ST	O		Zip or Postal Code	RE	
6	3	ID	O	0399	Country	RE	
7	3	ID	O	0190	Address Type	RE	
8	50	ST	O		Other Geographic Designation	X	
9	20	IS	O	0289	County/Parish Code	RE	
10	20	IS	O	0288	Census Tract	X	
11	1	ID	O	0465	Address Representation Code	X	
12	53	DR	B		Address Validity Range	X	deprecated as of v 2.5
13	26	TS	O		Effective Date	X	
14	26	TS	O		Expiration Date	X	

Definition: This data type specifies the address of a person, place or organization plus associated information.

Maximum Length: 631

Note: Replaces the AD data type as of v 2.3.

Example of usage for US:

```
|1000 Hospital Lane^Ste. 123^Ann Arbor ^MI^99999^USA^B^^WA^|
```

This would be formatted for postal purposes as

```
1000 Hospital Lane
Ste. 123
Ann Arbor MI 99999
```

Example of usage for Australia:

```
|14th Floor^1000 Hospital Lane^Sidney^QLD^9999|
```

This would be formatted for postal purposes using the same rules as for the American example as

```
14th Floor
1000 Hospital Lane
Sidney QLD 9999
```

International note: Countries typically have a standard method of formatting addresses. This data type does not specify the formatting usages, only the components of a postal address.

B.37.1 Street Address (SAD)

See the *Section B.28 SAD – street address* for description of components.

B.37.2 Other Designation (ST)

Second line of address. In US usage, it qualifies address. Examples: Suite 555 or Fourth Floor. When referencing an institution, this component specifies the street address.

B.37.3 City (ST)

Definition: This component specifies the city, or district or place where the addressee is located depending upon the national convention for formatting addresses for postal usage.

B.37.4 State or Province (ST)

Definition: This component specifies the state or province where the addressee is located. State or province should be represented by the official postal service codes for that country.

B.37.5 Zip or Postal Code (ST)

Definition: This component specifies the zip or postal code where the addressee is located. Zip or postal codes should be represented by the official codes for that country. In the US, the zip code takes the form 99999[-9999], while the Canadian postal code takes the form A9A9A9, and the Australian Postcode takes the form 9999.

B.37.6 Country (ID)

Definition: This component specifies the country where the addressee is located. HL7 specifies that the 3-character (alphabetic) form of ISO 3166 be used for the country code. Refer to HL7 Table 0399 – Country code in section 2.15.9.17 for valid values.

B.37.7 Address Type (ID)

Definition: This component specifies the kind or type of address. Refer to *HL7 Table 0190 - Address type* for valid values.

B.37.8 Other Geographic Designation (ST)

Definition: This component specifies any other geographic designation. It includes county, bioregion, SMSA, etc.

B.37.9 County/Parish Code (IS)

A code that represents the county in which the specified address resides. *User-defined Table 0289 - County/parish* is used as the HL7 identifier for the user-defined table of values for this component. When this component is used to represent the county (or parish), component 8 <other geographic designation> should not duplicate it (i.e., the use of <other geographic designation> to represent the county is allowed only for the purpose of backward compatibility, and should be discouraged in this and future versions of HL7).

Allowable values: codes defined by government.

B.37.10 Census Tract (IS)

A code that represents the census tract in which the specified address resides. *User-defined Table 0288 - Census tract* is used as the HL7 identifier for the user-defined table of values for this component.

Allowable Values: codes defined by government.

B.37.11 Address Representation Code (ID)

Different <name/address types> and representations of the same name/address should be described by repeating of this field, with different values of the <name/address type> and/or <name/address representation> component.

Note: Also note that this new component remains in "alphabetic" representation with each repetition of the fields using these data types. I.e. even though the address may be represented in an ideographic character set, this component will remain represented in an alphabetic character set.

Refer to *HL7 table 0465 – Name/address representation* for valid values.

In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying.

B.37.12 Address Validity Range (DR)

This component cannot be fully expressed. Identified as v 2.4 erratum. Retained for backward compatibility only as of v 2.5. Refer to Effective Date and Expiration Date components.

This component contains the start and end date/times, which define the period in which this address was valid.

B.37.13 Effective Date (TS)

Definition: The first date, if known, on which the address is valid and active.

B.37.14 Expiration Date (TS)

Definition: The last date, if known, on which the address is valid and active.

B.38 XCN - extended composite ID number and name for persons

HL7 Component Table - XCN – Extended Composite ID Number and Name for Persons

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	15	ST	O		ID Number	RE	
2	194	FN	O		Family Name	R	
3	30	ST	O		Given Name	RE	
4	30	ST	O		Second and Further Given Names or Initials Thereof	RE	
5	20	ST	O		Suffix (e.g., JR or III)	RE	
6	20	ST	O		Prefix (e.g., DR)	RE	
7	5	IS	B	0360	Degree (e.g., MD)	X	deprecated as of v 2.5
8	4	IS	C	0297	Source Table	CE	
9	227	HD	O	0363	Assigning Authority	RE	
10	1	ID	O	0200	Name Type Code	RE	
11	1	ST	O		Identifier Check Digit	X	
12	3	ID	C	0061	Check Digit Scheme	X	
13	5	ID	O	0203	Identifier Type Code	RE	
14	227	HD	O		Assigning Facility	RE	
15	1	ID	O	0465	Name Representation Code	X	
16	483	CE	O	0448	Name Context	X	
17	53	DR	B		Name Validity Range	X	
18	1	ID	O	0444	Name Assembly Order	X	
19	26	TS	O		Effective Date	X	
20	26	TS	O		Expiration Date	X	
21	199	ST	O		Professional Suffix	X	

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
22	705	CWE	O		Assigning Jurisdiction	X	
23	705	CWE	O		Assigning Agency or Department	X	

Maximum Length: 3002

Note: Replaces CN data type as of v 2.3.

This data type is used extensively appearing in the PV1, ORC, RXO, RXE, OBR and SCH segments, as well as others, where there is a need to specify the ID number and name of a person.

Example without assigning authority and assigning facility:

```
|1234567^Everyman^Adam^A^III^DR^PHD^ADT01^^L^4^M11^MR|
```

Examples with assigning authority and assigning facility:

Dr. Harold Hippocrates' provider ID was assigned by the Provider Master and was first issued at Good Health Hospital within the Community Health and Hospitals System. Since IS table values (first component of the HD) were not used for assigning authority and assigning facility, components 2 and 3 of the HD data type are populated and demoted to sub-components as follows:

```
12188^Hippocrates^Harold^H^IV^Dr^MD^^&Provider Master.Community Health and
    Hospitals&L^L^9^M10^DN^&Good Health Hospital.Community Health and
    Hospitals&L^A
```

Ludwig van Beethoven's medical record number was assigned by the Master Patient Index and was first issued at Fairview Hospital within the University Hospitals System.

```
10535^van Beethoven&van^Ludwig^A^III^Dr^PHD^^&MPI.Community Health and
    Hospitals&L^L^3^M10^MR^& Good Health Hospital.Community Health and
    Hospitals&L^A
```

B.38.1 ID number (ST)

This string refers to the coded ID according to a user-defined table, defined by the 9th component. If the first component is present, either the source table or the assigning authority must be valued.

B.38.2 Family Name (FN)

This component allows full specification of the surname of a person. Where appropriate, it differentiates the person's own surname from that of the person's partner or spouse, in cases where the person's name may contain elements from either name. It also permits messages to distinguish the surname prefix (such as "van" or "de") from the surname root. See section *B.17*, " *FN - family name*".

B.38.3 Given Name (ST)

First name.

B.38.4 Second and Further Given Names or Initials Thereof (ST)

Multiple middle names may be included by separating them with spaces.

B.38.5 Suffix (ST)

Used to specify a name suffix (e.g., Jr. or III).

B.38.6 Prefix (ST)

Used to specify a name prefix (e.g., Dr.).

B.38.7 Degree (IS)

Retained for backward compatibility only as of v 2.5. See Professional Suffix component.

Used to specify an educational degree (e.g., MD). Refer to *User-defined Table 0360 – Degree* for suggested values.

B.38.8 Source Table (IS)

User-defined Table 0297 – CN ID source is used as the HL7 identifier for the user-defined table of values for this component. Used to delineate the first component. Populate if Assigning Authority or Assigning Facility is not populated and ID Number is populated.

B.38.9 Assigning Authority (HD)

The assigning authority is a unique identifier of the system (or organization or agency of department) that creates the data. *User-defined Table 0363 – Assigning authority* is used as the HL7 identifier for the user-defined table of values for the first sub-component of the HD component, <namespace ID>.

For Cancer Registry reporting, the State or Provincial license number for a Physician should be transmitted. When this is transmitted, the Namespace ID used in HD here, or also in CNN and related datatypes, should be populated with a string following the pattern “xy_PHYSICIANLICENSE” where “xy” is the two-letter state or province code.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

By site agreement, implementers may continue to use *User-defined Table 0300 – Namespace ID* for the first sub-component.

B.38.10 Name Type Code (ID)

A code that represents the type of name. Refer to *HL7 Table 0200 - Name type* for valid values. See Section *AB.1B.40.7*, "*Name Type Code (ID)*".

B.38.11 Identifier Check Digit (ST)

The check digit in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

B.38.12 Check Digit Scheme (ID)

Definition: Contains the code identifying the check digit scheme employed.

Refer to *HL7 Table 0061 - Check digit scheme* for valid values.

B.38.13 Identifier Type Code (IS)

A code corresponding to the type of identifier. In some cases, this code may be used as a qualifier to the <assigning authority> component. Refer to *HL7 Table 0203 - Identifier type* for suggested values.

B.38.14 Assigning Facility (HD)

The place or location identifier where the identifier was first assigned to the person. This component is not an inherent part of the identifier but rather part of the history of the identifier: as part of this data type, its existence is a convenience for certain intercommunicating systems.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

B.38.15 Name Representation Code (ID)

Different <name/address types> and representations of the same <name/address> should be described by repeating of this field, with different values of the <name/address type> and/or <name/address representation> component.

Note: This new component remains in "alphabetic" representation with each repetition of the field using these data types. I.e., even though the name may be represented in an ideographic character set, this component will remain represented in an alphabetic character set.

Refer to *HL7 Table 0465 – Name/address representation* for valid values.

In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying.

B.38.16 Name Context (CE)

This component is used to designate the context in which a name is used. The main use case is in Australian healthcare for indigenous patients who prefer to use different names when attending different healthcare institutions. Another use case occurs in the US where health practitioners can be licensed under slightly different names and the reporting of the correct name is vital for administrative purposes. Refer to *User-defined Table 0448 – Name context* for suggested values.

B.38.17 Name Validity Range (DR)

Retained for backward compatibility only as of v 2.5. Refer to XCN.19 Effective Date and XCN.20 Expiration Date instead. This component cannot be fully expressed and has been identified as v 2.4 erratum.

This component contains the start and end date/times that define the period during which this name was valid. See section 2.A.20 of the HL7 Standard for description of subcomponents of DR.

B.38.18 Name Assembly Order (ID)

A code that represents the preferred display order of the components of this person name. Refer to HL7 Table 0444 - Name Assembly Order for valid values.

B.38.19 Effective Date (TS)

Definition: The first date, if known, on which the address is valid and active.

B.38.20 Expiration Date (TS)

Definition: The last date, if known, on which the address is valid and active.

B.38.21 Professional Suffix (ST)

Definition: Used to specify an abbreviation, or a string of abbreviations denoting qualifications that support the person's profession, (e.g., licenses, certificates, degrees, affiliations with professional societies, etc.). The Professional Suffix normally follows the Family Name when the Person Name is used for display purposes. Please note that this component is an unformatted string and is used for display purposes only. Detailed information regarding the contents of Professional Suffix is obtained using appropriate segments in Chapter 15, Personnel Management.

B.38.22 Assigning Jurisdiction (CWE)

Definition: The geo-political body that assigned the identifier in component 1.

See section, *B.7.9*, "*Assigning Jurisdiction (CWE)*" for further detail.

B.38.23 Assigning Agency or Department (CWE)

Definition: The agency or department that assigned the identifier in component 1.

See section *B.7.10*, "*Assigning Agency or Department (CWE)*" for further details.

B.39 XON - extended composite name and identification number for organizations

Component Table - XON – Extended Composite Name and Identification Number for Organizations

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	50	ST	O		Organization Name	RE	
2	20	IS	O	0204	Organization Name Type Code	RE	
3	4	NM	B		ID Number	X	Use the Organization Identifier component instead
4	1	NM	O		Check Digit	X	
5	3	ID	O	0061	Check Digit Scheme	X	
6	227	HD	O	0363	Assigning Authority	RE	
7	5	ID	O	0203	Identifier Type Code	RE	
8	227	HD	O		Assigning Facility	RE	
9	1	ID	O	0465	Name Representation Code	X	
10	20	ST	O		Organization Identifier	RE	

Maximum Length: 567

This data type is used in fields (e.g., PV2-23, NK1-13, and OBR-44) to specify the name and ID number of an organization.

Example 1:

The ID for Good Health Hospital was assigned by the Community Health and Hospitals enterprise's Hospital Master and was first issued at the Central Offices.

```
Good Health Hospital^L^716^9^M10^&Hospital Master.Community Health and
    Hospitals&L^XX^&Central Offices.Community Health and Hospitals&L^A
```

Example 2:

Good Health Hospital has another ID that was issued by CMS. Assigning Authority, CMS, values only the first HD component, an IS data type and assigning facility is not relevant. This information might be transmitted accordingly:

```
Good Health Hospital^L^4544^3^M10^CMS^XX^^A
```

B.39.1 XON-1 Organization Name (ST-50, Required or empty)

Definition: The name of the specified organization.

B.39.2 XON-2 Organization Name Type Code (IS-20, Optional)

Definition: A code that represents the type of name i.e., legal name, display name. Refer to *User-defined Table 0204 - Organizational Name Type* for suggested values.

B.39.3 XON-3 ID Number (NM-4, Not supported)

This component has been retained for backward compatibility only as of v 2.5. It is recommended to use component 10 Organization identifier that accommodates alphanumeric identifiers.

B.39.4 XON-4 Check Digit (NM-1, Not supported)

Definition: The check digit in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

This component is Not Supported in NAACCR Cancer Registry messaging.

B.39.5 XON-5 Check Digit Scheme (ID-3, Not supported)

Definition: Contains the code identifying the check digit scheme employed.

The check digit scheme codes are defined in *HL7 Table 0061 - Check digit scheme*.

This component is Not Supported in NAACCR Cancer Registry messaging.

B.39.6 XON-6 Assigning Authority (HD, Optional)

Definition: The assigning authority is a unique identifier of the system (or organization or agency or department) that creates the data. Assigning authorities are unique across a given HL7 implementation. Refer to *User-defined Table 0363 - Assigning Authority* for suggested values.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

By site agreement, implementers may continue to use *User-defined Table 0300 – Namespace ID* for the first sub-component.

B.39.7 XON-7 Identifier Type Code (ID-5, Not supported)

Definition: A code corresponding to the type of identifier. In some cases, this code may be used as a qualifier to the "Assigning authority" component. Refer to *HL7 Table 0203 - Identifier type* for suggested values.

This component is Not Supported in NAACCR Cancer Registry messaging.

B.39.8 XON-8 Assigning Facility ID (HD, Optional)

Definition: The place or location identifier where the identifier was first assigned to the person. This component is not an inherent part of the identifier but rather part of the history of the identifier: as part of this data type, its existence is a convenience for certain intercommunicating systems.

Note: When the HD data type is used in a given segment as a component of a field of another data type, *User-defined Table 0300 - Namespace ID* (referenced by the first sub-component of the HD component) may be re-defined (given a different user-defined table number and name) by the technical committee responsible for that segment.

B.39.9 XON-9 Name Representation Code (ID-1, Not supported)

Definition: Different <name/address types> and representations of the same <name/address> should be described by repeating of this field, with different values of the <name/address type> and/or <name/address representation> component.

Note: This new component remains in “alphabetic” representation with each repetition of the field using these data types, i.e. even though the name may be represented in an ideographic character set, this component will remain represented in an alphabetic character set.

Refer to *HL7 Table 0465 – Name/address representation code* for valid values.

In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying.

This component is Not Supported in NAACCR Cancer Registry messaging.

B.39.10 XON-10 Organization identifier (ST-20, Required or empty)

Definition: This component contains the sequence of characters (the code) that uniquely identifies the item being referenced by XON.1 Organization Name. This component replaces XON.3 ID Number as of v 2.5.

Note: The check digit and code identifying check digit scheme are null if Organization identifier is alphanumeric.

For Cancer Registry reporting, national identifiers or provincial identifiers should be used for this field. In the US, this should be the CLIA identifier if the organization is a laboratory. In Canada, the local jurisdictional authority may mandate the use of certain identifiers for pathology laboratories; please contact the local authority for guidance.

B.40 XPN - extended person name

HL7 Component Table - XPN– Extended Person Name

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	194	FN	O		Family Name	R	
2	30	ST	O		Given Name	RE	
3	30	ST	O		Second and Further Given Names or Initials Thereof	RE	
4	20	ST	O		Suffix (e.g., JR or III)	RE	
5	20	ST	O		Prefix (e.g., DR)	RE	
6	6	IS	B	0360	Degree (e.g., MD)	X	
7	1	ID	O	0200	Name Type Code	RE	
8	1	ID	O	0465	Name Representation Code	X	
9	483	CE	O	0448	Name Context	X	
10	53	DR	B		Name Validity Range	X	
11	1	ID	O	0444	Name Assembly Order	X	
12	26	TS	O		Effective Date	X	
13	26	TS	O		Expiration Date	X	
14	199	ST	O		Professional Suffix	X	

Maximum Length: 1103

Note: Replaces PN data type as of v 2.3.

Internationalization Note: In countries using ideographic or syllabic (phonetic) character sets, it is sometimes necessary to send the name in one or both of these formats, as well as an alphabetic format. The switching between the different character sets can be accomplished using a character set such as JIS X 0202 - ISO 2022 which provides an escape sequence for switching among different character sets and among single-byte and multi-byte character representations. When the name field is repeated, the different repetitions of the name may be represented by these different character sets. The details are as follows. (See also Section 2.9.2, "Escape sequences supporting multiple character sets for PN, XPN, XCN, XON, XAD, FT, ST and TX data types.")

HL7 supports the following standards for Japanese characters:

JIS X 0201 for ISO-IR 13 (Japanese Katakana)

JIS X 0201 for ISO-IR 14 (Japanese Romaji)

JIS X 0208 for ISO-IR 87 (Japanese Kanji, Hiragana and Katakana)

JIS X 0212 for ISO-IR 159 (supplementary Japanese Kanji)

HL7 supports the following standards for European characters:

ISO 8859 (1-9) for ISO-IR 100, 101, 109, 110, 144,127, 126, 138 and 148.

Character sets are referenced in HL7 as ASCII, 8859/1,8859/2, ISO IR14, ISO IR87, and ISO IR159. DICOM uses codes laid out in ISO 2375, of the form 'ISO-IR xxx'. HL7 supports this naming as well, to facilitate interoperability.

HL7 uses the Basic G0 Set of the International Reference Version of ISO 646:1990 (ISO IR-6) as the default character repertoire for character strings. This is a single-byte character set, identical to ASCII.

Each repetition of a XPN, XON, XCN, or XAD field is assumed to begin with the default character set. If another character set is to be used, the HL7 defined escape sequence used to announce that character set must be

at the beginning of the repetition, and the HL7 defined escape sequence used to start the default character set must be at the end of the repetition. Note also that several character sets may be intermixed within a single repetition as long as the repetition ends with a return to the default character set.

An application must specify which character sets it supports in the field "MSH-18 Character Sets" and which character set handling scheme it supports in the field MSH-20-Alternate character set handling scheme. It is assumed that the sending and receiving applications are aware of how to map character set names (i.e., ISO-IR xxx) to escape sequences.

For example, in many Japanese messages there is a mix of Romaji (i.e., Roman characters), Katakana (phonetic representation of foreign words), Hiragana (phonetic representation of Japanese words) and Kanji (pictographs). Such a message would require 4 character sets be specified in the MSH.

References for Internationalization of Name

	Reference	Description
1.	"Understanding Japanese Information Processing" by Ken Lunde, O'Reilly Press	
2.	NEMA PS3.5 - DICOM Part 5: Data Structure and Semantics	
3.	ANSI X3.4:1986	ASCII character set
4.	ISO 646:1990	Information Processing - ISO 7-bit coded character set for information interchange
5.	ISO/IEC 2022:1994	Information Technology - Character code structure and extension techniques
6.	ISO 2375:1986	Data Processing - Procedure for the registration of escape sequences
7.	ISO 6429:1990	Information Processing - Control functions for 7-bit and 8-bit coded character sets
8.	ISO 8859 (1-9)	Information Processing - 8-bit single-byte coded graphic character sets - parts 1-9
9.	ENV 41 503:1990	Information systems interconnection - European graphic character repertoires and their coding
10.	ENV 41 508:1990	Information systems interconnection - East European graphic character repertoires and their coding
11.	JIS X 0201-1976	Code for Information Exchange
12.	JIS X 0212-1990	Code of the supplementary Japanese Graphic Character set for information interchange
13.	JIS X 0208-1990	Code for the Japanese Graphic Character set for information interchange
14.	RFC 1468	Japanese Character Encoding for Internet Messages

Character Repertoires supported by DICOM are defined in Part 5, section 6.1. The DICOM Standard is available free on the Internet at http://medical.nema.org/.

Examples of names requiring only one iteration of the field where the XPN is applied:

Example 1: Adam A. Everyman III PhD

```
|Everyman^Adam^A^III^DR^^L^^^^^^^PHD|
```

Example 2:Ludwig van Beethoven

```
|Beethoven&van^Ludwig^^^^^L|
```

Example 3: Hermann Egon Mayer zur alten Schildesche

```
|Mayer^Hermann^Egon^zur alten Schildesche|
```

Example 4: Sister Margot

```
|^Margot^^^Sister^^C|
```

Example 5: Dr Harold Henry Hippocrates, AO, MBBS, ASCTS. A physician who holds an Honorarium, an academic degree and a board certificate. Professional suffixes are displayed as concatenated. (AO = Order of Australia (Honorarium), MBBS = Bachelor of Medicine and Bachelor of Surgery, ASCTS = Australian Society of Cardiothoracic Surgeons

```
|Hippocrates^Harold^Henry^^Dr^L^^^^^^^^ AO.MBBS.ASCTS|
```

Example 6: Nancy N. Nightingale, RN, PHN, BSN, MSN. A registered nurse who is a Public Health Nurse with 2 academic degrees, BSN and MSN.

```
|Nightingale^Nancy^N^^^^^^^^^^RN, PHN, BSN, MSN|
```

Example 7: H.Horrace Helper Jr., RN, CNP. A registered nurse who is a certified nurse practitioner.

```
|Helper^H^Horrace^Jr^^^^^^^^^^ RN, CNP|
```

Example 8: Mevrouw Irma Jongeneel de Haas. An individual whose birth name (geboortenaam) is de Haas and whose partner's name is Jongeneel.

```
| Jongeneel-de Haas&de&Haas&&Jongeneel^Irma^^^Mevrouw^^L |
```

Examples of names requiring more than one iteration of the field where the XPN is applied:

Example 9: Herr Prof. Dr. med. Joachim W. Dudeck

```
|Dudeck^Joachim^W.^^Dr.med.^^L^^^^^^^ MD ~Dudeck^J.W.^^^Herr Prof.Dr.^^D|
```

Example 10: Herr Dr. Otto Graf Lambsdorff mdB a.D. According to German law “Adelstitel” like “Graf” or “Baron” belongs to the family name and therefore must be encoded in the family name field separated by blanks.

```
|Graf Lambsdorff&Graf&Lambsdorff^Otto^^^Dr.^^L~Graf
   Lambsdorff&Graf&Lambsdorff^Otto^^mdB a.D.^Herr Dr.^^D|
```

Example 11: Walter Kemper genannt (named) Mölleken

```
|Kemper^Walter^^^^^L~Mölleken^Walter^^^^^A|
```

Example 12: Herr Dr. med. Dr. h.c. Egon Maier

```
|Maier^Egon^^^Dr.med. Dr.h.c.^^L^^^^^^^MD~Maier^Egon^^^Herr Dr.med. Dr.h.c^^D|
```

Example 13: Herr Dipl.Ing. Egon Maier

```
|Maier^Egon^^^^^L^^^^^^^ DIPL~Maier^Egon^^^Herr Dipl.Ing.^^D|
```

Example 14: Frau Gerda Müller geb. Maier, verheiratet seit 16.2.2000

```
|Müller^Gerda^^^Frau^^L^^^^^20000216~Maier^Gerda^^^Frau^^M|
```

Example 15: President Adam A Everyman III, president from 1997 until 2001, aka Sonny Everyman

```
|Everyman^Adam^A.^III^President^^L~^^^^Mr.
   President^^D^^^^^19970816^20010320~Everyman^Sonny^^^^^A|
```

Example 16: Michio Kimura

This example doesn't use title and degrees, but shows the repetition of this name for different purposes.

```
|Kimura^Michio^^^^^L^I~Kimura^Michio^^^^^L^P~ Kimura^Michio^^^^^L^A|
```

B.40.1 Family Name (FN)

This component allows full specification of the surname of a person. Where appropriate, it differentiates the person's own surname from that of the person's partner or spouse, in cases where the person's name may contain elements from either name. It also permits messages to distinguish the surname prefix (such as "van" or "de") from the surname root. See section *B.17*, "*FN - family name*".

B.40.2 Given Name (ST)

First name.

B.40.3 Second and Further Given Names or Initials Thereof (ST)

Multiple middle names may be included by separating them with spaces.

B.40.4 Suffix (ST)

Used to specify a name suffix (e.g., Jr. or III).

B.40.5 Prefix (ST)

Used to specify a name prefix (e.g., Dr.).

B.40.6 Degree (IS)

Retained for backward compatibility only as of v 2.5. See Professional Suffix component.

Used to specify an educational degree (e.g., MD). Refer to *User-defined Table 0360 – Degree* for suggested values.

B.40.7 Name Type Code (ID)

A code that represents the type of name. Refer to *HL7 Table 0200 - Name type* for valid values.

Note: The content of Legal Name is country specific. In the US the legal name is the same as the current married name.

B.40.8 Name Representation Code (ID)

Different <name/address types> and representations of the same <name/address> should be described by repeating of this field, with different values of the <name/address type> and/or <name/address representation> component.

Note: This new component remains in "alphabetic" representation with each repetition of the field using these data types, i.e., even though the name may be represented in an ideographic character set, this component will remain represented in an alphabetic character set.

Refer to *HL7 Table 0465 – Name/address representation* for valid values.

In general this component provides an indication of the representation provided by the data item. It does not necessarily specify the character sets used. Thus, even though the representation might provide an indication of what to expect, the sender is still free to encode the contents using whatever character set is desired. This component provides only hints for the receiver, so it can make choices regarding what it has been sent and what it is capable of displaying.

B.40.9 Name Context (CE)

This component is used to designate the context in which a name is used. The main use case is in Australian healthcare for indigenous patients who prefer to use different names when attending different healthcare institutions. Another use case occurs in the US where health practitioners can be licensed under slightly different names and the reporting of the correct name is vital for administrative purposes. Refer to *User-defined Table 0448 – Name context* for suggested values.

B.40.10 Name Validity Range (DR)

This component cannot be fully expressed. Identified as v 2.4 erratum. Retained for backward compatibility only as of v 2.5. Refer to Effective Date and Expiration Date components.

This component contains the start and end date/times, which define the period during which this name was valid. See *Section B.9 DR – date range* for description of subcomponents.

B.40.11 Name Assembly Order (ID)

A code that represents the preferred display order of the components of this person name. Refer to *HL7 0444 – Name assembly order* for valid values.

B.40.12 Effective date (TS)

Definition: The first date, if known, on which the person name is valid and active.

B.40.13 Expiration date (TS)

Definition: The last date, if known, on which the person name is valid and active.

B.40.14 Professional Suffix (ST)

Definition: Used to specify an abbreviation, or a string of abbreviations denoting qualifications that support the person's profession, (e.g., licenses, certificates, degrees, affiliations with professional societies, etc.). The Professional Suffix normally follows the Family Name when the Person Name is used for display purposes. Please note that this component is an unformatted string and is used for display purposes only. Detailed information regarding the contents of Professional Suffix is obtained using appropriate segments in the HL7 Standard version 2.5.1, Chapter 15, Personnel Management.

B.41 XTN - extended telecommunication number

HL7 Component Table - XTN – Extended Telecommunication Number

SEQ	LEN	DT	OPT	TBL#	COMPONENT NAME	NAACCR USAGE	NAACCR COMMENTS
1	199	ST	B		Telephone Number	CE	deprecated as of 2.3
2	3	ID	O	0201	Telecommunication Use Code	RE	
3	8	ID	O	0202	Telecommunication Equipment Type	RE	
4	199	ST	O		Email Address	RE	
5	3	NM	O		Country Code	RE	
6	5	NM	O		Area/City Code	RE	
7	9	NM	O		Local Number	RE	
8	5	NM	O		Extension	RE	
9	199	ST	O		Any Text	RE	
10	4	ST	O		Extension Prefix	RE	
11	6	ST	O		Speed Dial Code	RE	
12	199	ST	C		Unformatted Telephone number	RE	

Maximum Length: 850

Note: Components five through nine reiterate the basic function of the first component in a delimited form that allows the expression of both local and international telephone numbers. As of 2.3, the recommended form for the telephone number is to use the delimited form rather than the unstructured form supported by the first component (which is left in for backward compatibility only).

Note: Replaces TN data type as of v 2.3

Example: A fax number

```
^ORN^FX^^^734^6777777
```

B.41.1 Telephone Number (ST)

This component has been retained for backward compatibility only as of version 2.3.

Definition: Specifies the telephone number in a predetermined format that includes an optional extension, beeper number and comment.

Format: [**N**NN] [(999)]999-9999 [X99999] [B99999] [C any text]

Note: Because this component has been deprecated a new data type has not been defined to replace the formatted ST.

Note for reporting to Cancer Registries: This component should not be used unless it is not in any way possible to populate components 6-8 for the phone number.

B.41.2 Telecommunication Use Code (ID)

A code that represents a specific use of a telecommunication number. Refer to *HL7 Table 0201 - Telecommunication use code* for valid values.

B.41.3 Telecommunication Equipment Type (ID)

A code that represents the type of telecommunication equipment. Refer to *HL7 Table 0202 - Telecommunication equipment type* for valid values.

B.41.4 Email Address (ST)

Internationalization note: To make this data type interoperate with CEN's Telecommunication data attribute group, NAACCR allows use of the second component for email addresses. The presence of an email address is specified by the addition of the value *NET* to the Phone Use Code table, and the type of Internet address is specified with the values *Internet* and *X.400* to the Phone Equipment Type table. When used for an Internet address, the first component of the XTN data type will be null. If the @-sign is being used as a subcomponent delimiter, the HL7 subcomponent escape sequence may be used when encoding an Internet address (see Section Country Code (NM).

B.41.5 Country Code (NM)

B.41.6 Area/city Code (NM)

B.41.7 Phone Number (NM)

B.41.8 Extension (NM)

B.41.9 Any Text (ST)

Definition: Contains comments with respect to the telephone number.

```
Example: |^^^^^^^^Do not use after 5PM
```

B.41.10 Extension Prefix (ST)

The characters established within a company's internal telephone system network used as a prefix to the Extension component for internal dialing. Note that the use of Extension Prefix requires that the Extension component be valued and that digits, as well as special characters (e.g., *, #) may be used.

B.41.11 Speed Dial Code (ST)

The characters established within a company's internal telephone system used in place of the (external) telephone number to facilitate calling because its length is shorter than that of the telephone number. Note that digits, as well as special characters (e.g., *, #) may be used.

B.41.12 Unformatted Telephone Number (ST)

Definition: An expression of the telephone number as an unparsible string.

The phone number was entered as free text and sending system does not know how to parse it.

```
Example: |^^^^^^^^^^^1-800-Dentist|
```

6 Appendix C: Summary Table

NAACCR OPT: R - required; RE - required or empty; O - optional; C - Conditional on the trigger event or on some other field(s); CE – Conditional or empty; X - not used with this trigger event, may be skipped; B - left in for backward compatibility with previous version of HL7.
"Note" column contains usage notes and references to vocabulary from which values are drawn; also includes constants where applicable.

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
MSH	1	00001	Field separator	ST	R					
MSH	2	00002	Encoding characters	ST	R					
MSH	3	00003	Sending application	HD	RE					
MSH	3.1		Namespace ID	IS	RE					Values: Table 0300
MSH	3.2		Universal ID (CLIA number)	ST	CE					
MSH	3.3		Universal ID Type	ID	CE					Values: Table 0301
MSH	4	00004	Sending facility	HD	R	7010, 7020	Path Lab Name	4		
MSH	4.1		Namespace ID	IS	RE	7020	Path Lab Name	4		Values: Table 0300
MSH	4.2		Universal ID (CLIA number)	ST	CE	7010	Reporting Facility ID	3		
MSH	4.3		Universal ID Type	ID	CE					Values: Table 0301
MSH	5	00005	Receiving application	HD	RE					
MSH	5.1		Namespace ID	IS	RE					Values: Table 0300
MSH	5.2		Universal ID (CLIA number)	ST	CE					
MSH	5.3		Universal ID Type	ID	CE					Values: Table 0301
MSH	6	00006	Receiving facility	HD	RE					
MSH	6.1		Namespace ID	IS	RE					Values: Table 0300
MSH	6.2		Universal ID (CLIA number)	ST	CE					
MSH	6.3		Universal ID Type	ID	CE					Values: Table 0301
MSH	7	00007	Date/Time of message	TS	R	7490	E-Path Date/Time Stamp	63		
MSH	8	00008	Security	ST	X					
MSH	9	00009	Message type	MSG	R					"ORU^R01^ORU_R01"
MSH	9.1		Message Code	ID	R					Values: Table 0076
MSH	9.2		Trigger Event	ID	R					Values: Table 0003
MSH	9.3		Message Structure	ID	R					Values: Table 0354
MSH	10	00010	Message control ID	ST	R	7500	Message Control ID	65		
MSH	11	00011	Processing ID	PT	R	7510	Processing ID	66		
MSH	11.1		Processing ID	ID	R	7510	Processing ID	66		Values: Table 0103
MSH	11.2		Processing Mode	ID	RE					Values: Table 0207
MSH	12	00012	Version ID	VID	R					"2.5.1"

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
MSH	12.1		Version ID	ID	R					Values: Table 0104
MSH	12.2		Internationalization Code	CE	RE					
MSH	12.2.1		Identifier	ST	R					Values: Table 0399
MSH	12.2.2		Text	ST	RE					
MSH	12.2.3		Name of Coding System	ID	R					"HL70399" or "ISO3166_1"
MSH	12.2.4		Alternate Identifier	ST	RE					
MSH	12.2.5		Alternate Text	ST	RE					
MSH	12.2.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
MSH	12.3		International Version ID	CE	X					
MSH	13	00013	Sequence number	NM	RE					
MSH	14	00014	Continuation pointer	ST	CE					
MSH	15	00015	Accept acknowledgment type	ID	X					
MSH	16	00016	Application acknowledgment type	ID	X					
MSH	17	00017	Country code	ID	RE					Values: Table 0399
MSH	18	00692	Character set	ID	X				3	
MSH	19	00693	Principal language of message	CE	RE					
MSH	19.1		Identifier	ST	R					Values from ISO 639
MSH	19.2		Text	ST	RE					
MSH	19.3		Name of Coding System	ID	R					Values: "ISO639" or value from Table 0396
MSH	19.4		Alternate Identifier	ST	RE					
MSH	19.5		Alternate Text	ST	RE					
MSH	19.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
MSH	20	01317	Alternate character set handling scheme	ID	X					
MSH	21	01598	Message Profile Identifier	EI	RE				3	
MSH	21.1		Entity Identifier	ST	R					
MSH	21.2		Namespace ID	IS	RE					Values: Table 0300
MSH	21.3		Universal ID	ST	CE					
MSH	21.4		Universal ID Type	ID	CE					Values: Table 0301
SFT	1	01834	Software Vendor Organization	XON	R				1	
SFT	1.1		Organization name	ST	RE					
SFT	1.2		Organization name type code	IS	RE					Values: Table 0204
SFT	1.3		ID number	NM	X					
SFT	1.4		Check digit	NM	X					
SFT	1.5		Code identifying the check digit scheme	ID	X					
SFT	1.6		Assigning authority	HD	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
SFT	1.6.1		Namespace ID	IS	RE					Values: Table 0300
SFT	1.6.2		Universal ID (CLIA number)	ST	CE					
SFT	1.6.3		Universal ID Type	ID	CE					Values: "CLIA" or value from Table 0301
SFT	1.7		Identifier type code	ID	RE					Values: Table 0203
SFT	1.8		Assigning facility	HD	RE					
SFT	1.8.1		Namespace ID	IS	RE					Values: Table 0300
SFT	1.8.2		Universal ID (CLIA number)	ST	CE					
SFT	1.8.3		Universal ID Type	ID	CE					Values: Table 0301
SFT	1.9		Name representation code	ID	X					
SFT	1.10		Organization identifier	ST	RE					
SFT	2	01835	Software Certified Version or Release Number	ST	R				1	
SFT	3	01836	Software Product Name	ST	R				1	
SFT	4	01837	Software Binary ID	ST	R				1	
SFT	5	01838	Software Product Information	TX	RE				1	
SFT	6	01839	Software Install Date	TS	RE				1	
DSC	1	00014	Continuation Pointer	ST	RE					
DSC	2	01354	Continuation Style	ID	RE					Values: Table 0398
MSA	1	00018	Acknowledgment Code	ID	R					Values: Table 0008
MSA	2	00010	Message Control ID	ST	R					
MSA	3	00020	Text Message	ST	CE					
MSA	4	00021	Expected Sequence Number	NM	RE					
MSA	5	00022	Delayed Acknowledgment Type		W					Withdrawn from HL7 standard as of version 2.5
MSA	6	00023	Error Condition	CE	CE					Values: Table 0357
MSA	6.1		Identifier	ST	R					Values: Table 0357
MSA	6.2		Text	ST	RE					
MSA	6.3		Name of Coding System	ID	R					"HL70357"
MSA	6.4		Alternate Identifier	ST	RE					
MSA	6.5		Alternate Text	ST	RE					
MSA	6.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
ERR	1	00024	Error Code and Location	ELD	X					
ERR	2	01812	Error Location	ERL	RE					
ERR	2.1		Segment ID	ST	R					
ERR	2.2		Segment Sequence	NM	R					
ERR	2.3		Field Position	NM	RE					
ERR	2.4		Field Repetition	NM	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ERR	2.5		Component Number	NM	RE					
ERR	2.6		Sub-Component Number	NM	RE					
ERR	3	01813	HL7 Error Code	CWE	R					Values: Table 0357
ERR	3.1		Identifier	ST	R					Values: Table 0357
ERR	3.2		Text	ST	RE					
ERR	3.3		Name of coding system	ID	R					"HL70357"
ERR	3.4		Alternate identifier	ST	RE					
ERR	3.5		Alternate text	ST	RE					
ERR	3.6		Name of Alternate coding system	ID	RE					Values: Table 0396
ERR	3.7		Coding System Version ID	ST	CE					
ERR	3.8		Alternate Coding System Version ID	ST	CE					
ERR	3.9		Original Text	ST	RE					
ERR	4	01814	Severity	ID	R					Values: Table 0516
ERR	5	01815	Application Error Code	CWE	X					
ERR	6	01816	Application Error Parameter	ST	X					
ERR	7	01817	Diagnostic Information	TX	RE					
ERR	8	01818	User Message	TX	RE					
ERR	9	01819	Inform Person Indicator	IS	X					
ERR	10	01820	Override Type	CWE	X					
ERR	11	01821	Override Reason Code	CWE	X					
ERR	12	01822	Help Desk Contact Point	XTN	RE					
ERR	12.1		Telephone number	ST	X					
ERR	12.2		Telecommunication use code	ID	RE					Values: Table 0201
ERR	12.3		Telecommunication equipment type	ID	RE					Values: Table 0202
ERR	12.4		Email address	ST	RE					
ERR	12.5		Country code	NM	RE					
ERR	12.6		Area/city code	NM	RE					
ERR	12.7		Phone number	NM	RE					
ERR	12.8		Extension	NM	RE					
ERR	12.9		Any text	ST	RE					
ERR	12.10		Extension Prefix	ST	RE					
ERR	12.11		Speed Dial Code	ST	RE					
ERR	12.12		Unformatted Telephone Number	ST	RE					
PID	1	00104	Set ID - PID	SI	R					
PID	2	00105	Patient ID (External)	CX	RE					
PID	2.1		ID number	ST	R					
PID	2.2		Check digit	ST	X					
PID	2.3		Code identifying check digit schema	ID	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	2.4		Assigning Authority	HD	R					
PID	2.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
PID	2.4.2		Assigning Authority.Universal ID	ST	CE					
PID	2.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
PID	2.5		Identifier type code	ID	RE					Values: Table 0203
PID	2.6		Assigning facility	HD	RE					
PID	2.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
PID	2.6.2		Assigning facility.Universal ID	ST	CE					
PID	2.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
PID	2.7		Effective Date	DT	RE					
PID	2.8		Expiration Date	DT	RE					
PID	2.9		Assigning Jurisdiction	CWE	RE					
PID	2.9.1		Identifier	ST	R					
PID	2.9.2		Text	ST	RE					
PID	2.9.3		Name of Coding System	ID	R					Values: Table 0396
PID	2.9.4		Alternate Identifier	ST	RE					
PID	2.9.5		Alternate Text	ST	RE					
PID	2.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	2.9.7		Coding System Version ID	ST	CE					
PID	2.9.8		Alternate Coding System Version ID	ST	CE					
PID	2.9.9		Original Text	ST	RE					
PID	2.10		Assigning Agency or Department	CWE	RE					
PID	2.10.1		Identifier	ST	R					
PID	2.10.2		Text	ST	RE					
PID	2.10.3		Name of Coding System	ID	R					Values: Table 0396
PID	2.10.4		Alternate Identifier	ST	RE					
PID	2.10.5		Alternate Text	ST	RE					
PID	2.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	2.10.7		Coding System Version ID	ST	CE					
PID	2.10.8		Alternate Coding System Version ID	ST	CE					
PID	2.10.9		Original Text	ST	RE					
PID	3	00106	Patient identifier list	CX	R	2300, 2320	Social Security Number, Medical Record Number	20, 22	8	
PID	3.1		ID number	ST	R	2300	Medical Record Number	22		
PID	3.2		Check digit	ST	X					
PID	3.3		Code identifying check digit schema	ID	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	3.4		Assigning Authority	HD	R					
PID	3.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
PID	3.4.2		Assigning Authority.Universal ID	ST	CE					
PID	3.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
PID	3.5		Identifier type code	ID	RE					Values: Table 0203
PID	3.6		Assigning facility	HD	RE					
PID	3.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
PID	3.6.2		Assigning facility.Universal ID	ST	CE					
PID	3.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
PID	3.7		Effective Date	DT	RE					
PID	3.8		Expiration Date	DT	RE					
PID	3.9		Assigning Jurisdiction	CWE	RE					
PID	3.9.1		Identifier	ST	R					
PID	3.9.2		Text	ST	RE					
PID	3.9.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.9.4		Alternate Identifier	ST	RE					
PID	3.9.5		Alternate Text	ST	RE					
PID	3.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.9.7		Coding System Version ID	ST	CE					
PID	3.9.8		Alternate Coding System Version ID	ST	CE					
PID	3.9.9		Original Text	ST	RE					
PID	3.10		Assigning Agency or Department	CWE	RE					
PID	3.10.1		Identifier	ST	R					
PID	3.10.2		Text	ST	RE					
PID	3.10.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.10.4		Alternate Identifier	ST	RE					
PID	3.10.5		Alternate Text	ST	RE					
PID	3.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.10.7		Coding System Version ID	ST	CE					
PID	3.10.8		Alternate Coding System Version ID	ST	CE					
PID	3.10.9		Original Text	ST	RE					
PID	Repeat									
PID	3.1		ID number	ST	RE	2320	Social Security Number	20		
PID	3.2		Check digit	ST	X					
PID	3.3		Code identifying check digit schema	ID	X					
PID	3.4		Assigning Authority	HD	R					
PID	3.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	3.4.2		Assigning Authority.Universal ID	ST	CE					
PID	3.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
PID	3.5		Identifier type code	ID	RE					Values: Table 0203
PID	3.6		Assigning facility	HD	RE					
PID	3.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
PID	3.6.2		Assigning facility.Universal ID	ST	CE					
PID	3.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
PID	3.7		Effective Date	DT	RE					
PID	3.8		Expiration Date	DT	RE					
PID	3.9		Assigning Jurisdiction	CWE	RE					
PID	3.9.1		Identifier	ST	R					
PID	3.9.2		Text	ST	RE					
PID	3.9.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.9.4		Alternate Identifier	ST	RE					
PID	3.9.5		Alternate Text	ST	RE					
PID	3.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.9.7		Coding System Version ID	ST	CE					
PID	3.9.8		Alternate Coding System Version ID	ST	CE					
PID	3.9.9		Original Text	ST	RE					
PID	3.10		Assigning Agency or Department	CWE	RE					
PID	3.10.1		Identifier	ST	R					
PID	3.10.2		Text	ST	RE					
PID	3.10.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.10.4		Alternate Identifier	ST	RE					
PID	3.10.5		Alternate Text	ST	RE					
PID	3.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.10.7		Coding System Version ID	ST	CE					
PID	3.10.8		Alternate Coding System Version ID	ST	CE					
PID	3.10.9		Original Text	ST	RE					
PID	Repeat									
PID	3.1		ID number	ST	RE					
PID	3.2		Check digit	ST	X					
PID	3.3		Code identifying check digit schema	ID	X					
PID	3.4		Assigning Authority	HD	R					
PID	3.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
PID	3.4.2		Assigning Authority.Universal ID	ST	CE					
PID	3.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
PID	3.5		Identifier type code	ID	RE					Values: Table 0203

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	3.6		Assigning facility	HD	RE					
PID	3.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
PID	3.6.2		Assigning facility.Universal ID	ST	CE					
PID	3.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
PID	3.7		Effective Date	DT	RE					
PID	3.8		Expiration Date	DT	RE					
PID	3.9		Assigning Jurisdiction	CWE	RE					
PID	3.9.1		Identifier	ST	R					
PID	3.9.2		Text	ST	RE					
PID	3.9.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.9.4		Alternate Identifier	ST	RE					
PID	3.9.5		Alternate Text	ST	RE					
PID	3.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.9.7		Coding System Version ID	ST	CE					
PID	3.9.8		Alternate Coding System Version ID	ST	CE					
PID	3.9.9		Original Text	ST	RE					
PID	3.10		Assigning Agency or Department	CWE	RE					
PID	3.10.1		Identifier	ST	R					
PID	3.10.2		Text	ST	RE					
PID	3.10.3		Name of Coding System	ID	R					Values: Table 0396
PID	3.10.4		Alternate Identifier	ST	RE					
PID	3.10.5		Alternate Text	ST	RE					
PID	3.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	3.10.7		Coding System Version ID	ST	CE					
PID	3.10.8		Alternate Coding System Version ID	ST	CE					
PID	3.10.9		Original Text	ST	RE					
PID	4	00107	Alternate patient ID - PID	CX	X				8	
PID	5	00108	Patient name	XPN	R	2230, 2240, 2250	Name--Last, Name--First, and Name--Middle	10-12	8	
PID	5.1		Family Name	FN	R	2230	Name--Last	10		
PID	5.1.1		Surname	ST	R	2230	Name--Last	10		
PID	5.1.2		Own Surname Prefix	ST	RE					
PID	5.1.3		Own Surname	ST	RE					
PID	5.1.4		Surname Prefix From Partner/Spouse	ST	RE					
PID	5.1.5		Surname From Partner/Spouse	ST	RE					
PID	5.2		Given Name	ST	RE	2240	Name--First	11		
PID	5.3		Middle initial or name	ST	RE	2250	Name--Middle	12		

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	5.4		Suffix	ST	RE					
PID	5.5		Prefix	ST	RE					
PID	5.6		Degree	ST	X					
PID	5.7		Name type code	ID	RE					Values: Table 0200
PID	5.8		Name representation code	ID	X					
PID	5.9		Name Context	CE	X					
PID	5.10		Name Validity Range	DR	X					
PID	5.11		Name Assembly Order	ID	X					
PID	5.12		Effective Date	TS	X					
PID	5.13		Expiration Date	TS	X					
PID	5.14		Professional Suffix	ST	X					
PID	6	00109	Mother's maiden name	XPN	X					
PID	7	00110	Date/time of birth	TS	RE	240	Birth Date	18		
PID	8	00111	Sex	IS	RE	220	Sex	21		Values: Table 0001
PID	9	00112	Patient alias	XPN	RE	2280	Name-Alias		8	
PID	9.1		Family Name	FN	R					
PID	9.1.1		Surname	ST	R					
PID	9.1.2		Own Surname Prefix	ST	RE					
PID	9.1.3		Own Surname	ST	RE					
PID	9.1.4		Surname Prefix From Partner/Spouse	ST	RE					
PID	9.1.5		Surname From Partner/Spouse	ST	RE					
PID	9.2		Given Name	ST	RE					
PID	9.3		Middle initial or name	ST	RE					
PID	9.4		Suffix	ST	RE					
PID	9.5		Prefix	ST	RE					
PID	9.6		Degree	ST	X					
PID	9.7		Name type code	ID	RE					Values: Table 0200
PID	9.8		Name representation code	ID	X					
PID	9.9		Name Context	CE	X					
PID	9.10		Name Validity Range	DR	X					
PID	9.11		Name Assembly Order	ID	X					
PID	9.12		Effective Date	TS	X					
PID	9.13		Expiration Date	TS	X					
PID	9.14		Professional Suffix	ST	X					
PID	10	00113	Race	CE	RE	160	Race 1	67	6	
PID	10.1		Identifier	ST	R	160	Race 1	67		Values: Table 0005
PID	10.2		Text	ST	RE					
PID	10.3		Name of coding system	ST	R					"HL70005"

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	10.4		Alternate identifier	ST	RE					
PID	10.5		Alternate text	ST	RE					
PID	10.6		Name of Alternate coding system	ST	RE					Values: Table 0396
PID	11	00114	Patient Address	XAD	RE	70, 80, 100, 2330, 7520	Addr at DX--City, Addr at DX--State, Addr at DX--Postal Code, and Addr at DX--No & Street, Address Type Code	14-16, 13, 68	4	
PID	11.1		Street Address	SAD	RE	2330	Addr at DX--No & Street	13		
PID	11.1.1		Street or Mailing Address	ST	R	2330	Addr at DX--No & Street	13		
PID	11.1.2		Street Name	ST	RE					
PID	11.1.3		Dwelling Number	ST	RE					
PID	11.2		Other designation	ST	RE	2330	Addr at DX--No & Street	13		
PID	11.3		City	ST	RE	70	Addr at DX--City	14		
PID	11.4		State or province	ST	RE	80	Addr at DX--State	15		
PID	11.5		ZIP or postal code	ST	RE	100	Addr at DX--Postal Code	16		
PID	11.6		Country	ID	RE					Values: Table 0399 or ISO3166-1
PID	11.7		Address type	ID	RE	7520	Address Type Code	68		Values: Table 0190
PID	11.8		Other geographic designation	ST	X					
PID	11.9		County/parish code	IS	RE					Values: Table 0289
PID	11.10		Census tract	IS	X					
PID	11.11		Address representation code	ID	X					
PID	11.12		Address Validity Range	DR	X					
PID	11.13		Effective Date	TS	X					
PID	11.14		Expiration Date	TS	X					
PID	12	00115	County Code	IS	X					
PID	13	00116	Phone Number - Home	XTN	RE	2360	Telephone	17	8	
PID	13.1		Telephone number	ST	CE	2360	Telephone	17		
PID	13.2		Telecommunication use code	ID	RE					Values: Table 0201
PID	13.3		Telecommunication equipment type	ID	RE					Values: Table 0202
PID	13.4		Email address	ST	RE					
PID	13.5		Country code	NM	RE					
PID	13.6		Area/city code	NM	RE	2360	Telephone	17		

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	13.7		Phone number	NM	RE	2360	Telephone	17		
PID	13.8		Extension	NM	RE					
PID	13.9		Any text	ST	RE					
PID	13.10		Extension Prefix	ST	RE					
PID	13.11		Speed Dial Code	ST	RE					
PID	13.12		Unformatted Telephone Number	ST	RE					
PID	14	00117	Phone Number - Business	XTN	RE				4	
PID	14.1		Telephone number	ST	CE					
PID	14.2		Telecommunication use code	ID	RE					Values: Table 0201
PID	14.3		Telecommunication equipment type	ID	RE					Values: Table 0202
PID	14.4		Email address	ST	RE					
PID	14.5		Country code	NM	RE					
PID	14.6		Area/city code	NM	RE					
PID	14.7		Phone number	NM	RE					
PID	14.8		Extension	NM	RE					
PID	14.9		Any text	ST	RE					
PID	14.10		Extension Prefix	ST	RE					
PID	14.11		Speed Dial Code	ST	RE					
PID	14.12		Unformatted Telephone Number	ST	RE					
PID	15	00118	Primary Language	CE	RE					
PID	15.1		Identifier	ST	R					Values: Table 0296 or ISO639
PID	15.2		Text	ST	RE					
PID	15.3		Name of coding system	ID	R					Values: Table 0396; "HL70296" or "ISO639"
PID	15.4		Alternate identifier	ST	RE					
PID	15.5		Alternate text	ST	RE					
PID	15.6		Name of Alternate coding system	ID	RE					Values: Table 0396
PID	16	00119	Marital Status	CE	RE	150	Marital Status			
PID	16.1		Identifier	ST	R	150	Marital Status			Values : Table 0002
PID	16.2		Text	ST	RE					
PID	16.3		Name of coding system	ID	R					"HL70002"
PID	16.4		Alternate identifier	ST	RE					
PID	16.5		Alternate text	ST	RE					
PID	16.6		Name of Alternate coding system	ID	RE					Values: Table 0396
PID	17	00120	Religion	CE	RE	260	Religion			
PID	17.1		Identifier	ST	R	260	Religion			Values: Table 0006
PID	17.2		Text	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	17.3		Name of coding system	ID	R					"HL70006"
PID	17.4		Alternate identifier	ST	RE					
PID	17.5		Alternate text	ST	RE					
PID	17.6		Name of Alternate coding system	ID	RE					Values: Table 0396
PID	18	00121	Patient Account Number	CX	CE					
PID	18.1		ID number	ST	RE					
PID	18.2		Check digit	ST	X					
PID	18.3		Code identifying check digit schema	ID	X					
PID	18.4		Assigning Authority	HD	R					
PID	18.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
PID	18.4.2		Assigning Authority.Universal ID	ST	CE					
PID	18.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
PID	18.5		Identifier type code	ID	RE					Values: Table 0203
PID	18.6		Assigning facility	HD	RE					
PID	18.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
PID	18.6.2		Assigning facility.Universal ID	ST	CE					
PID	18.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
PID	18.7		Effective Date	DT	RE					
PID	18.8		Expiration Date	DT	RE					
PID	18.9		Assigning Jurisdiction	CWE	RE					
PID	18.9.1		Identifier	ST	R					
PID	18.9.2		Text	ST	RE					
PID	18.9.3		Name of Coding System	ID	R					Values: Table 0396
PID	18.9.4		Alternate Identifier	ST	RE					
PID	18.9.5		Alternate Text	ST	RE					
PID	18.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	18.9.7		Coding System Version ID	ST	CE					
PID	18.9.8		Alternate Coding System Version ID	ST	CE					
PID	18.9.9		Original Text	ST	RE					
PID	18.10		Assigning Agency or Department	CWE	RE					
PID	18.10.1		Identifier	ST	R					
PID	18.10.2		Text	ST	RE					
PID	18.10.3		Name of Coding System	ID	R					Values: Table 0396
PID	18.10.4		Alternate Identifier	ST	RE					
PID	18.10.5		Alternate Text	ST	RE					
PID	18.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
PID	18.10.7		Coding System Version ID	ST	CE					
PID	18.10.8		Alternate Coding System Version ID	ST	CE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	18.10.9		Original Text	ST	RE					
PID	19	00122	SSN Number - Patient	ST	CE					
PID	20	00123	Driver's License Number - Patient	DLN	X					
PID	21	00124	Mother's Identifier	CX	X				2	
PID	22	00125	Ethnic Group	CE	RE	190	Spanish/Hispanic Origin	78	4	
PID	22.1		Identifier	ST	R	190	Spanish/Hispanic Origin	78		Values: Table 0189
PID	22.2		Text	ST	RE					
PID	22.3		Name of coding system	ID	R					"HL70189"
PID	22.4		Alternate identifier	ST	RE					
PID	22.5		Alternate text	ST	RE					
PID	22.6		Name of Alternate coding system	ID	RE					Values: Table 0396
PID	23	00126	Birth Place	ST	RE					
PID	24	00127	Multiple Birth Indicator	ID	X					
PID	25	00128	Birth Order	NM	X					
PID	26	00129	Citizenship	CE	X					
PID	27	00130	Veterans Military Status	CE	X					
PID	28	00739	Nationality	CE	X					
PID	29	00740	Patient Death Date and Time	TS	RE					
PID	30	00741	Patient Death Indicator	ID	RE	1760	Vital Status			Values: Table 0136
PID	31	01535	Identity Unknown Indicator	ID	RE					Values: Table 0136
PID	32	01536	Identity Reliability Code	IS	RE					Values: Table 0445
PID	33	01537	Last Update Date/Time	TS	X					
PID	34	01538	Last Update Facility	HD	X					
PID	35	01539	Species Code	CE	X					
PID	36	01540	Breed Code	CE	X					
PID	37	01541	Strain	ST	X					
PID	38	01542	Production Class Code	CE	X					
PID	39	01840	Tribal Citizenship	CWE	RE					
PID	39.1		Identifier	ST	R					Values: Table 0171
PID	39.2		Text	ST	RE					
PID	39.3		Name of coding system	ID	R					"HL70171"
PID	39.4		Alternate identifier	ST	RE					
PID	39.5		Alternate text	ST	RE					
PID	39.6		Name of Alternate coding system	ID	RE					Values: Table 0396
PID	39.7		Coding System Version ID	ST	CE					
PID	39.8		Alternate Coding System Version ID	ST	CE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PID	39.9		Original Text	ST	RE					
NK1	1	00190	Set ID - NK1+	SI	R					
NK1	2	00191	Name	XPN	RE				4	
NK1	2.1		Family Name	FN	R					
NK1	2.1.1		Surname	ST	R					
NK1	2.1.2		Own Surname Prefix	ST	RE					
NK1	2.1.3		Own Surname	ST	RE					
NK1	2.1.4		Surname Prefix From Partner/Spouse	ST	RE					
NK1	2.1.5		Surname From Partner/Spouse	ST	RE					
NK1	2.2		Given Name	ST	RE					
NK1	2.3		Middle initial or name	ST	RE					
NK1	2.4		Suffix	ST	RE					
NK1	2.5		Prefix	ST	RE					
NK1	2.6		Degree	ST	X					
NK1	2.7		Name type code	ID	RE					Values: Table 0200
NK1	2.8		Name representation code	ID	X					
NK1	2.9		Name Context	CE	X					
NK1	2.10		Name Validity Range	DR	X					
NK1	2.11		Name Assembly Order	ID	X					
NK1	2.12		Effective Date	TS	X					
NK1	2.13		Expiration Date	TS	X					
NK1	2.14		Professional Suffix	ST	X					
NK1	3	00192	Relationship	CE	RE					
NK1	3.1		Identifier	ST	R					Values: Table 0063
NK1	3.2		Text	ST	RE					
NK1	3.3		Name of coding system	ID	R					"HL70063"
NK1	3.4		Alternate identifier	ST	RE					
NK1	3.5		Alternate text	ST	RE					
NK1	3.6		Name of Alternate coding system	ID	RE					Values: Table 0396
NK1	4	00193	Address	XAD	RE				4	
NK1	4.1		Street Address	SAD	RE					
NK1	4.1.1		Street or Mailing Address	ST	R					
NK1	4.1.2		Street Name	ST	RE					
NK1	4.1.3		Dwelling Number	ST	RE					
NK1	4.2		Other designation	ST	RE					
NK1	4.3		City	ST	RE					
NK1	4.4		State or province	ST	RE					
NK1	4.5		ZIP or postal code	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
NK1	4.6		Country	ID	RE					Values: Table 0399 or ISO3166-1
NK1	4.7		Address type	ID	RE					Values: Table 0190
NK1	4.8		Other geographic designation	ST	X					
NK1	4.9		County/parish code	IS	RE					Values: Table 0289
NK1	4.10		Census tract	IS	X					
NK1	4.11		Address representation code	ID	X					
NK1	4.12		Address Validity Range	DR	X					
NK1	4.13		Effective Date	TS	X					
NK1	4.14		Expiration Date	TS	X					
NK1	5	00194	Phone number	XTN	RE				4	
NK1	5.1		Telephone number	ST	CE					
NK1	5.2		Telecommunication use code	ID	RE					Values: Table 0201
NK1	5.3		Telecommunication equipment type	ID	RE					Values: Table 0202
NK1	5.4		Email address	ST	RE					
NK1	5.5		Country code	NM	RE					
NK1	5.6		Area/city code	NM	RE					
NK1	5.7		Phone number	NM	RE					
NK1	5.8		Extension	NM	RE					
NK1	5.9		Any text	ST	RE					
NK1	5.10		Extension Prefix	ST	RE					
NK1	5.11		Speed Dial Code	ST	RE					
NK1	5.12		Unformatted Telephone Number	ST	RE					
NK1	6	00195	Business phone number	XTN	X					
NK1	7	00196	Contact role	CE	X					
NK1	8	00197	Start date	DT	X					
NK1	9	00198	End date	DT	X					
NK1	10	00199	Next of kin/AP job title	ST	X					
NK1	11	00200	Next of kin/AP job code/class	JCC	X					
NK1	12	00201	Next of kin/AP employee number	CX	X					
NK1	13	00202	Organization name - NK1	XON	X					
NK1	14	00119	Marital status	CE	X					
NK1	15	00111	Sex	IS	X					
NK1	16	00110	Date/time of birth	TS	X					
NK1	17	00755	Living dependency	IS	X					
NK1	18	00145	Ambulatory status	IS	X					
NK1	19	00129	Citizenship	CE	X					
NK1	20	00118	Primary language	CE	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
NK1	21	00742	Living arrangement	IS	X					
NK1	22	00743	Publicity code	CE	X					
NK1	23	00744	Protection indicator	ID	X					
NK1	24	00745	Student indicator	IS	X					
NK1	25	00120	Religion	CE	X					
NK1	26	00746	Mother's maiden name	XPN	X					
NK1	27	00739	Nationality	CE	X					
NK1	28	00125	Ethnic group	CE	X					
NK1	29	00747	Contact reason	CE	X					
NK1	30	00748	Contact person's name	XPN	X					
NK1	31	00749	Contact person's telephone number	XTN	X					
NK1	32	00750	Contact person's address	XAD	X					
NK1	33	00751	Next of kin/AP's identifiers	CX	X					
NK1	34	00752	Job status	IS	X					
NK1	35	00113	Race	CE	X					
NK1	36	00753	Handicap	IS	X					
NK1	37	00754	Contact person social security #	ST	X					
NK1	38	01905	Next of Kin Birth Place	ST	X					
NK1	39	00146	VIP Indicator	IS	X					
PV1	1	00131	Set ID – PV1	SI	RE					
PV1	2	00132	Patient Class	IS	R					Values: Table 0004
PV1	3	00133	Assigned Patient Location	PL	X					
PV1	4	00134	Admission Type	IS	X					
PV1	5	00135	Preadmit Number	CX	X					
PV1	6	00136	Prior Patient Location	PL	X					
PV1	7	00137	Attending Doctor	XCN	RE				2	
PV1	7.1		ID Number	ST	RE	2460	Physician Managing	69		
PV1	7.2		Family name	FN	R					
PV1	7.2.1		Surname	ST	R					
PV1	7.2.2		Own Surname Prefix	ST	RE					
PV1	7.2.3		Own Surname	ST	RE					
PV1	7.2.4		Surname Prefix From Partner/Spouse	ST	RE					
PV1	7.2.5		Surname From Partner/Spouse	ST	RE					
PV1	7.2.1		Surname	ST	R					
PV1	7.2.2		Own Surname Prefix	ST	RE					
PV1	7.2.3		Own Surname	ST	RE					
PV1	7.2.4		Surname Prefix From Partner/Spouse	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PV1	7.2.5		Surname From Partner/Spouse	ST	RE					
PV1	7.3		Given name	ST	RE					
PV1	7.4		Second and Further Given Names or Initials Thereof	ST	RE					
PV1	7.5		Suffix	ST	RE					
PV1	7.6		Prefix	ST	RE					
PV1	7.7		Degree	IS	X					
PV1	7.8		Source table	IS	CE					Values: Table 0297
PV1	7.9		Assigning authority	HD	RE					
PV1	7.9.1		Namespace ID	IS	RE					Values: Table 0363
PV1	7.9.2		Universal ID	ST	CE					
PV1	7.9.3		Universal ID type	ID	CE					Values: Table 0301
PV1	7.10		Name type code	ID	RE					Values: Table 0200
PV1	7.11		Identifier check digit	ST	X					
PV1	7.12		Code identifying check digit scheme	ID	X					
PV1	7.13		Identifier type code	ID	RE					Values: Table 0203
PV1	7.14		Assigning facility	HD	RE					
PV1	7.14.1		Namespace ID	IS	RE					Values: Table 0363
PV1	7.14.2		Universal ID	ST	CE					
PV1	7.14.3		Universal ID type	ID	CE					Values: Table 0301
PV1	7.15		Name representation code	ID	X					
PV1	7.16		Name Context	CE	X					
PV1	7.17		Name Validity Range	DR	X					
PV1	7.18		Name Assembly Order	ID	X					
PV1	7.19		Effective Date	TS	X					
PV1	7.20		Expiration Date	TS	X					
PV1	7.21		Professional Suffix	ST	X					
PV1	7.22		Assigning Jurisdiction	CWE	X					
PV1	7.23		Assigning Agency or Department	CWE	X					
PV1	8	00138	Referring Doctor	XCN	RE				2	
PV1	8.1		ID Number	ST	RE	2470	Physician Follow-up	70		
PV1	8.2		Family name	FN	R					
PV1	8.2.1		Surname	ST	R					
PV1	8.2.2		Own Surname Prefix	ST	RE					
PV1	8.2.3		Own Surname	ST	RE					
PV1	8.2.4		Surname Prefix From Partner/Spouse	ST	RE					
PV1	8.2.5		Surname From Partner/Spouse	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PV1	8.3		Given name	ST	RE					
PV1	8.4		Second and Further Given Names or Initials Thereof	ST	RE					
PV1	8.5		Suffix	ST	RE					
PV1	8.6		Prefix	ST	RE					
PV1	8.7		Degree	IS	X					
PV1	8.8		Source table	IS	CE					Values: Table 0297
PV1	8.9		Assigning authority	HD	RE					
PV1	8.9.1		Namespace ID	IS	RE					Values: Table 0363
PV1	8.9.2		Universal ID	ST	CE					
PV1	8.9.3		Universal ID type	ID	CE					Values: Table 0301
PV1	8.10		Name type code	ID	RE					Values: Table 0200
PV1	8.11		Identifier check digit	ST	X					
PV1	8.12		Code identifying check digit scheme	ID	X					
PV1	8.13		Identifier type code	ID	RE					Values: Table 0203
PV1	8.14		Assigning facility	HD	RE					
PV1	8.14.1		Namespace ID	IS	RE					Values: Table 0363
PV1	8.14.2		Universal ID	ST	CE					
PV1	8.14.3		Universal ID type	ID	CE					Values: Table 0301
PV1	8.15		Name representation code	ID	X					
PV1	8.16		Name Context	CE	X					
PV1	8.17		Name Validity Range	DR	X					
PV1	8.18		Name Assembly Order	ID	X					
PV1	8.19		Effective Date	TS	X					
PV1	8.20		Expiration Date	TS	X					
PV1	8.21		Professional Suffix	ST	X					
PV1	8.22		Assigning Jurisdiction	CWE	X					
PV1	8.23		Assigning Agency or Department	CWE	X					
PV1	9	00139	Consulting Doctor	XCN	RE				2	
PV1	9.1		ID Number	ST	RE					
PV1	9.2		Family name	FN	R					
PV1	9.2.1		Surname	ST	R					
PV1	9.2.2		Own Surname Prefix	ST	RE					
PV1	9.2.3		Own Surname	ST	RE					
PV1	9.2.4		Surname Prefix From Partner/Spouse	ST	RE					
PV1	9.2.5		Surname From Partner/Spouse	ST	RE					
PV1	9.3		Given name	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PV1	9.4		Second and Further Given Names or Initials Thereo	ST	RE					
PV1	9.5		Suffix	ST	RE					
PV1	9.6		Prefix	ST	RE					
PV1	9.7		Degree	IS	X					
PV1	9.8		Source table	IS	CE					Values: Table 0297
PV1	9.9		Assigning authority	HD	RE					
PV1	9.9.1		Namespace ID	IS	RE					Values: Table 0363
PV1	9.9.2		Universal ID	ST	CE					
PV1	9.9.3		Universal ID type	ID	CE					Values: Table 0301
PV1	9.10		Name type code	ID	RE					Values: Table 0200
PV1	9.11		Identifier check digit	ST	X					
PV1	9.12		Code identifying check digit scheme	ID	X					
PV1	9.13		Identifier type code	ID	RE					Values: Table 0203
PV1	9.14		Assigning facility	HD	RE					
PV1	9.14.1		Namespace ID	IS	RE					Values: Table 0363
PV1	9.14.2		Universal ID	ST	CE					
PV1	9.14.3		Universal ID type	ID	CE					Values: Table 0301
PV1	9.15		Name representation code	ID	X					
PV1	9.16		Name Context	CE	X					
PV1	9.17		Name Validity Range	DR	X					
PV1	9.18		Name Assembly Order	ID	X					
PV1	9.19		Effective Date	TS	X					
PV1	9.20		Expiration Date	TS	X					
PV1	9.21		Professional Suffix	ST	X					
PV1	9.22		Assigning Jurisdiction	CWE	X					
PV1	9.23		Assigning Agency or Department	CWE	X					
PV1	10	00140	Hospital Service	IS	X					
PV1	11	00141	Temporary Location	PL	X					
PV1	12	00142	Preadmit Test Indicator	IS	X					
PV1	13	00143	Re-admission Indicator	IS	X					
PV1	14	00144	Admit Source	IS	X					
PV1	15	00145	Ambulatory Status	IS	X					
PV1	16	00146	VIP Indicator	IS	X					
PV1	17	00147	Admitting Doctor	XCN	RE				2	
PV1	17.1		ID Number	ST	RE					
PV1	17.2		Family name	FN	R					
PV1	17.2.1		Surname	ST	R					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PV1	17.2.2		Own Surname Prefix	ST	RE					
PV1	17.2.3		Own Surname	ST	RE					
PV1	17.2.4		Surname Prefix From Partner/Spouse	ST	RE					
PV1	17.2.5		Surname From Partner/Spouse	ST	RE					
PV1	17.3		Given name	ST	RE					
PV1	17.4		Second and Further Given Names or Initials Thereo	ST	RE					
PV1	17.5		Suffix	ST	RE					
PV1	17.6		Prefix	ST	RE					
PV1	17.7		Degree	IS	X					
PV1	17.8		Source table	IS	CE					Values: Table 0297
PV1	17.9		Assigning authority	HD	RE					
PV1	17.9.1		Namespace ID	IS	RE					Values: Table 0363
PV1	17.9.2		Universal ID	ST	CE					
PV1	17.9.3		Universal ID type	ID	CE					Values: Table 0301
PV1	17.10		Name type code	ID	RE					Values: Table 0200
PV1	17.11		Identifier check digit	ST	X					
PV1	17.12		Code identifying check digit scheme	ID	X					
PV1	17.13		Identifier type code	ID	RE					Values: Table 0203
PV1	17.14		Assigning facility	HD	RE					
PV1	17.14.1		Namespace ID	IS	RE					Values: Table 0363
PV1	17.14.2		Universal ID	ST	CE					
PV1	17.14.3		Universal ID type	ID	CE					Values: Table 0301
PV1	17.15		Name representation code	ID	X					
PV1	17.16		Name Context	CE	X					
PV1	17.17		Name Validity Range	DR	X					
PV1	17.18		Name Assembly Order	ID	X					
PV1	17.19		Effective Date	TS	X					
PV1	17.20		Expiration Date	TS	X					
PV1	17.21		Professional Suffix	ST	X					
PV1	17.22		Assigning Jurisdiction	CWE	X					
PV1	17.23		Assigning Agency or Department	CWE	X					
PV1	18	00148	Patient Type	IS	X					
PV1	19	00149	Visit Number	CX	X					
PV1	20	00150	Financial Class	FC	X					
PV1	21	00151	Charge Price Indicator	IS	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
PV1	22	00152	Courtesy Code	IS	X					
PV1	23	00153	Credit Rating	IS	X					
PV1	24	00154	Contract Code	IS	X					
PV1	25	00155	Contract Effective Date	DT	X					
PV1	26	00156	Contract Amount	NM	X					
PV1	27	00157	Contract Period	NM	X					
PV1	28	00158	Interest Code	IS	X					
PV1	29	00159	Transfer to Bad Debt Code	IS	X					
PV1	30	00160	Transfer to Bad Debt Date	DT	X					
PV1	31	00161	Bad Debt Agency Code	IS	X					
PV1	32	00162	Bad Debt Transfer Amount	NM	X					
PV1	33	00163	Bad Debt Recovery Amount	NM	X					
PV1	34	00164	Delete Account Indicator	IS	X					
PV1	35	00165	Delete Account Date	DT	X					
PV1	36	00166	Discharge Disposition	IS	X					
PV1	37	00167	Discharged to Location	DLD	X					
PV1	38	00168	Diet Type	CE	X					
PV1	39	00169	Servicing Facility	IS	X					
PV1	40	00170	Bed Status	IS	X					
PV1	41	00171	Account Status	IS	X					
PV1	42	00172	Pending Location	PL	X					
PV1	43	00173	Prior Temporary Location	PL	X					
PV1	44	00174	Admit Date/Time	TS	X					
PV1	45	00175	Discharge Date/Time	TS	X					
PV1	46	00176	Current Patient Balance	NM	X					
PV1	47	00177	Total Charges	NM	X					
PV1	48	00178	Total Adjustments	NM	X					
PV1	49	00179	Total Payments	NM	X					
PV1	50	00180	Alternate Visit ID	CX	X					
PV1	51	01226	Visit Indicator	IS	X					
PV1	52	01274	Other Healthcare Provider	XCN	X					
ORC	1	00215	Order Control	ID	R					“RE”
ORC	2	00216	Placer Order Number	EI	X					
ORC	3	00217	Filler Order Number	EI	X					
ORC	4	00218	Placer Group Number	EI	X					
ORC	5	00219	Order Status	ID	X					
ORC	6	00220	Response Flag	ID	X					
ORC	7	00221	Quantity/Timing	TQ	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ORC	8	00222	Parent	EIP	X					
ORC	9	00223	Date/Time of Transaction	TS	X					
ORC	10	00224	Entered By	XCN	X					
ORC	11	00225	Verified By	XCN	X					
ORC	12	00226	Ordering Provider	XCN	X					
ORC	13	00227	Enterer's Location	PL	X					
ORC	14	00228	Call Back Phone Number	XTN	X					
ORC	15	00229	Order Effective Date/Time	TS	X					
ORC	16	00230	Order Control Code Reason	CE	X					
ORC	17	00231	Entering Organization	CE	X					
ORC	18	00232	Entering Device	CE	X					
ORC	19	00233	Action By	XCN	X					
ORC	20	01310	Advanced Beneficiary Notice Code	CE	X					
ORC	21	01311	Ordering Facility Name	XON	C	7190, 7200	Path Ordering Facility Number (AHA Number), Path Ordering Facility Name	33, 34	4	
ORC	21.1		Organization name	ST	RE	7200	Path Ordering Facility Name	34		
ORC	21.2		Organization name type code	IS	RE					Values: Table 0204
ORC	21.3		ID number	NM	X					Use component 10 instead
ORC	21.4		Check digit	NM	X					
ORC	21.5		Code identifying the check digit scheme	ID	X					
ORC	21.6		Assigning authority	HD	RE					
ORC	21.6.1		Namespace ID	IS	RE					Values: Table 0363
ORC	21.6.2		Universal ID	ST	CE					
ORC	21.6.3		Universal ID type	ID	CE					Values: Table 0301
ORC	21.7		Identifier type code	ID	RE					Values: Table 0203
ORC	21.8		Assigning facility	HD	RE					
ORC	21.8.1		Namespace ID	IS	RE					Values: Table 0363
ORC	21.8.2		Universal ID	ST	CE					
ORC	21.8.3		Universal ID type	ID	CE					Values: Table 0301
ORC	21.9		Name representation code	ID	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ORC	21.10		Organization identifier	ST	RE	7190	Path Ordering Facility Number (AHA or other standard facility Number)	33		
ORC	22	01312	Ordering Facility Address	XAD	RE	7210, 7220, 7230, 7240, 7235	Path Ordering Fac Addr--No & St, Path Ordering Fac Addr--City, Path Ordering Fac Addr--State, and Path Ordering Fac--Postal Code, Path Order Fac Addr-Country	35-38, 76	4	
ORC	22.1		Street Address	SAD	RE	7210	Path Ordering Fac Addr--No & St	35		
ORC	22.1.1		Street or Mailing Address	ST	R	7210	Path Ordering Fac Addr--No & St	35		
ORC	22.1.2		Street Name	ST	RE					
ORC	22.1.3		Dwelling Number	ST	RE					
ORC	22.2		Other designation	ST	RE	7210	Path Ordering Fac Addr--No & St	35		
ORC	22.3		City	ST	RE	7220	Path Ordering Fac Addr--City	36		
ORC	22.4		State or province	ST	RE	7230	Path Ordering Fac Addr--State	37		
ORC	22.5		ZIP or postal code	ST	RE	7240	Path Ordering Fac--Postal Code	38		
ORC	22.6		Country	ID	RE	7235	Path Ordering Fac--Country	76		Values: Table 0399 or ISO3166-1
ORC	22.7		Address type	ID	RE					Values: Table 0190
ORC	22.8		Other geographic designation	ST	X					
ORC	22.9		County/parish code	IS	RE					Values: Table 0289
ORC	22.10		Census tract	IS	X					
ORC	22.11		Address representation code	ID	X					
ORC	22.12		Address Validity Range	DR	X					
ORC	22.13		Effective Date	TS	X					
ORC	22.14		Expiration Date	TS	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ORC	23	01313	Ordering Facility Phone Number	XTN	RE	7250	Path Ordering Facility--Telephone	39	4	
ORC	23.1		Telephone number	ST	CE	7250	Path Ordering Facility--Telephone	39		
ORC	23.2		Telecommunication use code	ID	RE					Values: Table 0201
ORC	23.3		Telecommunication equipment type	ID	RE					Values: Table 0202
ORC	23.4		Email address	ST	RE					
ORC	23.5		Country code	NM	RE					
ORC	23.6		Area/city code	NM	RE					
ORC	23.7		Local number	NM	RE					
ORC	23.8		Extension	NM	RE					
ORC	23.9		Any text	ST	RE					
ORC	23.10		Extension Prefix	ST	RE					
ORC	23.11		Speed dial code	ST	RE					
ORC	23.12		Unformatted telephone number	ST	RE					
ORC	24	01314	Ordering Provider Address	XAD	RE	7140, 7150, 7160, 7170, 7165	Path Ordering Client/Phys Addr--Street, Path Ordering Client/Phys Addr--City, Path Ordering Client/Phys Addr--State, Path Ordering Client/Phys Addr—Postal Code, Path Ordering Client/Phys Addr-Country	28-31, 73	4	
ORC	24.1		Street Address	SAD	RE	7140	Path Ordering Client/Phys Addr--Street	28		
ORC	22.1.1		Street or Mailing Address	ST	R	7140	Path Ordering Client/Phys Addr--Street	28		
ORC	22.1.2		Street Name	ST	RE	7140	Path Ordering Client/Phys Addr--Street	28		
ORC	22.1.3		Dwelling Number	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ORC	24.2		Other designation	ST	RE	7140	Path Ordering Client/Phys Addr--Street	28		
ORC	24.3		City	ST	RE	7150	Path Ordering Client/Phys Addr--City	29		
ORC	24.4		State or province	ST	RE	7160	Path Ordering Client/Phys Addr--State	30		
ORC	24.5		ZIP or postal code	ST	RE	7170	Path Ordering Client/Phys Addr--Postal Code	31		
ORC	24.6		Country	ID	RE	7165	Path Ordering Client/Phys Addr—Country	73		Values: Table 0399 or ISO3166-1
ORC	24.7		Address type	ID	RE					Values: Table 0190
ORC	24.8		Other geographic designation	ST	X					
ORC	24.9		County/parish code	IS	RE					Values: Table 0289
ORC	24.10		Census tract	IS	X					
ORC	24.11		Address representation code	ID	X					
ORC	24.12		Address Validity Range	DR	X					
ORC	24.13		Effective Date	TS	X					
ORC	24.14		Expiration Date	TS	X					
ORC	25	01473	Order Status Modifier	CWE	X					
ORC	26	01641	Advanced Beneficiary Notice Override Reason	CWE	X					
ORC	27	01642	Filler's Expected Availability Date/Time	TS	X					
ORC	28	00615	Confidentiality Code	CWE	RE					
ORC	28.1		Identifier	ST	R					Values: Table 0177
ORC	28.2		Text	ST	RE					
ORC	28.3		Name of coding system	ID	R					"HL70177"
ORC	28.4		Alternate identifier	ST	RE					
ORC	28.5		Alternate text	ST	RE					
ORC	28.6		Name of Alternate coding system	ID	RE					Values: Table 0396
ORC	28.7		Coding System Version ID	ST	CE					
ORC	28.8		Alternate Coding System Version ID	ST	CE					
ORC	28.9		Original Text	ST	RE					
ORC	29	01643	Order Type	CWE	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
ORC	30	01644	Enterer Authorization Mode	CNE	X					
ORC	31	02286	Parent Universal Service Identifier	CWE	CE					
ORC	31.1		Identifier	ST	R					
ORC	31.2		Text	ST	RE					
ORC	31.3		Name of coding system	ID	R					Values: Table 0396
ORC	31.4		Alternate identifier	ST	RE					
ORC	31.5		Alternate text	ST	RE					
ORC	31.6		Name of Alternate coding system	ID	RE					Values: Table 0396
ORC	31.7		Coding System Version ID	ST	CE					
ORC	31.8		Alternate Coding System Version ID	ST	CE					
ORC	31.9		Original Text	ST	RE					
OBR	1	00237	Set ID – OBR	SI	R					
OBR	2	00216	Placer Order Number	EI	RE					
OBR	2.1		Entity identifier	ST	R					
OBR	2.2		Namespace ID	IS	RE					Values: Table 0363
OBR	2.3		Universal ID	ST	CE					
OBR	2.4		Universal ID type	ID	CE					Values: Table 0301
OBR	3	00217	Filler Order Number	EI	R	7090	Path Report Number	23		
OBR	3.1		Entity identifier	ST	R	7090	Path Report Number	23		
OBR	3.2		Namespace ID	IS	RE					Values: Table 0363
OBR	3.3		Universal ID	ST	CE					
OBR	3.4		Universal ID type	ID	CE					Values: Table 0301
OBR	4	00238	Universal Service ID	CE	R	7480	Path--Report Type	64		
OBR	4.1		Identifier	ST	R	7480	Path--Report Type	64		Usually LOINC, SNOMED, or CKey value
OBR	4.2		Text	ST	RE					
OBR	4.3		Name of coding system	ID	R					Values: Table 0396
OBR	4.4		Alternate identifier	ST	RE					
OBR	4.5		Alternate text	ST	RE					
OBR	4.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBR	5	00239	Priority	ID	X					
OBR	6	00240	Requested Date/Time	TS	X					
OBR	7	00241	Observation Date/Time	TS	R	7320	Path-Date Spec Collection	46		
OBR	8	00242	Observation End Date/Time	TS	X					
OBR	9	00243	Collection Volume	CQ	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	10	00244	Collector Identifier	XCN	RE				4	
OBR	10.1		ID Number	ST	RE	2480	Physician--Primary Surgeon	82		
OBR	10.2		Family name	FN	R					
OBR	10.2.1		Surname	ST	R					
OBR	10.2.2		Own Surname Prefix	ST	RE					
OBR	10.2.3		Own Surname	ST	RE					
OBR	10.2.4		Surname Prefix From Partner/Spouse	ST	RE					
OBR	10.2.5		Surname From Partner/Spouse	ST	RE					
OBR	10.3		Given name	ST	RE					
OBR	10.4		Middle initial or name	ST	RE					
OBR	10.5		Suffix	ST	RE					
OBR	10.6		Prefix	ST	RE					
OBR	10.7		Degree	IS	X					
OBR	10.8		Source table	IS	CE					Values: Table 0297
OBR	10.9		Assigning authority	HD	RE					
OBR	10.9.1		Namespace ID	IS	RE					Values: Table 0363
OBR	10.7.9		Universal ID	ST	CE					
OBR	10.9.3		Universal ID type	ID	CE					Values: Table 0301
OBR	10.10		Name type code	ID	RE					Values: Table 0200
OBR	10.11		Identifier check digit	ST	X					
OBR	10.12		Code identifying check digit scheme	ID	X					
OBR	10.13		Identifier type code	ID	RE					Values: Table 0203
OBR	10.14		Assigning facility	HD	RE					
OBR	10.14.1		Namespace ID	IS	RE					Values: Table 0363
OBR	10.14.2		Universal ID	ST	CE					
OBR	10.14.3		Universal ID type	ID	CE					Values: Table 0301
OBR	10.15		Name representation code	ID	X					
OBR	10.16		Name Context	CE	X					
OBR	10.17		Name Validity Range	DR	X					
OBR	10.18		Name Assembly Order	ID	X					
OBR	10.19		Effective Date	TS	X					
OBR	10.20		Expiration Date	TS	X					
OBR	10.21		Professional Suffix	ST	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	10.22		Assigning Jurisdiction	CWE	X					
OBR	10.23		Assigning Agency or Department	CWE	X					
OBR	11	00245	Specimen Action Code	ID	X					
OBR	12	00246	Danger Code	CE	X					
OBR	13	00247	Relevant Clinical Info	ST	X					
OBR	14	00248	Specimen Received Date/Time	TS	RE					
OBR	15	00249	Specimen Source	SPS	RE					
OBR	15.1		Specimen Source Name or Code	CWE	RE					
OBR	15.1.1		Identifier	ST	R					Values: Table 0070
OBR	15.1.2		Text	ST	RE					
OBR	15.1.3		Name of coding system	ID	R					Values: Table 0396 or "HL70070"
OBR	15.1.4		Alternate identifier	ST	RE					
OBR	15.1.5		Alternate text	ST	RE					
OBR	15.1.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBR	15.1.7		Coding System Version ID	ST	CE					
OBR	15.1.8		Alternate Coding System Version ID	ST	CE					
OBR	15.1.9		Original Text	ST	RE					
OBR	15.2		Additives	CWE	X					
OBR	15.3		Specimen Collection Method	TX	RE					
OBR	15.4		Body Site	CWE	RE					
OBR	15.4.1		Identifier	ST	R					
OBR	15.4.2		Text	ST	RE					
OBR	15.4.3		Name of coding system	ID	R					Values: Table 0396
OBR	15.4.4		Alternate identifier	ST	RE					
OBR	15.4.5		Alternate text	ST	RE					
OBR	15.4.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBR	15.4.7		Coding System Version ID	ST	CE					
OBR	15.4.8		Alternate Coding System Version ID	ST	CE					
OBR	15.4.9		Original Text	ST	RE					
OBR	15.5		Site Modifier	CWE	X					
OBR	15.6		Collection Method Modifier Code	CWE	X					
OBR	15.7		Specimen Role	CWE	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	16	00226	Ordering Provider	XCN	C	7100, 7110, 7120, 7130	Path Ordering Client/Phys--Lic No, Path Ordering Client/Phys--LName, Path Ordering Client/Phys--FName, Path Ordering Client/Phys--MName	24, 25, 26, 27	4	
OBR	16.1		ID Number	ST	RE	7100	Path Ordering Client/Phys--Lic No	24		
OBR	16.2		Family name	FN	R					
OBR	16.2.1		Surname	ST	R	7120	Path Ordering Client/Phys--LName	25		
OBR	16.2.2		Own Surname Prefix	ST	RE	7130				
OBR	16.2.3		Own Surname	ST	RE					
OBR	16.2.4		Surname Prefix From Partner/Spouse	ST	RE					
OBR	16.2.5		Surname From Partner/Spouse	ST	RE					
OBR	16.3		Given name	ST	RE		Path Ordering Client/Phys--FName	26		
OBR	16.4		Middle initial or name	ST	RE		Path Ordering Client/Phys--MName	27		
OBR	16.5		Suffix	ST	RE					
OBR	16.6		Prefix	ST	RE					
OBR	16.7		Degree	IS	X					
OBR	16.8		Source table	IS	CE					Values: Table 0297
OBR	16.9		Assigning authority	HD	RE					
OBR	16.9.1		Namespace ID	IS	RE					Values: Table 0363
OBR	16.7.9		Universal ID	ST	CE					
OBR	16.9.3		Universal ID type	ID	CE					Values: Table 0301
OBR	16.10		Name type code	ID	RE					Values: Table 0200
OBR	16.11		Identifier check digit	ST	X					
OBR	16.12		Code identifying check digit scheme	ID	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	16.13		Identifier type code	ID	RE					Values: Table 0203
OBR	16.14		Assigning facility	HD	RE					
OBR	16.14.1		Namespace ID	IS	RE					Values: Table 0363
OBR	16.14.2		Universal ID	ST	CE					
OBR	16.14.3		Universal ID type	ID	CE					Values: Table 0301
OBR	16.15		Name representation code	ID	X					
OBR	16.16		Name Context	CE	X					
OBR	16.17		Name Validity Range	DR	X					
OBR	16.18		Name Assembly Order	ID	X					
OBR	16.19		Effective Date	TS	X					
OBR	16.20		Expiration Date	TS	X					
OBR	16.21		Professional Suffix	ST	X					
OBR	16.22		Assigning Jurisdiction	CWE	X					
OBR	16.23		Assigning Agency or Department	CWE	X					
OBR	17	00250	Order Callback Phone Number	XTN	RE	7180	Path Ordering Client/Phys Phone	32	4	
OBR	17.1		Telephone number	ST	CE	7180	Path Ordering Client/Phys Phone	32		
OBR	17.2		Telecommunication use code	ID	RE					Values: Table 0201
OBR	17.3		Telecommunication equipment type	ID	RE					Values: Table 0202
OBR	17.4		Email address	ST	RE					
OBR	17.5		Country code	NM	RE					
OBR	17.6		Area/city code	NM	RE	7180	Path Ordering Client/Phys Phone	32		
OBR	17.7		Phone number	NM	RE	7180	Path Ordering Client/Phys Phone	32		
OBR	17.8		Extension	NM	RE					
OBR	17.9		Any text	ST	RE					
OBR	17.10		Extension Prefix	ST	RE					
OBR	17.11		Speed Dial Code	ST	RE					
OBR	17.12		Unformatted Telephone Number	ST	RE					
OBR	18	00251	Placer Field 1	ST	X					
OBR	19	00252	Placer Field 2	ST	X					
OBR	20	00253	Filler Field 1	ST	X					
OBR	21	00254	Filler Field 2	ST	RE	7070	Path Lab phone number	9		
OBR	22	00255	Results Rpt/Status Chng-Date/Time	TS	RE	7530	Date/Time Results Written	71		
OBR	23	00256	Charge to Practice	MOC	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	24	00257	Diagnostic Serv Sect ID	ID	X					
OBR	25	00258	Result Status	ID	R	7330	Path--Result Status	47		Values: Table 0123
OBR	26	00259	Parent Result	PRL	CE					
OBR	26.1		Parent Observation Identifier	CE	R					
OBR	26.1.1		Identifier	ST	R					
OBR	26.1.2		Text	ST	RE					
OBR	26.1.3		Name of coding system	ID	R					Values: Table 0396
OBR	26.1.4		Alternate identifier	ST	RE					
OBR	26.1.5		Alternate text	ST	RE					
OBR	26.1.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBR	26.2		Parent Observation Sub-identifier	ST	RE					
OBR	26.3		Parent Observation Value Descriptor	ST	RE					
OBR	27	00221	Quantity/Timing	TQ	X					
OBR	28	00260	Result Copies To	XCN	X				5	
OBR	29	00261	Parent	EIP	CE					
OBR	29.1		Placer Assigned Identifier	EI	RE					
OBR	29.1.1		Entity identifier	ST	R					
OBR	29.1.2		Namespace ID	IS	RE					Values: Table 0363
OBR	29.1.3		Universal ID	ST	CE					
OBR	29.1.4		Universal ID type	ID	CE					Values: Table 0301
OBR	29.2		Filler Assigned Identifier	EI	RE					
OBR	29.2.1		Entity identifier	ST	R					
OBR	29.2.2		Namespace ID	IS	RE					Values: Table 0363
OBR	29.2.3		Universal ID	ST	CE					
OBR	29.2.4		Universal ID type	ID	CE					Values: Table 0301
OBR	30	00262	Transportation Mode	ID	X					
OBR	31	00263	Reason for Study	CE	RE				20	
OBR	31.1		Identifier	ST	R					
OBR	31.2		Text	ST	RE					
OBR	31.3		Name of coding system	ID	R					Values: Table 0396
OBR	31.4		Alternate identifier	ST	RE					
OBR	31.5		Alternate text	ST	RE					
OBR	31.6		Name of Alternate coding system	ID	RE					Values: Table 0396

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	32	00264	Principal Result Interpreter	NDL	RE	7260, 7270, 7280, 7290, 7300, 7310	Pathologist Last Name, Pathologist First Name, Pathologist Middle Name, Pathologist Name Suffix, Pathologist Lic Number, Pathologist Lic State	40-45		
OBR	32.1		Name	CNN	R					
OBR	32.1.1		ID Number	ST	RE	7300, 7305	Pathologist Lic Number, Pathologist Lic Number NPI	44		
OBR	32.1.2		Family name	ST	R	7260	Pathologist Last Name	40		
OBR	32.1.3		Given name	ST	RE	7270	Pathologist First Name	41		
OBR	32.1.4		Second and Further Given Names or Initials Thereof	ST	RE	7280	Pathologist Middle Name	42		
OBR	32.1.5		Suffix	ST	RE	7290	Pathologist Name Suffix	43		
OBR	32.1.6		Prefix	ST	RE					
OBR	32.1.7		Degree	IS	X					
OBR	32.1.8		Source table	IS	CE					Values: Table 0297
OBR	32.1.9		Assigning Authority-Namespace ID	IS	RE	7310	Pathologist Lic State	45		Values: Table 0363
OBR	32.1.10		Assigning Authority-Universal ID	ST	CE					
OBR	32.1.11		Assigning Authority-Universal ID Type	ID	CE					Values: Table 0301
OBR	32.2		start date/time	TS	RE					
OBR	32.3		end date/time	TS	RE					
OBR	32.4		point of care	IS	X					
OBR	32.5		Room	IS	X					
OBR	32.6		Bed	IS	X					
OBR	32.7		Facility	HD	X					
OBR	32.8		Location status	IS	X					
OBR	32.9		Patient location type	IS	X					
OBR	32.10		Building	IS	X					
OBR	32.11		Floor	IS	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	33	00265	Assistant Result Interpreter	NDL	X				6	
OBR	34	00266	Technician	NDL	X				6	
OBR	35	00267	Transcriptionist	NDL	X					
OBR	36	00268	Scheduled Date/ Time	TS	X					
OBR	37	01028	Number of Sample Containers	NM	X					
OBR	38	01029	Transport Logistics of Collected Sample	CE	X					
OBR	39	01030	Collector's Comment	CE	X					
OBR	40	01031	Transport Arrangement Responsibility	CE	X					
OBR	41	01032	Transport Arranged	ID	X					
OBR	42	01033	Escort Required	ID	X					
OBR	43	01034	Planned Patient Transport Comment	CE	X					
OBR	44	00393	Procedure Code	CWE	CE					
OBR	44.1		Identifier	ST	R					
OBR	44.2		Text	ST	RE					
OBR	44.3		Name of coding system	ID	R					Values: Table 0396
OBR	44.4		Alternate identifier	ST	RE					
OBR	44.5		Alternate text	ST	RE					
OBR	44.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBR	44.7		Coding System Version ID	ST	CE					
OBR	44.8		Alternate Coding System Version ID	ST	CE					
OBR	44.9		Original Text	ST	RE					
OBR	45	01316	Procedure Code Modifier	CE	X					
OBR	46	01474	Placer Supplemental Service Information	CE	X					
OBR	47	01475	Filler Supplemental Service Information	CE	X					
OBR	48	01646	Medically Necessary Duplicate Procedure Reason.	CWE	X					
OBR	49	01647	Result Handling	IS	RE					Values: Table 0507
OBR	50	02286	Parent Universal Service Identifier	CWE	CE					
OBR	50.1		Identifier	ST	R					
OBR	50.2		Text	ST	RE					
OBR	50.3		Name of coding system	ST	R					Values: Table 0396
OBR	50.4		Alternate identifier	ST	RE					
OBR	50.5		Alternate text	ST	RE					
OBR	50.6		Name of Alternate coding system	ST	RE					Values: Table 0396
OBR	50.7		Coding System Version ID	ST	CE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBR	50.8		Alternate Coding System Version ID	ST	CE					
OBR	50.9		Original Text	ST	RE					
OBX	1	00569	Set ID-OBX	SI	R					
OBX	2	00570	Value type	ID	R					Values: Table 0125
OBX	3	00571	Observation identifier	CE	R					
OBX	3.1		Identifier	ST	R					Usually LOINC or CKey
OBX	3.2		Text	ST	R					
OBX	3.3		Name of coding system	ID	R					Values: Table 0396
OBX	3.4		Alternate identifier	ST	O					
OBX	3.5		Alternate text	ST	O					
OBX	3.6		Name of Alternate coding system	ID	O					Values: Table 0396
OBX	4	00572	Observation sub-ID	ST	RE					
OBX	5	00573	Observation value	**	R	7340 7350 7360 7370 7380 7390 7400 7410 7420 7430 7440 7450 7460 7470 2600 7080	Path-SNOMED CT Code(s), Path--SNOMED CT Version, Path--ICD-CM codes Path--ICD Version Number, Path--CPT codes, Path--CPT Code Version, Path--Text Diagnosis, Path--Clinical History, Path--Nature of Specimen, Path--Gross Pathology, Path--Micro Pathology, Path--Final Diagnosis, Path--Comment Section, Path--Suppl Reports, Text--Staging, Patient Age at Specimen	19, 48-62	12	
OBX	6	00574	Units	CE	RE	7540	Units for Age at Specimen	72		Use UCUM units
OBX	6.1		Identifier	ST	R	7540	Units for Age at Specimen	72		Values: drawn from UCUM
OBX	6.2		Text	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBX	6.3		Name of coding system	ID	R					"UCUM"
OBX	6.4		Alternate identifier	ST	RE					
OBX	6.5		Alternate text	ST	RE					
OBX	6.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBX	7	00575	Reference ranges	ST	RE					
OBX	8	00576	Abnormal flags	ID	RE				5	Values: Table 0078
OBX	9	00577	Probability	NM	X					
OBX	10	00578	Nature of abnormal test	ID	RE				5	Values: Table 0080
OBX	11	00579	Observation result status	ID	R	7330	Path--Result Status	47		Values: Table 0085
OBX	12	00580	Effective Date of Reference Range Values	TS	X					
OBX	13	00581	User defined access checks	ST	X					
OBX	14	00582	Date/time of the observation	TS	RE					
OBX	15	00583	Producer's Reference	CE	CE					
OBX	15.1		Identifier	ST	R					
OBX	15.2		Text	ST	RE					
OBX	15.3		Name of coding system	ID	R					Values: Table 0396 or "CLIA"
OBX	15.4		Alternate identifier	ST	RE					
OBX	15.5		Alternate text	ST	RE					
OBX	15.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBX	16	00584	Responsible observer	XCN	RE				5	
OBX	16.1		ID Number	ST	RE					
OBX	16.2		Family name	FN	R					
OBR	16.2.1		Surname	ST	R					
OBR	16.2.2		Own Surname Prefix	ST	RE					
OBR	16.2.3		Own Surname	ST	RE					
OBR	16.2.4		Surname Prefix From Partner/Spouse	ST	RE					
OBR	16.2.5		Surname From Partner/Spouse	ST	RE					
OBX	16.3		Given name	ST	RE					
OBX	16.4		Middle initial or name	ST	RE					
OBX	16.5		Suffix	ST	RE					
OBX	16.6		Prefix	ST	RE					
OBX	16.7		Degree	IS	X					
OBX	16.8		Source table	IS	CE					Values: Table 0297
OBX	16.9		Assigning authority	HD	RE					
OBX	16.9.1		Namespace ID	IS	RE					Values: Table 0363
OBX	16.9.2		Universal ID	ST	CE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBX	16.9.3		Universal ID type	ID	CE					Values: Table 0301
OBX	16.10		Name type code	ID	RE					Values: Table 0200
OBX	16.11		Identifier check digit	ST	X					
OBX	16.12		Code identifying check digit scheme	ID	X					
OBX	16.13		Identifier type code	ID	RE					Values: Table 0203
OBX	16.14		Assigning facility	HD	RE					
OBX	16.14.1		Namespace ID	IS	RE					Values: Table 0363
OBX	16.14.2		Universal ID	ST	CE					
OBX	16.14.3		Universal ID type	ID	CE					Values: Table 0301
OBX	16.15		Name representation code	ID	X					
OBX	16.16		Name Context	CE	X					
OBX	16.17		Name Validity Range	DR	X					
OBX	16.18		Name Assembly Order	ID	X					
OBX	16.19		Effective Date	TS	X					
OBX	16.20		Expiration Date	TS	X					
OBX	16.21		Professional Suffix	ST	X					
OBX	16.22		Assigning Jurisdiction	CWE	X					
OBX	16.23		Assigning Agency or Department	CWE	X					
OBX	17	00936	Observation method	CE	RE				6	
OBX	17.1		Identifier	ST	R					Values: from NAACCROMC
OBX	17.2		Text	ST	RE					
OBX	17.3		Name of coding system	ID	R					Values: Table 0396
OBX	17.4		Alternate identifier	ST	RE					
OBX	17.5		Alternate text	ST	RE					
OBX	17.6		Name of Alternate coding system	ID	RE					Values: Table 0396
OBX	18	01479	Equipment Instance Identifier	EI	X					
OBX	19	01480	Date/Time of the Analysis	TS	CE					
OBX	20		Reserved for harmonization with V2.6		X					
OBX	21		Reserved for harmonization with V2.6		X					
OBX	22		Reserved for harmonization with V2.6		X					
OBX	23	02283	Performing Organization Name	XON	RE					
OBX	23.1		Organization name	ST	RE					
OBX	23.2		Organization name type code	IS	RE					Values: Table 0204
OBX	23.3		ID number	NM	X					Use component 10 instead
OBX	23.4		Check digit	NM	X					
OBX	23.5		Code identifying the check digit scheme	ID	X					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
OBX	23.6		Assigning authority	HD	RE					
OBX	23.6.1		Namespace ID	IS	RE					Values: Table 0363
OBX	23.6.2		Universal ID	ST	CE					
OBX	23.6.3		Universal ID type	ID	CE					Values: Table 0301
OBX	23.7		Identifier type code	ID	RE					Values: Table 0203
OBX	23.8		Assigning facility	HD	RE					
ORC	23.8.1		Namespace ID	IS	RE					Values: Table 0363
ORC	23.8.2		Universal ID	ST	CE					
ORC	23.8.3		Universal ID type	ID	CE					Values: Table 0301
OBX	23.9		Name representation code	ID	X					
OBX	23.10		Organization identifier	ST	RE					
OBX	24	02284	Performing Organization Address	XAD	CE					
OBX	24.1		Street Address	SAD	RE					
OBX	24.1.1		Street or Mailing Address	ST	R	7210	Path Ordering Fac Addr--No & St	35		
OBX	24.1.2		Street Name	ST	RE					
OBX	24.1.3		Dwelling Number	ST	RE					
OBX	24.2		Other designation	ST	RE					
OBX	24.3		City	ST	RE					
OBX	24.4		State or province	ST	RE					
OBX	24.5		ZIP or postal code	ST	RE					
OBX	24.6		Country	ID	RE					Values: Table 0399 or ISO3166-1
OBX	24.7		Address type	ID	RE					Values: Table 0190
OBX	24.8		Other geographic designation	ST	X					
OBX	24.9		County/parish code	IS	RE					Values: Table 0289
OBX	24.10		Census tract	IS	X					
OBX	24.11		Address representation code	ID	X					
OBX	24.12		Address Validity Range	DR	X					
OBX	24.13		Effective Date	TS	X					
OBX	24.14		Expiration Date	TS	X					
OBX	25	02285	Performing Organization Medical Director	XCN	X					
NTE	1	00096	Set ID – NTE	SI	RE					
NTE	2	00097	Source of Comment	ID	RE					Values: Table 0105
NTE	3	00098	Comment	FT	RE					
NTE	4	01318	Comment Type	CE	RE					Values: Table 0364
NTE	4.1		Identifier	ST	R					Values: Table 0364

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
NTE	4.2		Text	ST	RE					
NTE	4.3		Name of coding system	ID	R					"HL70364"
NTE	4.4		Alternate identifier	ST	RE					
NTE	4.5		Alternate text	ST	RE					
NTE	4.6		Name of Alternate coding system	ID	RE					Values: Table 0396
SPM	1	01754	Set ID – SPM	SI	RE					
SPM	2	01755	Specimen ID	EIP	R					
SPM	2.1		Placer Assigned Identifier	EI	RE					
SPM	2.1.1		Entity identifier	ST	R					
SPM	2.1.2		Namespace ID	IS	RE					Values: Table 0363
SPM	2.1.3		Universal ID	ST	CE					
SPM	2.1.4		Universal ID type	ID	CE					Values: Table 0301
SPM	2.2		Filler Assigned Identifier	EI	RE					
SPM	2.2.1		Entity identifier	ST	R					
SPM	2.2.2		Namespace ID	IS	RE					Values: Table 0363
SPM	2.2.3		Universal ID	ST	CE					
SPM	2.2.4		Universal ID type	ID	CE					Values: Table 0301
SPM	3	01756	Specimen Parent IDs	EIP	RE					
SPM	3.1		Placer Assigned Identifier	EI	RE					
SPM	3.1.1		Entity identifier	ST	R					
SPM	3.1.2		Namespace ID	IS	RE					Values: Table 0363
SPM	3.1.3		Universal ID	ST	CE					
SPM	3.1.4		Universal ID type	ID	CE					Values: Table 0301
SPM	3.2		Filler Assigned Identifier	EI	RE					
SPM	3.2.1		Entity identifier	ST	R					
SPM	3.2.2		Namespace ID	IS	RE					Values: Table 0363
SPM	3.2.3		Universal ID	ST	CE					
SPM	3.2.4		Universal ID type	ID	CE					Values: Table 0301
SPM	4	01900	Specimen Type	CWE	R					Values: Table 0487
SPM	4.1		Identifier	ST	R					Values: Table 0487
SPM	4.2		Text	ST	RE					
SPM	4.3		Name of coding system	ST	R					"HL70487"
SPM	4.4		Alternate identifier	ST	RE					
SPM	4.5		Alternate text	ST	RE					
SPM	4.6		Name of Alternate coding system	ST	RE					Values: Table 0396
SPM	4.7		Coding System Version ID	ST	CE					
SPM	4.8		Alternate Coding System Version ID	ST	CE					
SPM	4.9		Original Text	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
SPM	5	01757	Specimen Type Modifier	CWE	X					
SPM	6	01758	Specimen Additives	CWE	X					
SPM	7	01759	Specimen Collection Method	CWE	X					
SPM	8	01901	Specimen Source Site	CWE	X					
SPM	9	01760	Specimen Source Site Modifier	CWE	X					
SPM	10	01761	Specimen Collection Site	CWE	X					
SPM	11	01762	Specimen Role	CWE	X					
SPM	12	01902	Specimen Collection Amount	CQ	X					
SPM	13	01763	Grouped Specimen Count	NM	X					
SPM	14	01764	Specimen Description	ST	X					
SPM	15	01908	Specimen Handling Code	CWE	X					
SPM	16	01903	Specimen Risk Code	CWE	X					
SPM	17	01765	Specimen Collection Date/Time	DR	RE					
SPM	17.1		Range Start Date/Time	TS	RE					
SPM	17.2		Range End Date/Time	TS	RE					
SPM	18	00248	Specimen Received Date/Time	TS	RE					
SPM	19	01904	Specimen Expiration Date/Time	TS	X					
SPM	20	01766	Specimen Availability	ID	X					
SPM	21	01767	Specimen Reject Reason	CWE	RE					Values: Table 0490
SPM	21.1		Identifier	ST	R					Values: Table 0490
SPM	21.2		Text	ST	RE					
SPM	21.3		Name of coding system	ST	R					"HL70490"
SPM	21.4		Alternate identifier	ST	RE					
SPM	21.5		Alternate text	ST	RE					
SPM	21.6		Name of Alternate coding system	ST	RE					Values: Table 0396
SPM	21.7		Coding System Version ID	ST	CE					
SPM	21.8		Alternate Coding System Version ID	ST	CE					
SPM	21.9		Original Text	ST	RE					
SPM	22	01768	Specimen Quality	CWE	X					
SPM	23	01769	Specimen Appropriateness	CWE	X					
SPM	24	01770	Specimen Condition	CWE	X					
SPM	25	01771	Specimen Current Quantity	CQ	X					
SPM	26	01772	Number of Specimen Containers	NM	RE					
SPM	27	01773	Container Type	CWE	X					
SPM	28	01774	Container Condition	CWE	X					
SPM	29	01775	Specimen Child Role	CWE	C					Values: Table 0494
SPM	29.1		Identifier	ST	R					Values: Table 0494
SPM	29.2		Text	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
SPM	29.3		Name of coding system	ST	R					"HL70494"
SPM	29.4		Alternate identifier	ST	RE					
SPM	29.5		Alternate text	ST	RE					
SPM	29.6		Name of Alternate coding system	ST	RE					Values: Table 0396
SPM	29.7		Coding System Version ID	ST	CE					
SPM	29.8		Alternate Coding System Version ID	ST	CE					
SPM	29.9		Original Text	ST	RE					
SPM	30	02314	Accession ID	CX	RE					
SPM	30.1		ID number	ST	R					
SPM	30.2		Check digit	ST	X					
SPM	30.3		Code identifying check digit schema	ID	X					
SPM	30.4		Assigning Authority	HD	R					
SPM	30.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
SPM	30.4.2		Assigning Authority.Universal ID	ST	CE					
SPM	30.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
SPM	30.5		Identifier type code	ID	RE					Values: Table 0203
SPM	30.6		Assigning facility	HD	RE					
SPM	30.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
SPM	30.6.2		Assigning facility.Universal ID	ST	CE					
SPM	30.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
SPM	30.7		Effective Date	DT	RE					
SPM	30.8		Expiration Date	DT	RE					
SPM	30.9		Assigning Jurisdiction	CWE	RE					
SPM	30.9.1		Identifier	ST	R					
SPM	30.9.2		Text	ST	RE					
SPM	30.9.3		Name of Coding System	ID	R					Values: Table 0396
SPM	30.9.4		Alternate Identifier	ST	RE					
SPM	30.9.5		Alternate Text	ST	RE					
SPM	30.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
SPM	30.9.7		Coding System Version ID	ST	CE					
SPM	30.9.8		Alternate Coding System Version ID	ST	CE					
SPM	30.9.9		Original Text	ST	RE					
SPM	30.10		Assigning Agency or Department	CWE	RE					
SPM	30.10.1		Identifier	ST	R					
SPM	30.10.2		Text	ST	RE					
SPM	30.10.3		Name of Coding System	ID	R					Values: Table 0396
SPM	30.10.4		Alternate Identifier	ST	RE					
SPM	30.10.5		Alternate Text	ST	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
SPM	30.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
SPM	30.10.7		Coding System Version ID	ST	CE					
SPM	30.10.8		Alternate Coding System Version ID	ST	CE					
SPM	30.10.9		Original Text	ST	RE					
SPM	31	02315	Other Specimen ID	CX	RE					
SPM	31.1		ID number	ST	R					
SPM	31.2		Check digit	ST	X					
SPM	31.3		Code identifying check digit schema	ID	X					
SPM	31.4		Assigning Authority	HD	R					
SPM	31.4.1		Assigning Authority.Namespace ID	IS	RE					Values: Table 0363
SPM	31.4.2		Assigning Authority.Universal ID	ST	CE					
SPM	31.4.3		Assigning Authority.Universal ID type	ID	CE					Values: Table 0301
SPM	31.5		Identifier type code	ID	RE					Values: Table 0203
SPM	31.6		Assigning facility	HD	RE					
SPM	31.6.1		Assigning facility.Namespace ID	IS	RE					Values: Table 0363
SPM	31.6.2		Assigning facility.Universal ID	ST	CE					
SPM	31.6.3		Assigning facility.Universal ID type	ID	CE					Values: Table 0301
SPM	31.7		Effective Date	DT	RE					
SPM	31.8		Expiration Date	DT	RE					
SPM	31.9		Assigning Jurisdiction	CWE	RE					
SPM	31.9.1		Identifier	ST	R					
SPM	31.9.2		Text	ST	RE					
SPM	31.9.3		Name of Coding System	ID	R					Values: Table 0396
SPM	31.9.4		Alternate Identifier	ST	RE					
SPM	31.9.5		Alternate Text	ST	RE					
SPM	31.9.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
SPM	31.9.7		Coding System Version ID	ST	CE					
SPM	31.9.8		Alternate Coding System Version ID	ST	CE					
SPM	31.9.9		Original Text	ST	RE					
SPM	31.10		Assigning Agency or Department	CWE	RE					
SPM	31.10.1		Identifier	ST	R					
SPM	31.10.2		Text	ST	RE					
SPM	31.10.3		Name of Coding System	ID	R					Values: Table 0396
SPM	31.10.4		Alternate Identifier	ST	RE					
SPM	31.10.5		Alternate Text	ST	RE					
SPM	31.10.6		Name of Alternate Coding System	ID	RE					Values: Table 0396
SPM	31.10.7		Coding System Version ID	ST	CE					
SPM	31.10.8		Alternate Coding System Version ID	ST	CE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
SPM	31.10.9		Original Text	ST	RE					
FHS	1	00067	File field separator+	ST	R					
FHS	2	00068	File encoding characters+	ST	R					
FHS	3	00069	File sending application	HD	RE					
FHS	3.1		Namespace ID	IS	RE					Values: Table 0300
FHS	3.2		Universal ID	ST	CE					
FHS	3.3		Universal ID type	ID	CE					Values: Table 0301
FHS	4	00070	File sending facility+	HD	R					
FHS	4.1		Namespace ID	IS	RE					Values: Table 0300
FHS	4.2		Universal ID	ST	CE					
FHS	4.3		Universal ID type	ID	CE					Values: Table 0301
FHS	5	00071	File receiving application	HD	RE					
FHS	5.1		Namespace ID	IS	RE					Values: Table 0300
FHS	5.2		Universal ID	ST	CE					
FHS	5.3		Universal ID type	ID	CE					Values: Table 0301
FHS	6	00072	File receiving facility	HD	RE					
FHS	6.1		Namespace ID	IS	RE					Values: Table 0300
FHS	6.2		Universal ID	ST	CE					
FHS	6.3		Universal ID type	ID	CE					Values: Table 0301
FHS	7	00073	File creation date/time+	TS	R					
FHS	8	00074	File security	ST	RE					
FHS	9	00075	File name/ID/type+	ST	RE					
FHS	10	00076	File comment	ST	RE					
FHS	11	00077	File control ID	ST	RE					
FHS	12	00078	Reference file control ID	ST	RE					
FTS	1	00079	File batch count+	NM	R					
FTS	2	00080	File trailer comment	ST	RE					
BHS	1	00081	Batch field separator+	ST	R					
BHS	2	00082	Batch encoding characters+	ST	R					
BHS	3	00083	Batch sending application	HD	RE					
BHS	3.1		Namespace ID	IS	RE					Values: Table 0300
BHS	3.2		Universal ID	ST	CE					
BHS	3.3		Universal ID type	ID	CE					Values: Table 0301
BHS	4	00084	Batch sending facility+	HD	R					
BHS	4.1		Namespace ID	IS	RE					Values: Table 0300
BHS	4.2		Universal ID	ST	CE					
BHS	4.3		Universal ID type	ID	CE					Values: Table 0301
BHS	5	00085	Batch receiving application	HD	RE					

HL7 Segment	HL7 Seq	HL7 Item #	HL7 ELEMENT NAME	HL7 Data Type	NAACCR Usage	NAACCR Item #	NAACCR Item Name	E-Path Flat File Field	NAACCR Cardinality (maximum)	Note
BHS	5.1		Namespace ID	IS	RE					Values: Table 0300
BHS	5.2		Universal ID	ST	CE					
BHS	5.3		Universal ID type	ID	CE					Values: Table 0301
BHS	6	00086	Batch receiving facility	HD	RE					
BHS	5.1		Namespace ID	IS	RE					Values: Table 0300
BHS	5.2		Universal ID	ST	CE					
BHS	5.3		Universal ID type	ID	CE					Values: Table 0301
BHS	7	00087	Batch creation date/time+	TS	R					
BHS	8	00088	Batch security	ST	RE					
BHS	9	00089	Batch name/ID/type	ST	RE					
BHS	10	00090	Batch comment	ST	RE					
BHS	11	00091	Batch control ID	ST	RE					
BHS	12	00092	Reference batch control ID	ST	RE					
BTS	1	00093	Batch message count+	ST	R					
BTS	2	00094	Batch comment	ST	RE					
BTS	3	00095	Batch totals+	NM	RE				4	

7 Appendix D: Samples, Examples and FAQs

This appendix contains a collection of examples that illustrate the use of the encoding described in Volume V. There are examples of narrative and synoptic reports following a simple use case, and examples that illustrate some of the very complex Use Cases that occasionally arise in cancer pathology reporting. Each example is laid out showing the report as it might appear printed or on the screen, followed by the HL7 message that carries the example report to the registry. Finally, there are questions and answers that refer to specific items that may be challenging to determine how to encode, shown that example. At the end of this section, there are a set of general Frequently Asked Questions about implementing the HL7 messages as per Volume V specifications.

Note that in all example HL7 messages below the segment endings are explicitly marked in the document with the four character string "<CR>". These four characters are NOT part of the message content, and are present here only to aid readability, as some segments wrap across multiple print lines in this document. If these messages are used verbatim in testing software, these four characters "<CR>" will cause conformance validation errors if not removed before processing. They are only here for human readability of the example messages.

7.1 NARRATIVE REPORT EXAMPLES

D.1.1. Simplest Narrative Report

The following example shows a very simple HL7 cancer registry message containing a single pathology report, transmitted only as narrative text. This example shows the simplest format, where there are no sections of the report, just continuous running text. Note that although this represents the simplest possible encoding of a report from the viewpoint of the sending system, it consequently burdens the cancer registry with a very difficult task of extracting information from the transcription text. For this reason, this simplest format is discouraged.

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200506021339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||06-123456-MH|22049-1^Flow Cytometry Analysis^LN|||200505021212|||||||200505311130|^Bone
marrow|^B.J.^Healing^^^^M.D.|2033271605|||||200505311332|||F|||||||109772&PATHOLOGIST&QUINCY&&&Dr
.&MD&&NPI<CR>
OBX|1|TX|22633-2^nature of specimen^LN||Bone marrow.|||N|||F|||200505021212<CR>
OBX|2|TX|22636-5^clinical history^LN||Evaluate for non-Hodgkin's lymphoma: ALL: myelodysplastic
syndromes: chronic Lymphoproliferative disorders, CLL. Prior therapy: chemotherapy, Fludarabine
more than one month ago. CBC report received.|||N|||F|||200505021212<CR>
OBX|3|TX|22638-1^comments^LN||Correlation with a comprehensive bone marrow morphology
examination, CBC data/blood smear, and other relevant clincial and laboratory data is
recommended.|||N|||F|||200505021212<CR>
OBX|4|TX|22637-3^final diagnosis^LN||A small population of monoclonal B-cells (Kappa) is present
in the bone marrow. The antigenic profile is consistent with chronic lymphocytic leukemia/small
lymphocytic lymphoma (CLL/SLL).|||N|||F|||200505021212<CR>
OBX|5|TX|22049-1^phenotype^LN||1. A monoclonal kappa B-cell population co-expressing CD5 and CD23
is present. 2. -92% maturing myeloid elements are present.|||N|||F|||200505021212<CR>
```

D.1.2. Simple Narrative Report with Sections

The anatomic pathology report example below is a typical simple report whose content is to be transmitted from a laboratory or hospital to a cancer registry.

Report as it might appear printed or on a display

PATHOLOGY REPORT

Report Identification		**Patient Information**			
Facility ID:	33D1234567	Chart/MRN:	**00466144**	Address	**495 East Overshoot Drive**
Pathology ID:	97 810430	SSN/SIN:	**123456789**		
Report Date:	2004-07-28	Surname:	**MCMUFFIN**	City/Town:	**Delmar**
Report Type:	Final	Given Name:	**CANDY**	State/Prov:	**NY**
Requester ID:	594110NY	Sex:	**F**	Zip/Post Code:	**12054**
Requester:	CARING, CAREN M.D. Albany Medical Center, 43 New Scotland Ave. NY, Albany 12208	Date of Birth:	**1957-07-06**	Country:	
Procedure Date:	2004-07-20	Age:	**47** (at procedure date)		
Surgeon ID:	123456				
Surgeon:	MYELOMUS, JOHN				
Pathologist ID:	109771	Race:	**White**		
Pathologist:	GLANCE, JUSTIN	Ethnicity:			
Clinical Dx/ Comment	Carcinoma of breast. Post operative diagnosis: same.				
Clinical History	47-year old white female with (L) UOQ breast mass				
Tissue Submitted	left breast biopsy apical axillary tissue contents of left radical mastectomy				
Gross Pathology	Part #1 is labeled “left breast biopsy” and is received fresh after frozen section preparation. It consists of a single firm nodule measuring 3cm in circular diameter and 1.5cm in thickness surrounded by adherent firbrofatty tissue. On section a pale gray, slightly mottled appearance is revealed. Numerous sections are submitted for permanent processing. Part #2 is labeled "apical left axillary tissue" and is received fresh. It consists of two amorphous fibrofatty tissue masses without grossly discernible lymph nodes therein. Both pieces are rendered into numerous sections and submitted in their entirety for history. Part #3 is labeled "contents of left radical mastectomy" and is received flesh. It consists of a large ellipse of skin overlying breast tissue, the ellipse measuring 20cm in length and 14 cm in height. A freshly sutured incision extends 3cm directly lateral from the areola, corresponding to the closure for removal of part #1. Abundant amounts of fibrofatty connective tissue surround the entire beast and the deep aspect includes and 8cm length of pectoralis minor and a generous mass of overlying pectoralis major muscle. Incision from the deepest aspect of the specimen beneath the tumor mass reveals tumor extension gross to within 0.5cm of muscle. Sections are submitted according to the following code: DE- deep surgical resection margins; SU, LA, INF, ME -- full thickness radila samplings from the center of the tumor superiorly, laterally, inferiorly and medially, respectively: NI- nipple and subjacent tissue. Lymph nodes dissected free from axillary fibrofatty tissue from levels I, II, and III will be labeled accordingly.				
Microscopic	Sections of part #1 confirm frozen section diagnosis of infiltrating duct carcinoma. It is to be noted that the tumor cells show considerable pleomorphism, and mitotic figures are frequent (as many as 4 per high power field). Many foci of calcification are present within the tumor. Part #2 consists of fibrofatty tissue and single tiny lymph node free of disease. Part #3 includes 18 lymph nodes, three from Level III, two from Level II and thirteen from Level I. All lymph nodes are free of disease with the exception of one Level I lymph node, which contains several masses of metastatic carcinoma. All sections taken radially from the superficial center of the resection site fail to include tumor, indicating the tumor to have originated deep within the breast parenchyma. Similarly, there is no malignancy in the nipple region, or in the lactiferous sinuses. Sections of deep surgical margin demonstrate diffuse tumor infiltration of deep fatty tissues, however, there is no invasion of muscle. Total size of primary tumor is estimated to be 4cm in greatest dimension.				
Final Dx	1. Infiltrating duct carcinoma, left breast. 2. Lymph node, no pathologic diagnosis, left axilla. 3. Ext. of tumor into deep fatty tissue. Metastatic carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of 18 lymph nodes - Level I (12), Level II (2) and Level III (3).				
INDEPENDENT LAB SERVICES					
DELMAR, NY 12054					
INDEPENDENT LABORATORY SERVICES, INC.					

HL7 Message Encoding of this Report

There are several ways to encode this report, depending upon whether the source system divides the sections depending upon the difference specimen tissues.

This first example shows the report where all sections are combined together, with no splitting or differentiation based on the tissue specimens. The text sections are encoded using FT (formatted text) to preserve the line endings and other formatting present on the printed report.

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||97 810430|11529-5^Surgical Pathology Study
Report^LN|||200707251630|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110NY^CARING^CAREN^^M.
D.^^^^NY_PHYSICIANLICENSE^^^^MD|||||||||F|||||||109771&GLANCE&JUSTIN&&&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|FT|22637-3^Path report.final diagnosis^LN||Carcinoma of breast. Post operative diagnosis:
same.||||||F<CR>
OBX|2|FT|22636-5^Path report.relevant Hx^LN||47-year old white female with (L) UOQ breast
mass||||||F<CR>
OBX|3|FT|22633-2^Path report.site of origin^LN|1|left breast biopsy\.br\apical axillary
tissue\.br\contents of left radical mastectomy||||||F<CR>
OBX|4|FT|22634-0^Path report.gross description^LN||Part #1 is labeled "left breast biopsy" and is
received fresh after frozen section preparation. It consists of a single firm nodule measuring
3cm in circular diameter and 1.5cm in thickness surrounded by adherent firbrofatty tissue. On
section a pale gray, slightly mottled appearance is revealed. Numerous sections are submitted for
permanent processing.\.br\Part #2 is labeled "apical left axillary tissue" and is received fresh.
It consists of two amorphous fibrofatty tissue masses without grossly discernible lymph nodes
therein. Both pieces are rendered into numerous sections and submitted in their entirety for
history.\.br\Part #3 is labeled "contents of left radical mastectomy" and is received flesh. It
consists of a large ellipse of skin overlying breast tissue, the ellipse measuring 20cm in length
and 14 cm in height. A freshly sutured incision extends 3cm directly lateral from the areola,
corresponding to the closure for removal of part #1. Abundant amounts of fibrofatty connective
tissue surround the entire beast and the deep aspect includes and 8cm length of pectoralis minor
and a generous mass of overlying pectoralis major muscle. Incision from the deepest aspect of the
specimen beneath the tumor mass reveals tumor extension gross to within 0.5cm of muscle. Sections
are submitted according to the following code: DE- deep surgical resection margins; SU, LA, INF,
ME -- full thickness radila samplings from the center of the tumor superiorly, laterally,
inferiorly and medially, respectively: NI- nipple and subjacent tissue. Lymph nodes dissected
free from axillary fibrofatty tissue from levels I, II, and III will be labeled
accordingly.||||||F<CR>
OBX|5|FT|22635-7^Path report.microscopic observation^LN||Sections of part #1 confirm frozen
section diagnosis of infiltrating duct carcinoma. It is to be noted that the tumor cells show
considerable pleomorphism, and mitotic figures are frequent (as many as 4 per high power field).
Many foci of calcification are present within the tumor. Part #2 consists of fibrofatty tissue
and single tiny lymph node free of disease. Part #3 includes 18 lymph nodes, three from Level
III, two from Level II and thirteen from Level I. All lymph nodes are free of disease with the
exception of one Level I lymph node, which contains several masses of metastatic carcinoma. All
sections taken radially from the superficial center of the resection site fail to include tumor,
indicating the tumor to have originated deep within the breast parenchyma. Similarly, there is no
malignancy in the nipple region, or in the lactiferous sinuses. Sections of deep surgical margin
demonstrate diffuse tumor infiltration of deep fatty tissues, however, there is no invasion of
muscle. Total size of primary tumor is estimated to be 4cm in greatest dimension.||||||F<CR>
OBX|6|FT|22637-3^Path report.final diagnosis^LN||1. Infiltrating duct carcinoma, left
breast.\.br\2. Lymph node, no pathologic diagnosis, left axilla.\.br\3. Ext. of tumor into deep
fatty tissue. Metastatic carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of
18 lymph nodes - Level I (12), Level II (2) and Level III (3).||||||F<CR>
```

The same report can also be encoded without using formatted text. This next example shows this, and also illustrates the additional structure of using the OBX-4 Observation Sub-ID to link those areas of the report that are specific to the particular specimen (shown with numbers in the printed report above).

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||97 810430|11529-5^Surgical Pathology Study
Report^LN|||200707251630|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110NY^CARING^CAREN^^M.
D.^^^^NY_PHYSICIANLICENSE^^^^MD|||||||||F|||||||109771&GLANCE&JUSTIN&&&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|TX|22637-3^Path report.final diagnosis^LN||Carcinoma of breast. Post operative diagnosis:
same.||||||F<CR>
OBX|2|TX|22636-5^Path report.relevant Hx^LN||47-year old white female with (L) UOQ breast
mass||||||F<CR>
OBX|3|TX|22633-2^Path report.site of origin^LN|1|left breast biopsy||||||F<CR>
OBX|4|TX|22633-2^Path report.site of origin^LN|2|apical axillary tissue||||||F<CR>
OBX|5|TX|22633-2^Path report.site of origin^LN|3|contents of left radical mastectomy||||||F<CR>
OBX|6|TX|22634-0^Path report.gross description^LN|1|Part #1 is labeled "left breast biopsy" and
is received fresh after frozen section preparation. It consists of a single firm nodule measuring
3cm in circular diameter and 1.5cm in thickness surrounded by adherent firbrofatty tissue. On
section a pale gray, slightly mottled appearance is revealed. Numerous sections are submitted for
permanent processing.||||||F<CR>
OBX|7|TX|22634-0^Path report.gross description^LN|2|Part #2 is labeled "apical left axillary
tissue" and is received fresh. It consists of two amorphous fibrofatty tissue masses without
grossly discernible lymph nodes therein. Both pieces are rendered into numerous sections and
submitted in their entirety for history.||||||F<CR>
OBX|8|TX|22634-0^Path report.gross description^LN|3|Part #3 is labeled "contents of left radical
mastectomy" and is received flesh. It consists of a large ellipse of skin overlying breast
tissue, the ellipse measuring 20cm in length and 14 cm in height. A freshly sutured incision
extends 3cm directly lateral from the areola, corresponding to the closure for removal of part
#1. Abundant amounts of fibrofatty connective tissue surround the entire beast and the deep
aspect includes and 8cm length of pectoralis minor and a generous mass of overlying pectoralis
major muscle. Incision from the deepest aspect of the specimen beneath the tumor mass reveals
tumor extension gross to within 0.5cm of muscle. Sections are submitted according to the
following code: DE- deep surgical resection margins; SU, LA, INF, ME -- full thickness radila
samplings from the center of the tumor superiorly, laterally, inferiorly and medially,
respectively: NI- nipple and subjacent tissue. Lymph nodes dissected free from axillary
fibrofatty tissue from levels I, II, and III will be labeled accordingly.||||||F<CR>
OBX|9|TX|22635-7^Path report.microscopic observation^LN||Sections of part #1 confirm frozen
section diagnosis of infiltrating duct carcinoma. It is to be noted that the tumor cells show
considerable pleomorphism, and mitotic figures are frequent (as many as 4 per high power field).
Many foci of calcification are present within the tumor. Part #2 consists of fibrofatty tissue
and single tiny lymph node free of disease. Part #3 includes 18 lymph nodes, three from Level
III, two from Level II and thirteen from Level I. All lymph nodes are free of disease with the
exception of one Level I lymph node, which contains several masses of metastatic carcinoma. All
sections taken radially from the superficial center of the resection site fail to include tumor,
indicating the tumor to have originated deep within the breast parenchyma. Similarly, there is no
malignancy in the nipple region, or in the lactiferous sinuses. Sections of deep surgical margin
demonstrate diffuse tumor infiltration of deep fatty tissues, however, there is no invasion of
muscle. Total size of primary tumor is estimated to be 4cm in greatest dimension.||||||F<CR>
OBX|10|TX|22637-3^Path report.final diagnosis^LN|1|1. Infiltrating duct carcinoma, left
breast.||||||F<CR>
OBX|11|TX|22637-3^Path report.final diagnosis^LN|2|2. Lymph node, no pathologic diagnosis, left
axilla.||||||F<CR>
OBX|12|TX|22637-3^Path report.final diagnosis^LN|3|3. Ext. of tumor into deep fatty tissue.
Metastatic carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of 18 lymph nodes
- Level I (12), Level II (2) and Level III (3).||||||F<CR>
```

D.1.3. Simple Narrative Report with Specimen Information

Example Message ("Old Style") from Sample Pathology Report

Below is a sample ORU message that supports the sending of the same data as illustrated in the sample pathology report shown in the section D.1.2 above. This example shows the implementation as per the HL7 2.5.1 formatting specified in the Guide. This message is typical of the case of Single Facility Specimen Processing and Reporting described above in section 2.3, and does not use the SPM segment; it is intended to illustrate the 'nonSPM-style' reporting format which does not separate specimen-specific observations.

Note that there are a number of data fields representing information that is not explicit on the printed report, such as the Assigning Authority for the Patient MRN in the report, and the specific LOINC codes for the sections and reported items. These may be known and captured in a lab system, but may not be typically rendered in a printed sample. When they have slots in the HL7 message, NAACCR recommends that they be populated. Sample data has been created for these utilizing the samples in the field descriptions in Chapter 3.

Please note that in all examples, the end of a segment is shown in the example with a "<CR>" indicating a 'carriage return/line feed' or newline. This is to aid readability in the examples in this document; HL7 messages do <u>not</u> have these four characters at the end of the segment, just a newline character. Refer to Appendix C for examples without <CR> and in landscape for easier review.

"nonSPM-style" HL7 v. 2.5.1 example for multiple specimens

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|ECLRS|NYSCR|200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1||||||
|||VOL_V_30_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS|000039^^^^LR|McMuffin^Candy^^^Ms.||19570706|F||2106-3|495 East Overshoot
Drive^^Delmar^NY^12054^^H||^^^^^518^5559999|||M|||4442331235<CR>
PV1|1|N|||||594110NY^CARING^CAREN^^^DR|59411ONY^CARING^CAREN^^^DR<CR>
ORC|RE|||||||||||||||||||Albany Medical Center^^123456^^^AHA|43 New Scotland
Ave^^Albany^NY^12208|^^^^^518^3334444|100 Provider St^^Albany^NY^12205<CR>
OBR|1||97 810430|11529-5^SURGICAL PATH REPORT^LN^^PATHOLOGY
REPORT^L|||200407200930||||||||&&&&&&&&left breast
mass|123456^MYELOMUS^JOHN^^MD|^^^^^518^5559999|||||200407280840|||F|||||||109771&GLANCE&JUSTIN&A&
MD&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|TX|22636-5^Clinical history^LN||47-year old white female with (L) UOQ breast
mass||||||F|||200407200930<CR>
OBX|2|ST|22633-2^Nature of specimen^LN|1|left breast biopsy||||||F|||200407200930<CR>
OBX|3|ST|22633-2^Nature of specimen^LN|2|apical axillary tissue||||||F|||200407200930<CR>
OBX|4|ST|22633-2^Nature of specimen^LN|3|contents of left radical
mastectomy||||||F|||200407200930<CR>
OBX|5|TX|22634-0^Gross pathology^LN|1|Part #1 is labeled "left breast biopsy" and is received
fresh after frozen section preparation. It consists of a single firm nodule measuring 3cm in
circular diameter and 1.5cm in thickness surrounded by adherent fibrofatty tissue. On section a
pale gray, slightly mottled appearance is revealed. Numerous sections are submitted for permanent
processing.||||||F|||200407200930<CR>
OBX|6|TX|22634-0^gross pathology^LN|2|Part #2 is labeled "apical left axillary tissue" and is
received fresh. It consists of two amorphous fibrofatty tissue masses without grossly discernible
lymph nodes therein. Both pieces are rendered into numerous sections and submitted in their
entirety for history.||||||F|||200407200930<CR>
OBX|7|TX|22634-0^gross pathology^LN|3|Part #3 is labeled "contents of left radical mastectomy"
and is received flesh. It consists of a large ellipse of skin overlying breast tissue, the
ellipse measuring 20cm in length and 14 cm in height. A freshly sutured incision extends 3cm
directly lateral from the areola, corresponding to the closure for removal of part #1. Abundant
amounts of fibrofatty connective tissue surround the entire beast and the deep aspect includes
and 8cm length of pectoralis minor and a generous mass of overlying pectoralis major muscle.
Incision from the deepest aspect of the specimen beneath the tumor mass reveals tumor extension
gross to within 0.5cm of muscle. Sections are submitted according to the following code: DE- deep
surgical resection margins; SU, LA, INF, ME -- full thickness radila samplings from the center of
the tumor superiorly, laterally, inferiorly and medially, respectively: NI- nipple and subjacent
tissue. Lymph nodes dissected free from axillary fibrofatty tissue from levels I, II, and III
will be labeled accordingly.||||||F|||200407200930<CR>
```

```
OBX|8|TX|22635-7^Microscopic pathology^LN|1|Sections of part #1 confirm frozen section diagnosis
of infiltrating duct carcinoma. It is to be noted that the tumor cells show considerable
pleomorphism, and mitotic figures are frequent (as many as 4 per high power field). Many foci of
calcification are present within the tumor. ||||||F|||200407200930<CR>
OBX|9|TX|22635-7^Microscopic pathology^LN|2|Part #2 consists of fibrofatty tissue and single tiny
lymph node free of disease. ||||||F|||200407200930<CR>
OBX|10|TX|22635-7^microscopic pathology^LN|3|Part #3 includes 18 lymph nodes, three from Level
III, two from Level II and thirteen from Level I. All lymph nodes are free of disease with the
exception of one Level I lymph node, which contains several masses of metastatic carcinoma. All
sections taken radially from the superficial center of the resection site fail to include tumor,
indicating the tumor to have originated deep within the breast parenchyma. Similarly, there is no
malignancy in the nipple region, or in the lactiferous sinuses. Sections of deep surgical margin
demonstrate diffuse tumor infiltration of deep fatty tissues, however, there is no invasion of
muscle. Total size of primary tumor is estimated to be 4cm in greatest
dimension.||||||F|||200407200930<CR>
OBX|11|TX|22637-3^Final diagnosis^LN|1|1. Infiltrating duct carcinoma, left breast.
||||||F|||200407200930<CR>
OBX|12|TX|22637-3^Final diagnosis^LN|2|2. Lymph node, no pathologic diagnosis, left
axilla.||||||F|||200407200930<CR>
OBX|13|TX|22637-3^Final diagnosis^LN|3|3. Ext. of tumor into deep fatty tissue. Metastatic
carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of 18 lymph nodes - Level I
(12), Level II (2) and Level III (3). ||||||F|||200407200930<CR>
OBX|14|TX|22638-1^comments^LN||Clinical diagnosis: carcinoma of breast. Post-operative diagnosis:
same.||||||F|||200407200930<CR>
```

"SPM segment style" HL7 v. 2.5.1 example for multiple specimens

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|ECLRS|NYSCR|200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1||||||
|||VOL_V_30_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS|000039^^^^LR|McMuffin^Candy^^^Ms.||19570706|F||2106-3|495 East Overshoot
Drive^^Delmar^NY^12054^^H||^^^^^518^5559999|||M|||4442331235<CR>
PV1|1|N|||||594110NY^CARING^CAREN^^^DR|59411ONY^CARING^CAREN^^^DR<CR>
ORC|RE|||||||||||||||||||Albany Medical Center^^123456^^^AHA|43 New Scotland
Ave^^Albany^NY^12208|^^^^^518^3334444|100 Provider St^^Albany^NY^12205<CR>
OBR|1||97 810430|11529-5^SURGICAL PATH REPORT^LN^^PATHOLOGY
REPORT^L|||20040720|||||||||123456^MYELOMUS^JOHN^^MD|^^^^^518^4244243|||||20040728|||F|||||||1097
71&GLANCE&JUSTIN&A&MD&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|TX|22636-5^CLINICAL HISTORY^LN||47-year old white female with (L) UOQ breast
mass||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|2|TX|22638-1^COMMENTS^LN||Carcinoma of breast. Post operative
diagnosis:same||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA
SPM|1|^97 810430-
1&ILSPCID||TISS^Tissue^HL70487||||||||||||200407200930|200407211500||||||||||||0704500123^^^33D1
234567&INDEPENDENT LAB SERVICES<CR>
OBX|1|TX|22633-2^Nature of Specimen^LN^L47^SUBMITTED TISSUE^L|1|left breast
biopsy||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|2|TX|22634-0^Gross Pathology^LN^L567^GROSS PATHOLOGY^L|1|Part #1 is labeled "left breast
biopsy" and is received fresh after frozen section preparation. It consists of a single firm
nodule measuring 3cm in circular diameter and 1.5cm in thickness surrounded by adherent
fibrofatty tissue. On section a pale gray, slightly mottled appearance is revealed. Numerous
sections are submitted for permanent processing. ||||||F|||200407280841|33D1234567^INDEPENDENT
LAB SERVICES^CLIA<CR>
OBX|3|TX|22635-7^Microscopic Pathology^LN^L589^MICROSCOPIC^L|1|Sections of part #1 confirm frozen
section diagnosis of infiltrating duct carcinoma. It is to be noted that the tumor cells show
considerable pleomorphism, and mitotic figures are frequent (as many as 4 per high power field).
Many foci of calcification are present within the
tumor.||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|4|TX|22637-3^Path report.final diagnosis^LN|1|1. Infiltrating duct carcinoma, left
breast.||||||F|||200407280841|33D1234567^INDEPENDENT LAB SERVICES^CLIA
SPM|2|^97 810430-
2&ILSPCID||TISS^Tissue^HL70487||||||||||||200407200930|2004070211500||||||||||||0704500123^^^33D
1234567&INDEPENDENT LAB SERVICES<CR>
OBX|1|TX|22633-2^Nature of Specimen^LN^L47^SUBMITTED TISSUE^L|2|apical axillary tissue
||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
```

```
OBX|2|TX|22634-0^Gross Pathology^LN^L567^GROSS PATHOLOGY^L|2|Part #2 is labeled "apical left
axillary tissue" and is received fresh. It consists of two amorphous fibrofatty tissue masses
without grossly discernible lymph nodes therein. Both pieces are rendered into numerous sections
and submitted in their entirety for history. ||||||F|||200407280841|33D1234567^INDEPENDENT LAB
SERVICES^CLIA<CR>
OBX|3|TX|22635-7^Microscopic Pathology^LN^L589^MICROSCOPIC^L|2|Part #2 consists of fibrofatty
tissue and single tiny lymph node free of disease.||||||F|||200407200930|33D1234567^INDEPENDENT
LAB SERVICES^CLIA<CR>
OBX|4|TX|22637-3^Path report.final diagnosis^LN|2|2. Lymph node, no pathologic diagnosis, left
axilla.||||||F|||200407280841|33D1234567^INDEPENDENT LAB SERVICES^CLIA
SPM|3|^97 810430-
3&ILSPCID||TISS^Tissue^HL70487||||||||||||200407200930|20040702115O0||||||||||||0704500123^^^33D
1234567&INDEPENDENT LAB SERVICES<CR>
OBX|1|TX|22633-2^Nature of Specimen^LN^L47^SUBMITTED TISSUE^L|3|contents of left radical
mastectomy ||||||F|||200407200930|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|2|TX|22634-0^Gross Pathology^LN^L567^GROSS PATHOLOGY^L|3|Part #3 is labeled "contents of left
radical mastectomy" and is received flesh. It consists of a large ellipse of skin overlying
breast tissue, the ellipse measuring 20cm in length and 14 cm in height. A freshly sutured
incision extends 3cm directly lateral from the areola, corresponding to the closure for removal
of part #1. Abundant amounts of fibrofatty connective tissue surround the entire beast and the
deep aspect includes and 8cm length of pectoralis minor and a generous mass of overlying
pectoralis major muscle. Incision from the deepest aspect of the specimen beneath the tumor mass
reveals tumor extension gross to within 0.5cm of muscle. Sections are submitted according to the
following code: DE- deep surgical resection margins; SU, LA, INF, ME -- full thickness radila
samplings from the center of the tumor superiorly, laterally, inferiorly and medially,
respectively: NI- nipple and subjacent tissue. Lymph nodes dissected free from axillary
fibrofatty tissue from levels I, II, and III will be labeled accordingly.
||||||F|||200407280841|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|3|TX|22635-7^Microscopic Pathology^LN^L589^MICROSCOPIC^L|3|Part #3 includes 18 lymph nodes,
three from Level III, two from Level II and thirteen from Level I. All lymph nodes are free of
disease with the exception of one Level I lymph node, which contains several masses of metastatic
carcinoma. All sections taken radially from the superficial center of the resection site fail to
include tumor, indicating the tumor to have originated deep within the breast parenchyma.
Similarly, there is no malignancy in the nipple region, or in the lactiferous sinuses. Sections
of deep surgical margin demonstrate diffuse tumor infiltration of deep fatty tissues, however,
there is no invasion of muscle. Total size of primary tumor is estimated to be 4cm in greatest
dimension.||||||F|||200704110841|33D1234567^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|4|TX|22637-3^Path report.final diagnosis^LN|3|3. Ext. of tumor into deep fatty tissue.
Metastatic carcinoma, left axillary lymph node (1) Level I. Free of disease 17 of 18 lymph nodes
- Level I (12), Level II (2) and Level III (3).||||||F|||200407280841|33D1234567^INDEPENDENT LAB
SERVICES^CLIA<CR>
```

D.1.4. Complex Reports

As described in section 2.3.5, a laboratory that has sent a case out for a consult or special study, may report their original report data and the consult (or special study) from a different institution in the same message that is sent to a cancer registry. This example illustrates the format and linkage of these two reports from different institutions being sent in the same message to a registry.

INDEPENDENT LAB SERVICES, PID 6767676767 October 30, 2010

TISSUE SUBMITTED

A: Right colon
B: Rectosigmoid @ 15 cm

GROSS PATHOLOGY

A: The anatomical site is not specified on the container's label. The specimen consists of a solitary pinkish-tan tissue fragment measuring 0.6 cm in greatest dimension. The specimen is entirely submitted in block A.

B: The anatomical site is not specified on the container's label. The specimen consists of a single dark tan, multi-lobulated sessile polyp that measures 2.1 in greatest diameter x 1.4 in height and 0.9 cm in thickness. Black ink is applied to marked the line of resection. The polyp is serially sectioned and entirely submitted in blocks B1 and B2.

MICROSCOPIC

A: Sections show two biopsies of colon in which there is mild chronic inflammation in the lamina propria. The colonic glands are regular and the goblet cell population is preserved. There is no evidence of dysplasia or malignancy in the plane of sections examined.

B: Sections show invasive, moderately differentiated adenocarcinoma. The tumour is forming complex glands, that are lined by severely dysplastic epithelium and show necrosis within the glandular lumens. The tumour glands in infiltrate the lamina propria, the muscularis mucosa and the stroma beyond the muscularis mucosa. There is associated with acute and chronic inflammation and stromal reaction. The malignant glands are 2.4 mm from the closest point of the cauterized resection margin of the polyp. Surface ulceration is noted. The background shows underlying villous adenoma.

DIAGNOSIS

A: BIOPSIES OF RIGHT COLON - NO EVIDENCE OF DYSPLASIA OR MALIGNANCY. (PLEASE SEE COMMENTS).
B: COLON AND RECTUM: Polypectomy.
Tumour Site - Rectosigmoid, at 15 cm.
Specimen Integrity - Intact.
Polyp Size
Greatest dimension: 2.1 cm.
Additional dimensions: 1.9 x 1.4 cm.
Polyp Configuration - Sessile. (Please see Comments).
Size of Invasive Carcinoma:
Greatest dimension: 1.9 cm.
Histologic Type - Adenocarcinoma.
Histologic Grade:
Low-grade (well differentiated to moderately differentiated)
Microscopic Tumor Extension:
- Invasion (deepest) - submucosa.
Margins:
Deep Margin (Stalk Margin)
Uninvolved by invasive carcinoma.
Mucosal/Lateral Margin
Uninvolved by invasive carcinoma.
Vascular Invasion - Indeterminate. (Please see comments).
Type of Polyp in Which Invasive Carcinoma Arose:
- Villous adenoma.
Ancillary Studies - IHC performed.

The case is referred to Dr.M. Yyyyy at HITECK PATH LAB for Consultation. (Please see Comments).

COMMENTS

A: There is no evidence of dysplasia or malignancy in the plane of sections examined. Correlation with endoscopic findings and if dysplasia/malignancy is a clinical possibility, repeat biopsy is recommended.

B: The polyp grossly is a sessile polyp, morphologically is a malignant polyp. At the tip of the polyp there is intramucosal carcinoma; however, most of the polyp shows invasive moderately differentiated adenocarcinoma. In block #2 there is a portion of adjacent mucosa suggestive of small stalk, that measures 0.5 cm in length, 0.6 cm in diameter, however this could represent adjacent mucosa. Based on routine H&E alone there is no evidence of lymphovascular invasion. Immunohistochemical stain with D2-40 is non conclusive. The tumour glands are 2.1 mm from the closest point of the cauterized polypectomy resection line.

The case was verbally communicated with Dr. A. Wwwww on 19/10/10.

Electronically signed by Dr. J. Glance, MD. 21/10/10

Consultation Report

HITECK PATH LAB, PID 6767676767 October 29, 2010

SPECIMENS SUBMITTED
Colon and rectum

DIAGNOSIS
Right colon, biopsy (S10-1234, Part A):
- COLONIC MUCOSA WITH NO SIGNIFICANT HISTOLOGIC ABNORMALITY.
Rectosigmoid colon, biopsy (S10-1234, Part B):

- ADENOCARCINOMA IN A BACKGROUND OF A TUBULAR ADENOMA.
Specimen
Tumour Site: Other (specify): Rectosigmoid colon @ 15 cm
Specimen Integrity: Intact
Polyp Size
Dimensions: 2.1 cm
Polyp Configuration: Sessile
Tumour
Histologic Type: Adenocarcinoma
Histologic Grade: Low-grade (well-differentiated to moderately differentiated)
Extent
Size of invasive Carcinoma
Dimensions: 1.9 cm
Microscopic Tumour Extension: Submucosa
Margins
Deep Margin (stalk margin): Uninvolved by invasive carcinoma
Distance of Invasive Carcinoma from margin (mm): 2.5
Mucosal / Lateral Margin: Uninvolved by invasive carcinoma
Accessory Findings
Lymph-Vascular Invasion: Not identified
Type of Polyp in Which Invasive Carcinoma Arose: Tubular adenoma
Special Studies
Ancillary Studies: Not performed
Additional Non-Tumour
Additional Pathologic Findings: None identified

Reported by Mxxxx Yyyyy, MD, address zzzz (October 28, 2010)

October 29, 2010

Example Message for this combined report:

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||201010301339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_4
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.18^ISO<CR>
PID|1||123456789^^^^SS~6767676767^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495
East Overshoot Drive^^Delmar^ON^O8D 6L7^CAN^H|||||M<CR>
ORC|RE|||||||||||||||||||||Central Hospital Ltd.|43 New Scotland Ave.^^Ancaster^ON^L9G 4V5^CAN||43
New Scotland Ave.^^Ancaster^ON^L9G 4V5^CAN<CR>
OBR|1||97 810430|60567-5^Comprehensive pathology report
panel^LN|||201010291600|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594111^CARING^CAREN^^M.D.^
^^^ONTARIOLICENSE^^^^MD|||||||||F|||||||109771&GLANCE&JUSTIN&&&&&&ONTARIOLICENSE<CR>
OBR|2||97 810430|11529-5^Study
Report^LN|||201010210930|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110^CARING^CAREN^^M.D.
^^^^ONTARIOLICENSE^^^^MD|||||||||F||||^97 810430|||109771&GLANCE&JUSTIN&&&&&&ONTARIOLICENSE<CR>
OBX|1|FT|22634-0^Pathology report.gross observation^LN|1|A:  The anatomical site is not specified
on the container's label. The specimen  consists of a solitary pinkish-tan tissue fragment
measuring 0.6 cm in greatest  dimension.  The specimen is entirely submitted in block
A.||||||F|||201010210800|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|2|FT|22634-0^Pathology report.gross observation^LN|2|B:  The anatomical site is not specified
on the container's label.  The  specimen consists of a single dark tan, multi-lobulated sessile
polyp that measures 2.1 in greatest diameter x 1.4 in height and 0.9 cm in thickness. Black ink
is applied to marked the line of resection.  The polyp is serially sectioned and entirely
submitted in blocks B1 and B2.||||||F|||201010210800|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|3|FT|22635-7^Path report.microscopic observation^LN|1|A:  Sections show two biopsies of colon
in which there is mild chronic inflammation in the lamina propria.  The colonic glands are
regular and the goblet cell population is preserved.  There is no evidence of dysplasia or
malignancy in the plane of sections examined.||||||F|||201010210930|01D0301145^INDEPENDENT LAB
SERVICES^CLIA<CR>
OBX|4|FT|22635-7^Path report.microscopic observation^LN|2|B:  Sections show invasive, moderately
differentiated adenocarcinoma.  The tumour is forming complex glands, that are lined by severely
dysplastic epithelium and show necrosis within the glandular lumens.  The tumour glands in
infiltrate the lamina propria, the muscularis mucosa and the stroma beyond the muscularis mucosa.
```

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 There is associated with acute and chronic inflammation and stromal reaction.  The malignant
glands are 2.4 mm from the closest point of the cauterized resection margin of the polyp.
Surface ulceration is noted. The background shows underlying villous
adenoma.||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|5|FT|22637-3^Pathology report final diagnosis^LN|1|A:  BIOPSIES OF RIGHT COLON - NO EVIDENCE
OF DYSPLASIA OR MALIGNANCY.  (PLEASE SEE COMMENTS).||||||F|||201010210930|01D0301145^INDEPENDENT
LAB SERVICES^CLIA<CR>
OBX|6|FT|22637-3^Pathology report final diagnosisLN|2|B:  COLON AND RECTUM:
Polypectomy.||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|7|FT|22637-3^Pathology report final diagnosis^LN|2|Tumour Site - Rectosigmoid, at 15 cm.
\.br\  Specimen Integrity - Intact. \.br\  Polyp Size \.br\     Greatest dimension: 2.1 cm. \.br\
Additional dimensions: 1.9 x 1.4 cm.\.br\   Polyp Configuration - Sessile.  (Please see
Comments). \.br\   Size of Invasive Carcinoma:\.br\     Greatest dimension:  1.9 cm.\.br\
Histologic Type - Adenocarcinoma. \.br\  Histologic Grade:\.br\   Low-grade (well differentiated
to moderately differentiated)\.br\    Microscopic Tumor Extension: \.br\    - Invasion (deepest)
- submucosa. \.br\   Margins: \.br\    Deep Margin (Stalk Margin)\.br\      Uninvolved by
invasive carcinoma.\.br\    Mucosal/Lateral Margin\.br\      Uninvolved by invasive
carcinoma.\.br\   Vascular Invasion - Indeterminate.   (Please see comments).\.br\ Type of Polyp
in Which Invasive Carcinoma Arose:\.br\   - Villous adenoma. \.br\ Ancillary Studies - IHC
performed.  \.br\The case is referred to Dr.M. Yyyyy at HITECK PATH LAB  for Consultation.
(Please see Comments).||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|8|FT|22638-1^Pathology report comments^LN|1|A:  There is no evidence of dysplasia or
malignancy in the plane of sections examined.  Correlation with endoscopic findings and if
dysplasia/malignancy is a clinical possibility, repeat biopsy is
recommended.||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|9|FT|22638-1^Pathology report comments^LN|2|B:  The polyp grossly is a sessile polyp,
morphologically is a malignant polyp. At the tip of the polyp there is intramucosal carcinoma;
however, most of the polyp shows invasive moderately differentiated adenocarcinoma.  In block #2
there is a portion of adjacent mucosa suggestive of small stalk, that measures 0.5 cm in length,
0.6 cm in diameter, however this could represent adjacent mucosa.  Based on routine H\T\E alone
there is no evidence of lymphovascular invasion.  Immunohistochemical stain with D2-40 is non
conclusive.  The tumour glands are 2.1 mm from the closest point of the cauterized polypectomy
resection line.||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|10|FT|22638-1^Pathology report comments^LN||The case was verbally communicated with Dr. A.
Wwwww  on 19/10/10.||||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
OBX|11|FT|22638-1^Pathology report comments^LN||Electronically signed by Dr. J. Glance, MD.
21/10/10|||||F|||201010210930|01D0301145^INDEPENDENT LAB SERVICES^CLIA<CR>
SPM|1|^97 810430-A&ILSPCID|^97 810430|TISS^Tissue^HL70487||||||||||||||201010201600<CR>
OBX|1|FT|^TISSUE SUBMITTED|1|A: Right colon||||||F|||201010210930|01D0301145^INDEPENDENT LAB
SERVICES^CLIA<CR>
SPM|2|^97 810430-B&ILSPCID|^97 810430|TISS^Tissue^HL70487||||||||||||||201010201600<CR>
OBX|1|FT|^TISSUE SUBMITTED|2|B: Rectosigmoid @ 15 cm||||||F|||201010210930|01D0301145^INDEPENDENT
LAB SERVICES^CLIA<CR>
OBR|3||S10-1234|60570-9^Consultation
note^LN|||20101028|||||||TISS^Tissue^HL70070|109771^GLANCE^JUSTIN^^M.D.^^^^ONTARIOLICENSE^^^^MD|
||||||||F|22637-3&Pathology report final diagnosis&LN^^The case is referred to Dr.M. Yyyyy at
HITECK PATH LAB  for Consultation.|||^97 810430|||7878787&Yyyyyy&Mxxxx&&&&&&ONTARIOLICENSE<CR>
OBX|1|FT|^SPECIMENS SUBMITTED||Colon and rectum||||||F|||201010281430|01D0301145^HITECK PATH
LAB^CLIA<CR>
OBX|2|FT|22637-3^Pathology report final diagnosis^LN|1|Right colon, biopsy (S10-1234, Part A):\.br\- COLONIC
MUCOSA WITH NO SIGNIFICANT HISTOLOGIC ABNORMALITY.||||||F|||201010281430|01D0301145^HITECK PATH
LAB^CLIA<CR>
OBX|3|FT|22637-3^Pathology report final diagnosis^LN|2|Rectosigmoid colon, biopsy (S10-1234, Part
B):\.br\ - ADENOCARCINOMA IN A BACKGROUND OF A TUBULAR ADENOMA.\.br\  Specimen\.br\      Tumour
Site:      Other (specify): Rectosigmoid colon @ 15 cm\.br\      Specimen Integrity:
Intact\.br\      Polyp Size\.br\           Dimensions:  2.1 cm\.br\      Polyp Configuration:
Sessile\.br\ Tumour\.br\      Histologic Type:     Adenocarcinoma\.br\      Histologic Grade:
Low-grade (well-differentiated to moderately differentiated)\.br\ Extent\.br\      Size of
invasive Carcinoma\.br\         Dimensions:    1.9 cm\.br\      Microscopic Tumour Extension:
Submucosa\.br\ Margins\.br\      Deep Margin (stalk margin):  Uninvolved by invasive
carcinoma\.br\           Distance of Invasive Carcinoma from margin (mm):  2.5\.br\      Mucosal
/ Lateral Margin:  Uninvolved by invasive carcinoma\.br\ Accessory Findings\.br\      Lymph-
Vascular Invasion:  Not identified\.br\      Type of Polyp in Which Invasive Carcinoma Arose:
Tubular adenoma\.br\ Special Studies\.br\      Ancillary Studies:  Not performed\.br\ Additional
Non-Tumour\.br\      Additional Pathologic Findings:   None
identified||||||F|||201010281430|01D0301145^HITECK PATH LAB^CLIA<CR>
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7.2 SYNOPTICALLY STRUCTURED REPORT EXAMPLES

Synoptically structured reports are textual reports, but are formatted in a style where each collected clinical data item is on its own line, and labeled appropriately. Every line on the displayed or printed report is transmitted in the message.

D.2.1. Simple Report – Single Site, Single Primary

The anatomic pathology report example below is a typical simple report whose content is to be transmitted from a laboratory or hospital to a cancer registry.

Report Identification		**Patient Information**			
Facility ID:	33D1234567	Chart/MRN:	**00466144**	Address	**495 East Overshoot Drive**
Pathology ID:	97 810430	SSN/SIN:	**123456789**		
Report Date:	2004-07-28	Surname:	**MCMUFFIN**	City/Town:	**Delmar**
Report Type:	Final	Given Name:	**CANDY**	State/Prov:	**NY**
Requester ID:	594110NY	Sex:	**F**	Zip/Post Code:	**12054**
Requester:	CARING, CAREN M.D. Albany Medical Center, 43 New Scotland Ave. NY, Albany 12208	Date of Birth:	**1957-07-06**	Country:	
Procedure Date:	2004-07-20	Age:	**47** (at procedure date)		
Surgeon ID:	123456				
Surgeon:	MYELOMUS, JOHN				
Pathologist ID:	109771	Race:	**White**		
Pathologist:	GLANCE, JUSTIN	Ethnicity:			
Clinical Dx/ Comment	Carcinoma of breast. Post operative diagnosis: same.				
Clinical History	47-year old white female with (L) UOQ breast mass				
Tissue Submitted	Left breast lesion - short stitch superior. Long stitch lateral.				
Gross Pathology	SPECIMEN SITE DESCRIBED ON CONTAINER: left breast lesion SPECIMEN DESCRIPTION Tissue/s: consistent with breast lumpectomy, with attached skin ellipse Handling Prior to Receipt in Lab: specimen received intact Clinical Orientation: attached short suture, described on requisition as "superior" and attached long suture, described as "lateral" - used for the orientation of the specimen (below) Resection Margins: inked: red medial and lateral blue superior green inferior black deep Other Handling in Lab: sectioned and left for overnight fixation Approximate Fixation Time: > 48 hours/ < 7 days Specimen Size: breast 7.1 x 6.2 x 2.5 cm in greatest dimensions skin ellipse 3.3 x 0.6 cm Diagnostic Imaging for Identification of Suspect Area/s: not required Breast Tumour: present - see below Size: difficult to measure accurately; a 0.6 cm area of hemorrhage immediately adjacent tumour, obscuring tumour margin approximately 2.0 x 1.2 cm in greatest dimensions Location: 11 o'clock - as per prior clinical history Appearance: spiculated, ill-defined, firm, grey-white Evidence of Spread or Complications: none Resection Lines: 0.3 cm from the closest resection margin - the deep 0.8 cm from the next closest resection margin –				

	the junction of the superior and inferior (superficially) 1.2 cm from all remaining resection margins, the next closest being the medial Other Breast: moderately fibrous centrally, and surrounding tumour Nipple: not applicable - not included with specimen Skin: normal Lymph Nodes: none seen Axillary Tissue: not applicable - none included with specimen Other Abnormalities/ Comments: none MATERIAL SUBMITTED FOR HISTOLOGY: entire tumour, and other representative sections BLOCKS SUBMITTED TO HISTOLOGY: A,B complete cross-section of tumour, in its largest dimension - split in two C tumour including closest (deep) resection margin D-G ? tumour including deep margin H fibrous breast including inferior resection margin I breast including lateral resection margin J breast including medial resection margin K section immediately superficial, but perpendicular to that in A,B including superior margin, and skin ellipse
Microscopic	Neoadjuvant Treatment: unknown - not provided clinically Specimen Type: lumpectomy Lymph Node Sampling: sentinel lymph node biopsy Specimen Size: Greatest Dimension (cm): 7.1 Comments: as described grossly Laterality: left Comments: as described clinically Features of Malignancy: Tumour Site: not specified clinically Comments: described as "11 o'clock" in the Clinical History for a previous core biopsy (S*-*****) - likely the same site as the tumour in the specimen here Invasive Carcinoma: present Histologic Type: invasive ductal carcinoma Comments: with prominent lobular differentiation; for instance, the carcinoma spreads as individual cells and small groups of cells at the edge of the main tumour mass Tumour Distribution: single focus only Comments: seen in the area described grossly Size of Invasive Component: Greatest Dimension (cm): 1.1 Comments: exact size difficult to be certain of, because of the effect of previous biopsy, but appearing greater than 1.0 cm in largest dimension, from the microscopic slides Histologic Grade: Tubule Formation: 3/3 Nuclear Pleomorphism: 2/3 Mitotic Count (40x): 1/3 Modified Nottingham Grade: Grade II/III - moderately differentiated Skin Involvement: absent Chest Wall Involvement: not applicable - none included with the specimen Venous/Lymphatic Invasion: absent Block(s) for Receptor Studies: being sent to: LHO Blocks Submitted: G In Situ Carcinoma: absent

	Comments: except in some very minute foci in and around the invasive tumour Lymph Nodes: Lymph Nodes Present: yes Number Examined: 1 Number Involved: 0 AJCC Staging: Additional pTNM Descriptors: not applicable Primary Tumour (pT): pT1c - tumour more than 1.0 cm but not more than 2.0 cm in greatest dimension Distant Metastasis (pM): pMx - cannot be assessed Resection Margin(s): Involvement by Invasive Carcinoma: absent Closest Margin(s): deep, in a number of slides - and particularly close in Slide G Distance to Closest Margin (mm): 1 Comments: (0.1 cm) Correlation with IOC: not applicable Additional Pathologic Findings: reactive fibrosis around the carcinoma changes around the carcinoma consistent with the effect of previous biopsy some immunohistochemistry will be ordered to confirm some of the findings above - that will be reported in an Addendum Report to follow fibrocystic change in the background reactive changes in the lymph node
Final Dx	SKIN ELLIPSE AND UNDERLYING BREAST AND ADIPOSE TISSUE (LEFT), LUMPECTOMY: INVASIVE DUCTAL CARCINOMA - ADDENDUM AND CONSULTATION REPORTS WITH RECEPTORSTATUS TO FOLLOW
INDEPENDENT LAB SERVICES	
DELMAR, NY 12054	
INDEPENDENT LABORATORY SERVICES, INC.	

HL7 Message Encoding of this Synoptic Report

Note that all data in the report that is carried in this message is of value type (OBX-2) text ("TX"). Note also that this illustrates the recommended use of OBX-5 Observation Sub-ID to link groups of observations with their heading title. The non-synoptic portion of the report is shown reported in the initial OBR.

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||97 810430|60567-5^Comprehensive pathology report
panel^LN|||200707251630|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110NY^CARING^CAREN^^M.D
.^^^^NY_PHYSICIANLICENSE^^^^MD|||||||||F|||||||109771&GLANCE&JUSTIN&&&&&&NY_PHYSICIANLICENSE<CR>
OBR|2||97 810430|11529-5^Surgical Pathology
Study^LN|||200707251630|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110NY^CARING^CAREN^^M.D
.^^^^NY_PHYSICIANLICENSE^^^^MD|||||||||F|||||||109771&GLANCE&JUSTIN&&&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|TX|22637-3^Path report.final diagnosis^LN||SKIN ELLIPSE AND UNDERLYING BREAST AND ADIPOSE
TISSUE (LEFT), LUMPECTOMY: INVASIVE DUCTAL CARCINOMA - ADDENDUM AND CONSULTATION REPORTS WITH
RECEPTORSTATUS TO FOLLOW||||||F<CR>
OBX|2|TX|22636-5^Path report.relevant Hx^LN||47-year old white female with (L) UOQ breast
mass||||||F<CR>
OBX|3|TX|22633-2^Path report.site of origin^LN|1|Left breast lesion - short stitch
superior.||||||F<CR>
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OBX|4|TX|22633-2^Path report.site of origin^LN|2|Long stitch lateral.||||||F<CR>
OBR|3||97 810430|60568-3^Synoptic report
^LN|||200707251630|||123456^MYELOMUS^JOHN|||||TISS^Tissue^HL70070|594110NY^CARING^CAREN^^M.D.^^^^
NY_PHYSICIANLICENSE^^^^MD|||||||||F|60567-5&Comprehensive pathology report panel&LN|||^97
810430|||109771&GLANCE&JUSTIN&&&&&&NY_PHYSICIANLICENSE<CR>
OBX|1|ST|60573-3^Report template source^LN||New York State Synoptic Report Format||||||F
OBX|2|ST|60572-5^Report template ID^LN||Protocol for the Examination of Specimens from Patients
with Invasive Ductal Carcinoma of the Breast||||||F<CR>
OBX|3|ST|60574-1^Report template version ID^LN||NYS-InvasiveCarcinomaRelease2.1||||||F<CR>
OBX|4|TX|^SPECIMEN SITE DESCRIBED ON CONTAINER:||left breast lesion||||||F<CR>
OBX|5|TX|^Header|1|SPECIMEN DESCRIPTION||||||F<CR>
OBX|6|TX|^Tissue/s:|1|consistent with breast lumpectomy, with attached skin ellipse||||||F<CR>
OBX|7|TX|^Handling Prior to Receipt in Lab: |1|specimen received intact||||||F<CR>
OBX|8|TX|^Clinical Orientation:||attached short suture, described on requisition as "superior"
and attached long suture, described as "lateral" - used for the orientation of the specimen
(below)||||||F<CR>
OBX|9|TX|^Header|2|Resection Margins:||||||F<CR>
OBX|10|TX|^Header|2.1|inked:||||||F<CR>
OBX|11|TX|^red|2.1|medial and lateral||||||F<CR>
OBX|12|TX|^blue|2.1|superior||||||F<CR>
OBX|13|TX|^green|2.1|inferior||||||F<CR>
OBX|14|TX|^black|2.1|deep||||||F<CR>
OBX|15|TX|^Other Handling in Lab:|2|sectioned and left for overnight fixation||||||F<CR>
OBX|16|TX|^Approximate Fixation Time:|2|> 48 hours/ < 7 days||||||F<CR>
OBX|17|TX|^Specimen Size:|2|breast 7.1 x 6.2 x 2.5 cm in greatest dimensions skin ellipse 3.3 x
0.6 cm|||||F<CR>
OBX|18|TX|^Diagnostic Imaging for Identification of Suspect Area/s:|2|not required||||||F<CR>
OBX|19|TX|^Breast Tumour:|2|present - see below||||||F<CR>
OBX|20|TX|^Size:|3|difficult to measure accurately; a 0.6 cm area of hemorrhage immediately
adjacent tumour, obscuring tumour margin approximately 2.0 x 1.2 cm in greatest
dimensions||||||F<CR>
OBX|21|TX|^Location:|3|11 o'clock - as per prior clinical history||||||F<CR>
OBX|22|TX|^Appearance:|3|spiculated, ill-defined, firm, grey-white||||||F<CR>
OBX|23|TX|^Evidence of Spread or Complications:|3|none||||||F<CR>
OBX|24|TX|^Resection Lines:|4|0.3 cm from the closest resection margin - the deep 0.8 cm from the
next closest resection margin – the junction of the superior and inferior (superficially) 1.2 cm
from all remaining resection margins, the next closest being the medial||||||F<CR>
OBX|25|TX|^Other Breast:|4|moderately fibrous centrally, and surrounding tumour||||||F<CR>
OBX|24|TX|^Nipple:|4|not applicable - not included with specimen||||||F<CR>
OBX|25|TX|^Skin:|4|normal||||||F<CR>
OBX|26|TX|^Lymph Nodes:|4|none seen||||||F<CR>
OBX|27|TX|^Axillary Tissue:|5|not applicable - none included with specimen||||||F<CR>
OBX|28|TX|^Other Abnormalities/ Comments:|5|none||||||F<CR>
OBX|29|TX|^MATERIAL SUBMITTED FOR HISTOLOGY:||entire tumour, and other representative
sections||||||F<CR>
OBX|30|TX|^Header|6|BLOCKS SUBMITTED TO HISTOLOGY:||||||F<CR>
OBX|31|TX|^A,B|6|complete cross-section of tumour, in its largest dimension - split in
two||||||F<CR>
OBX|32|TX|^C|6|tumour including closest (deep) resection margin||||||F<CR>
OBX|33|TX|^D-G|6|? tumour including deep margin||||||F<CR>
OBX|34|TX|^H|6|fibrous breast including inferior resection margin||||||F<CR>
OBX|35|TX|^I|7|breast including lateral resection margin||||||F<CR>
OBX|36|TX|^J|6|breast including medial resection margin||||||F<CR>
OBX|37|TX|^K|6|section immediately superficial, but perpendicular to that in A,B including
superior margin, and skin ellipse||||||F<CR>
OBX|38|TX|^Neoadjuvant Treatment:||unknown - not provided clinically||||||F<CR>
OBX|39|TX|^Specimen Type:||lumpectomy||||||F<CR>
OBX|40|TX|^Lymph Node Sampling:||sentinel lymph node biopsy||||||F<CR>
OBX|41|TX|^Header|7|Specimen Size:||||||F<CR>
OBX|42|TX|^Greatest Dimension (cm):|7|7.1||||||F<CR>
OBX|43|TX|^Comments:|7|as described grossly||||||F<CR>
OBX|44|TX|^Laterality:|8|left||||||F<CR>
OBX|45|TX|^Comments:|8|as described clinically||||||F<CR>
OBX|46|TX|^Header|9|Features of Malignancdy:||||||F<CR>
OBX|47|TX|^Tumour Site:|9.1|not specified clinically||||||F<CR>
OBX|48|TX|^Comments:|9.1|described as "11 o'clock" in the Clinical History for a previous core
biopsy (S*-*****) - likely the same site as the tumour in the specimen here|||||F<CR>
```

```
OBX|49|TX|^Invasive Carcinoma:|9|present||||||F<CR>
OBX|50|TX|^Histologic Type:|9.2|invasive ductal carcinoma||||||F<CR>
OBX|51|TX|^Comments:|9.2|with prominent lobular differentiation; for instance, the carcinoma
spreads as individual cells and small groups of cells at the edge of the main tumour
mass||||||F<CR>
OBX|52|TX|^Tumour Distribution:|9.3|single focus only||||||F<CR>
OBX|53|TX|^Comments:|9.3|seen in the area described grossly||||||F<CR>
OBX|54|TX|^Size of Invasive Component:|9.4|Greatest Dimension (cm):  1.1||||||F<CR>
OBX|55|TX|^Comments:|9.4|exact size difficult to be certain of, because of the effect of previous
biopsy, but appearing greater than 1.0 cm in largest dimension, from the microscopic
slides|||||F<CR>
OBX|56|TX|^Header|9.5|Histologic Grade:||||||F<CR>
OBX|57|TX|^Tubule Formation:|9.5|3/3||||||F<CR>
OBX|58|TX|^Nuclear Pleomorphism:|9.5|2/3||||||F<CR>
OBX|59|TX|^Mitotic Count (40x):|9.5|1/3||||||F<CR>
OBX|60|TX|^Modified Nottingham Grade:|9.5|Grade II/III - moderately differentiated||||||F<CR>
OBX|61|TX|^Skin Involvement:||absent||||||F<CR>
OBX|62|TX|^Chest Wall Involvement:||not applicable - none included with the specimen||||||F<CR>
OBX|63|TX|^Venous/Lymphatic Invasion:||absent||||||F<CR>
OBX|64|TX|^Block(s) for Receptor Studies:|9.6|being sent to: LHO||||||F<CR>
OBX|65|TX|^Blocks Submitted:|9.6|G||||||F<CR>
OBX|66|TX|^In Situ Carcinoma:|9.7|absent||||||F<CR>
OBX|67|TX|^Comments:|9.7|except in some very minute foci in and around the invasive
tumour|||||F<CR>
OBX|68|TX|^Header|10|Lymph Nodes:||||||F<CR>
OBX|69|TX|^Lymph Nodes Present:|10|yes||||||F<CR>
OBX|70|TX|^Number Examined:|10|1||||||F<CR>
OBX|71|TX|^Number Involved:|10|0||||||F<CR>
OBX|72|TX|^Header|11|AJCC Staging:||||||F<CR>
OBX|73|TX|^Additional pTNM Descriptors:|11|not applicable||||||F<CR>
OBX|74|TX|^Primary Tumour (pT):|11|pT1c - tumour more than 1.0 cm but not more than 2.0 cm in
greatest dimension||||||F<CR>
OBX|75|TX|^Distant Metastasis (pM):|11|pMx - cannot be assessed||||||F<CR>
OBX|76|TX|^Header|12|Resection Margin(s):||||||F<CR>
OBX|77|TX|^Involvement by Invasive Carcinoma:|12|absent||||||F<CR>
OBX|78|TX|^Closest Margin(s):|12|deep, in a number of slides - and particularly close in Slide
G||||||F<CR>
OBX|79|TX|^Distance to Closest Margin (mm):|12.1|1||||||F<CR>
OBX|80|TX|^Comments:|12.1|(0.1 cm)||||||F<CR>
OBX|81|TX|^Correlation with IOC:||not applicable||||||F<CR>
OBX|82|TX|^Additional Pathologic Findings:||reactive fibrosis around the carcinoma||||||F<CR>
OBX|83|TX|^Additional Pathologic Findings:||changes around the carcinoma consistent with the
effect of previous biopsy||||||F<CR>
OBX|84|TX|^Additional Pathologic Findings:||some immunohistochemistry will be ordered to confirm
some of the findings above - that will be reported in an Addendum Report to follow||||||F<CR>
OBX|85|TX|^Additional Pathologic Findings:||fibrocystic change in the background||||||F<CR>
OBX|86|TX|^Additional Pathologic Findings:||reactive changes in the lymph node||||||F<CR>
OBX|87|TX|22637-3^Pathology report final diagnosis^LN||SKIN ELLIPSE AND UNDERLYING BREAST AND
ADIPOSE TISSUE (LEFT), LUMPECTOMY:  INVASIVE DUCTAL CARCINOMA - ADDENDUM AND CONSULTATION REPORTS
WITH RECEPTORSTATUS TO FOLLOW||||||F<CR>
```

D.2.2. Simple Report, both Narrative and Synoptically Structured styles for the same content

Folowing is a simple message illustrating structure of comprehensive report panel including both a narrative report, and a synoptically structured report with the same content. Note the use of the comprehensive report panel as a 'container' for the two reports having the same content but different styles of reporting. The example report includes just the pathology section of a larger case report, and illustrates the transmission of just this pathology information to the registry.

PROCEDURE

6/15 Bilateral pelvic lymphadenectomy with radical retropubic prostatectomy

PATHOLOGY

Lymphadenectomy and prostatectomy:
Gross description: Specimen #1 "right pelvic obturator lymph nodes" consists of two portions of adipose tissue measuring 2.5 x 1 x 0.8 cm and 2.5 x 1 x 0.5 cm. There are two lymph nodes measuring 1 x 0.7 cm and 0.5 x 0.5 cm. The entire specimen is cut into several portions and totally embedded. Specimen #2 labeled "left pelvic obturation lymph nodes" consists of an adipose tissue measuring 4 x 2 x 1 cm. There are two lymph nodes measuring 1.3 x 0.8 cm and 1 x 0.6 cm. The entire specimen is cut into several portions and totally embedded. Specimen #3 labeled "prostate" consists of a prostate. It measure 5 x 4.5 x 4 cm. The external surface shows very small portion of seminal vesicles attached in both sides with tumor induration. External surface also shows tumor induration especially in right side. External surface is stained with green ink. The cut surface shows diffuse tumor induration especially in right side. The tumor appears to extend to excision margin.
Microscopic description: Section #1 reveals lymph node. There is no evidence of metastatic carcinoma. Section #2 reveals lymph node with tumor metastasis in section of large lymph node as well as section of small lymph node. Section #3 reveals adenocarcinoma of prostate, Gleason score 9 (5 + 4). The tumor shows extension to periprostatic tissue as well as margin involvement. Seminal vesicle attached to prostate tissue shows tumor invasion.

A. Adenocarcinoma of prostate, Gleason score 9, with both lobe involvement and seminal vesicle involvement (T3b)
B. There is lymph node metastasis (N1)
C. Distance metastasis cannot be assessed (MX)
D. Excision margin is positive and there is tumor extension to periprostatic tissue

FINAL DIAGNOSIS
Adenocarcinoma of prostate

This same report, synoptically structured, might appear as:

Date: 6/15/2009
Procedure: Bilateral pelvic lymphadenectomy with radical retropubic prostatectomy
Prostate size: 5 x 4.5 x 4 cm
Lymph Node Sampling: Pelvic lymph node dissection
Histologic Type: Adenocarcinoma
Histologic Grade: Gleason Pattern
Primary Pattern: 5
Secondary Pattern: 4
Tertiary Pattern: N/A
Total Gleason Score: 9
Extraprostatic Extension: Present, Nonfocal (established, extensive), periprostatic tissue, bilateral seminal vesicles
Seminal Vesicle Invasion: Present
Pathologic Staging (pTNM):
Primary Tumor (pT): pT3
Regional Lymph Nodes (pN): pN1
Number examined: 4
Number involved: 2
Margins: Excision margin is positive
Distant Metastasis (pM): cannot be assessed

The message containing both reports would be encoded as:

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200907281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||97810430|60567-5^Comprehensive pathology report
panel^LN|||200407261530||||||||TISS|164341^SURGEON^HANNAH^^^DR|||||||||F|||||||55555555&Welby&Mar
cus&&&Dr.&MD&&NPI<CR>
OBR|2||123456789|11529-5^Surgical Pathology
Study^LN|||200907261500||||||||TISS|164341^SURGEON^HANNAH^^^DR|||||||||F|60567-5&Comprehensive
pathology report panel&LN|||^97810430|||55555555&Welby&Marcus&&&Dr.&MD&&NPI<CR>
OBX|1|FT|22633-2^Path report.site of origin^LN||Lymphadenectomy and
prostatectomy||||||F|||200906151400<CR>
OBX|2|FT|22634-0^Pathology report gross observation^LN||Specimen #1 "right pelvic obturator lymph
nodes" consists of two portions of adipose tissue measuring 2.5 x 1 x 0.8 cm and 2.5 x 1 x 0.5
cm.  There are two lymph nodes measuring 1 x 0.7 cm and 0.5 x 0.5 cm.  The entire specimen is cut
into several portions and totally embedded.  Specimen #2 labeled "left pelvic obturation lymph
nodes" consists of an adipose tissue measuring 4 x 2 x 1 cm.  There are two lymph nodes measuring
1.3 x 0.8 cm and 1 x 0.6 cm.  The entire specimen is cut into several portions and totally
embedded.  Specimen #3 labeled "prostate" consists of a prostate.  It measure 5 x 4.5 x 4 cm.
The external surface shows very small portion of seminal vesicles attached in both sides with
tumor induration.  External surface also shows tumor induration especially in right side.
External surface is stained with green ink.  The cut surface shows diffuse tumor induration
especially in right side.  The tumor appears to extend to excision
margin.||||||F|||200906151400<CR>
OBX|3|FT|22635-7^Path report.microscopic observation^LN||Section #1 reveals lymph node.  There is
no evidence of metastatic carcinoma.  Section #2 reveals lymph node with tumor metastasis in
section of large lymph node as well as section of small lymph node.  Section #3 reveals
adenocarcinoma of prostate, Gleason score 9 (5 + 4).  The tumor shows extension to periprostatic
tissue as well as margin involvement.  Seminal vesicle attached to prostate tissue shows tumor
invasion.\.br\A. Adenocarcinoma of prostate, Gleason score 9, with both lobe involvement and
seminal vesicle involvement (T3b)\.br\B.  There is lymph node metastasis (N1)\.br\C.  Distance
metastasis cannot be assessed (MX)\.br\D.  Excision margin is positive and there is tumor
extension to periprostatic tissue||||||F|||200906151600<CR>
OBX|4|FT|22637-3^Path report.final diagnosis^LN||Adenocarcinoma of
prostate||||||F|||200906151600<CR>
OBR|3||123456789|60568-3^Synoptic report
^LN|||200506151630||||||||TISS|164341^SURGEON^HANNAH^^^DR|||||||||F|60567-5&Comprehensive
pathology report panel&LN|||^97810430|||55555555&Welby&Marcus&&&Dr.&MD&&NPI<CR>
OBX|1|ST|60573-3^Report template source^LN||Institution Cancer
Checklists||||||F|||200906151630<CR>
OBX|2|ST|60572-5^Report template ID^LN||PROSTATE GLAND||||||F|||200906151630<CR>
OBX|3|ST|60574-1^Report template version ID^LN||2.6||||||F|||200906151630<CR>
OBX|4|TX|^Procedure||Bilateral pelvic lymphadenectomy with radical retropubic
prostatectomy||||||F|||200906151630<CR>
OBX|5|TX|^Prostate size:||5 x 4.5 x 4 cm||||||F|||200906151630<CR>
OBX|6|TX|^Lymph Node Sampling:||Pelvic lymph node dissection||||||F|||200906151630<CR>
OBX|7|TX|^Histologic Type:||Adenocarcinoma||||||F|||200906151630<CR>
OBX|8|TX|^Histologic Grade:|1|Gleason Pattern||||||F|||200906151630<CR>
OBX|9|TX|^Primary Pattern:|1|5||||||F|||200906151630<CR>
OBX|10|TX|^Secondary Pattern:|1|4||||||F|||200906151630<CR>
OBX|11|TX|^Tertiary Pattern:|1|N/A||||||F|||200906151630<CR>
OBX|12|TX|^Total Gleason Score:|1|9||||||F|||200906151630<CR>
OBX|13|TX|^Extraprostatic Extension:||Present, Nonfocal (established, extensive), periprostatic
tissue, bilateral seminal vesicles||||||F|||200906151630<CR>
OBX|14|TX|^Seminal Vesicle Invasion:||Present||||||F|||200906151630<CR>
OBX|15|TX|^Header|2|Pathologic Staging (pTNM):||||||F|||200906151630<CR>
OBX|16|TX|^Primary Tumor (pT):|2|pT3||||||F|||200906151630<CR>
OBX|17|TX|^Regional Lymph Nodes (pN):|3|pN1||||||F|||200906151630<CR>
OBX|18|TX|^Number examined:|3|4||||||F|||200906151630<CR>
OBX|19|TX|^Number involved:|3|2||||||F|||200906151630<CR>
OBX|20|TX|^Margins:||Excision margin is positive||||||F|||200906151630<CR>
OBX|21|TX|^Distant Metastasis (pM):||cannot be assessed||||||F|||200906151630<CR>
```

D.2.3. Complex Report – Multiple Sites, Multiple Primaries

There are many complexities relative to incorporating multiple specimens and/or multiple primary cancers in a single cancer report, and there remain some outstanding issues. These are under discussion by the CAP Cancer Committee at the time of publication of this document. In the meantime, the following recommendations are explained for packaging such information into an HL7 message consistent with this Guide.

There are several guidelines that form a pattern for reporting complex cases with multiple primary cancers and/or multiple specimens in the report. These guidelines are:

- The entire case report is in a single HL7 message which is likely to contain multiple OBR segments
- The first OBR segment in the message identifies the comprehensive report panel, and collects all of the report types and styles that pertain to the case. Associated with this first OBR, there may be one or more OBX segments which contain information that is not specific to a particular specimen or a particular cancer, or a particular site, such as clinical history.
- Multiple OBX segments that represent parts of the same observation (same value in OBX-3 Observation ID) should have the same value in OBX-4 Observation sub-ID. This may occur when systems 'break up' a long text result field across multiple segments, or when a group of findings across several OBX segments should be logically kept together. The example below shows several observations that are indicated as having been reviewed and electronically signed by a certain physician. These all share the same OBX-4 Observation sub-ID. In addition, may reports follow a templated pattern where there may be headers for groups of related documented items, such as "Margins:". All the OBX segments documenting this particular group share the same OBX-4 Observation Sub-ID value.
- Information that is particular to a certain cancer may be placed in additional OBRs, each of which identifies the overall OBR as the 'Parent'. This should only be done if the reported information for the separate cancers is truly separate, eg totally different anatomic systems, such as a report containing both a lung cancer report and a brain cancer report. Otherwise, the final diagnosis and other findings should be reported in the overall summary OBR.
- When both a text report (transcription) and a synoptic report are included, each of them should have their own OBR with associated OBX segments containing the report. Each of these OBRs 'points to' the overall summary report using the OBR-26 Parent Result and OBR-29 Parent fields. The overall summary report (top level OBR) should not have values in these fields, unless the message is an addendum to an earlier report not contained in the current message.
- Each individually identified specimen in the case has its own SPM segment.
- The observations and findings specific to a certain specimen are reported in the OBX segments following the SPM for that specimen. All of the OBX segments associated with an SPM segment should have the same value in the OBX-4 Observation sub-ID field.

Below is a quite complex example of a case taken from a live system and de-identified for the purposes of using here as a published example. The lengthy HL7 message following the case report illustrates how the rules defined in this version of the Guide may be applied to properly encode such a case in an HL7 ORU_R01 message conformant to this Specification and Guide. Note that details of this example are still in active discussion at NAACCR.

This example case shows a multi-specimen multi-primary report. Note that this report also has identified separate specific sections. This case and report is of invasive urothelial carcinoma, and adenocarcinoma of the colon, combined in one report, with text and synoptic reports, plus separate sections. It includes observations particular to specimens, as well as information related to the overall case. The example also shows the report being transmitted with part of the report as Narrative style, and part as Synoptically-structured format in the same message.

Accession #: 0704500123

CLINICAL HISTORY
Bladder tumour, rectal cancer metastasis or post radiation therapy necrosis?

TISSUE SUBMITTED
A(fsi) (gums) Bladder tumour
B(fss) (gums) Symphysis pubis bone
C(gupr) Prostate and bladder
D(gums) Left pelvic lymph nodes
E(gums) Partial symphyectomy
F(gums) Left pubic ramus biopsy
G(gums) Right pelvic lymph node dissection
H(gurs) Rectum

GROSS PATHOLOGY
Gross Description
The specimen consists of numerous rubbery tan fragments measuring approximately 5 cm in aggregate. The fragments range in size from a few mm up to 1.5 cm. Several fragments are submitted in (A1FS&A2FS).
BFS: The specimen consists of multiple irregular fragments of soft tissue and bone, the largest measures approximately 2 cm in maximum dimension. Representative soft tissue is submitted in B1FS and B2FS.

Preliminary Diagnosis
Bladder tumour, biopsy: positive for malignancy.
Reviewed and electronically signed by: J. Pathdoc, MD- 2007/04/03 11:26

BFS: Biopsy of symphysis pubis bone and soft tissue: positive for malignancy.
Reviewed and electronically signed by: J. Pathdoc, MD- 2007/04/03 13:10

A: Please see description at time of Intraoperative Consultation.

B: Please see description at time of Intraoperative Consultation.

C: The specimen consists of a cystoprostatectomy which measures 10 cm in length and 10 cm in width. The bladder and prostate measure 7 cm in length and 3.2 x 2.2 x 1.2 cm, respectively. The anterior surface of the specimen which is non-peritonealized is inked in green and black on the right and left sides, respectively. The right and the left ureters are identified by sutures and measure 2.5 x 0.4 cm and 2.3 x 0.4 cm respectively. The anterior surface (non-peritonealized) is firm on palpation. Sectioning through the bladder reveals a very firm and thickened bladder wall which measures a maximum of 1.6 cm. The mucosa of the bladder is irregular and denuded on the anterior aspect which extends to the dome of the bladder. Further sectioning through the thickened wall reveals a pale tan firm lesion which appears to involve the bladder wall through its full thickness. Sectioning of the prostate and seminal vesicles is unremarkable.

Sections submitted are as follows: (C1) ureteric margins en face; (C2-3) (C4) (C5-6) full thickness section of bladder showing firm pale tan lesion; (C7) bladder neck; (C8, 9) anterior wall of bladder; (C10, 11) posterior wall of bladder; (C12) (C13-14) full thickness sectioning showing dome of bladder; (C15, 16) trigone of bladder; (C17) sections right ureter; (C18) sections left ureter; (C19-22) right seminal vesicle in toto; (C23) base of right seminal vesicle; (C24) apex of right lobe of prostate; (C25) base of right lobe of prostate; (C26-31) cross sections of prostate in toto from apex to base; (C32-33) left seminal vesicle in toto; (C34) base of left seminal vesicle; (C35) apex of left lobe of prostate; (C36) base of left lobe of prostate; (C37-43) left lobe of prostate in toto from apex to base.

D: The specimen consists of a fragment of adipose tissue which measures 6.5 x 3.5 x 0.5 cm. Palpation reveals possible nodes. Sections submitted are as follows: (D1) possible five node; (D2) possible five nodes; (D3) possible four nodes.

E: Gross description to follow decalcification. Supplemental report to follow.

F: The specimen consists of pale tan fragments of bony tissue which measures 2 x 1.1 x 0.5 cm. All tissue embedded in one cassette and submitted for decalcification (F1).

G: The specimen consists of multiple fragments of dark tan adipose tissue which vary in size from 1 x 0.5 x 0.3 cm to 5 x 2 x 2.5 cm. Palpation reveals possible nodes. Sections submitted are as follows: (G1) possible three nodes; (G2) possible four nodes; (G3) possible five nodes.

H: The specimen consists of a mesorectal excision which comprises of sigmoid colon, rectum, anal canal and anus. The specimen measures 30 cm in length and 6 cm along its maximum diameter. Externally, the serosa of the large bowel is dark tan, smooth and shiny for the most part except for an area which appears firm and subtly puckered and feels firm. It is located at a distance of 18 cm from the proximal resection margin and 10 cm from the distal resection margin. The anterior bare area of the mesorectum is inked in blue while the posterior bare area of mesorectum is inked in black. The mesorectum is intact and bulky. There are no defects, no coning of the specimen, and no abnormally firm areas. The specimen has been previously opened as per the MRE protocol. Internally, underneath the puckered area there is an exophytic, pale tan lesion which measures 2.6 x 2.5 x 2.3 cm. This lesion is located at a distance of 18 cm from the proximal resection margin and 10 cm from the distal resection margin. It is located at a distance of 2.5 cm from the radial resection margin. There is a small polyp measuring 1.1 cm along its maximum dimensions located at a distance of 8 cm from the proximal resection margin. There are no other lesions or masses identified elsewhere. The proximal, distal and radial resection margins have been inked in black prior to submitting sections. Sectioning of the exophytic mass reveals that grossly it does not appear to have invaded beyond the muscularis propria. There is a small polyp noted measuring 1.1 cm along its maximum dimensions and located at a distance of 8 cm from the proximal resection margin.

Sections submitted are as follows: (H1) proximal resection margin; (H2) distal resection margin; (H3) radial resection margin/circumferential resection margin; (H4-6) full thickness sectioning showing exophytic pale tan lesion; (H7-8) full thickness section showing exophytic pale tan lesion; (H9) uninvolved large bowel; (H10) possible four nodes; (H11) one node bisected into two; (H12) possible four nodes; (H13) possible four nodes; (H14) one node bisected into two; (H15) possible one node bisected into two; (H16) polyp in toto. 2007/04/11 08:14

MICROSCOPIC
A: Sections examined.

B: Sections examined.

C: Sections of the bladder show invasive urothelial carcinoma, high grade. It is extending through the muscularis propria into the perivesical. The anterior margin/anterior surface of the bladder is positive for malignancy. The ureteric margins are negative. There is no evidence of lymphatic, vascular or perineural invasion. There is a significant amount of fibroinflammatory reaction present on the peritoneal surface raising suspicion of focal penetration. However, no tumor is appreciated on the peritoneal surface in the tissue sections examined. Sections of prostate show focal areas of atrophic glands. There is no evidence of prostatic adenocarcinoma, PIN, ASAP, active and chronic inflammation. The urothelial carcinoma does not appear to involve the prostate, seminal vesicles or bowel.

D: Sections examined.

G: Sections examined.

H: COLON/RECTUM SYNOPTIC REPORT
Tissue(s) received: sigmoid colon. rectum, anal canal, anus
Specimen type: abdominoperineal resection
Histologic Type: adenocarcinoma
Histologic Grade: low grade (well to moderately differentiated)
Tumour Site: rectum
Depth of Invasion: invasion into muscularis propria (pT2)
Tumour Border Configuration: infiltrating
Lymphovascular (Small Vessel) Invasion: absent

Venous (Large Vessel) Invasion: absent
Perineural Invasion: absent
Host Response: Conspicuous lymphocytes at invasive edge (not in aggregates): absent
Lymphoid aggregates in surrounding tissues: absent
Intratumoural lymphocytic infiltrate: absent
Resection Margins: Proximal: uninvolved by invasive carcinoma
Distal: uninvolved by invasive carcinoma
Radial: uninvolved by invasive carcinoma
Distance of invasive carcinoma from closest margin: 2.5 from radial margin
Lymph Node Status: no malignancy in 11 regional lymph nodes (pN0)
Additional Pathological Findings: adenoma(s)
Pathological Stage: pT2N0Mx

DIAGNOSIS
A: Bladder tumor, biopsy: positive for invasive urothelial carcinoma.

B: Biopsy, symphysis pubis bone and soft tissue: positive for urothelial carcinoma.

C: Prostate and bladder, cystoprostatectomy:
- invasive urothelial carcinoma, high grade;
- extending through muscularis propria;
- anterior margin/anterior surface of the bladder positivefor tumour;
- ureteric margins negative;
- no evidence of lymphatic, vascular or perineural invasion;
- prostate unremarkable.

D: Left pelvic lymph node, excisional biopsy: 7 nodes negative for malignancy.

E: Partial symphyectomy: pending decalcification, supplemental report to follow.

F: Biopsy, left pubic ramus: pending decalcification, supplemental report to follow.

G: Right pelvic lymph nodes, excisional biopsy: 11 lymph nodes negative for malignancy.

H: Sigmoid colon, rectum, anus, abdominoperineal resection:
- adenocarcinoma of the colon (see synoptic report);
- arising in villous adenoma.

Case reviewed with…, M.D., Resident

CLASSIFICATION
Topography: C679 C187 Morphology: 81203 81403 Laterality:

Example Message

This example illustrates the HL7 Message encoding of the above example report. There are 3 OBR segments: one for the overall summary report, one for the text report, and one for the synoptic report. There are 8 SPM segments, one for each of the 8 individually identified and documented tissue specimens in the case. Local codes for OBX-3 values are 'made up' in this example, as the text report above does not identify such codes; these are required since the OBX-3 is a CE field, and must have a coded value to identify what is being reported in the OBX-5 Observation Value field.

In the example below, the string "<CR>" is used at the end of every segment to indicate the end of the segment, rather than a line-break for long text. This is not part of the legal HL7 message, but is a construct used here to make the message more readable. The example also illustrates a situation where the different specimen parts have all been accessioned differently, but there is a single surgical path number for the entire case (97810430).

```
MSH|^~\&|TESTLAB1|INDEPENDENT LAB
SERVICES^LABCLIANUM^CLIA|||200404281339||ORU^R01^ORU_R01|2004042813390045|P|2.5.1|||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^SS|000039^^^^LR|McMuffin^Candy^^^Ms.||19570706|F||2106-3|495 East Overshoot
Drive^^Delmar^NY^12054^^H||^^^^^518^5559999|||M|||4442331235<CR>
ORC|RE|||||||||||||||||||General Hospital^^123456^^^AHA|857 Facility
Lane^^Albany^NY^12205|^^^^^518^3334444|100 Provider St^^Albany^NY^12205<CR>
OBR|1||97810430|60567-5^Comprehensive pathology report
panel^LN|||200404261530||||||||TISS|1234567^Myeolmus^John^^MD|(518)424-
4243|||||||F|||||||99999&Glance&Justin&A&MD<CR>
OBR|2||S91-1700|11529-5^Surgical Pathology Study
Report^LN|||20040426|||||||TISS|1234567^Myeolmus^John^^MD|(518)424-4243|||||||F|60567-
5&Comprehensive pathology report panel&LN|||^97810430|||99999&Glance&Justin&A&MD<CR>
OBX|1|TX|^^^L117^CASE REVIEW^L|1|Case reviewed with…, M.D.,
Resident||||||F|||200704041500|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|2|CE|21855-2^Primary site Cancer^LN|2|C679^Bladder
Wall^ICDO3||||||F|||200704041500|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|3|CE|21855-2^Primary site Cancer^LN|3|C187^Sigmoid
Colon^ICDO3||||||F|||200704041500|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|4|CE|59848-2^Morphology.ICD-O-3^LN|2|81203^Transitional Cell Carcinoma,
NOS^ICDO3||||||F|||200704041500|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|5|CE|59848-2^Morphology.ICD-O-3^LN|3|81403^Adenocarcinoma
NOS^ICDO3||||||F|||200704041500|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|6|TX|22636-5^clinical history^LN|1|Bladder tumour, rectal cancer metastasis or post radiation
therapy necrosis?||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|7|TX|^^^L567^GROSS PATHOLOGY^L|2|The specimen consists of numerous rubbery tan fragments
measuring approximately 5 cm in aggregate. The fragments range in size from a few mm up to 1.5
cm. Several fragments are submitted in (A1FS&A2FS).||||||F|||200704031100|01D0301145^HITECK PATH
LAB^CLIA<CR>
OBX|8|TX|^^^L567^GROSS PATHOLOGY^L|3|BFS: The specimen consists of multiple irregular fragments
of soft tissue and bone, the largest measures approximately 2 cm in maximum dimension.
Representative soft tissue is submitted in B1FS and B2FS.||||||F|||200704031100|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|9|TX|44833-2^Diagnosis.preliminary^LN|2|Bladder tumour, biopsy: positive for
malignancy.||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA|P123456^PATHDOC^Jason<CR>
OBX|10|TX|^^^L34^ELECTRONIC SIGNATURE^L|2|Reviewed and electronically signed by: Jason Pathdoc,
MD- 2007/04/03 11:26||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|11|TX|44833-2^Diagnosis.preliminary^LN|3|BFS: Biopsy of symphysis pubis bone and soft tissue:
positive for malignancy.||||||F|||200407201500|01D0301145^HITECK PATH
LAB^CLIA|P123456^PATHDOC^Jason<CR>
OBX|12|TX|^^^L34^ELECTRONIC SIGNATURE^L|3|Reviewed and electronically signed by: Jason Pathdoc,
MD- 2007/04/03 13:10||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBR|3||S91-1743|^^^L25^TEXT PATHOLOGY
REPORT^L|||20040405|||||||||1234567^Myeolmus^John^^MD|(518)424-4243|||||||F|11529-5&Surgical
Pathology Study Report&LN|||^S91-1700|||99999&Glance&Justin&A&MD|||||||||||||||||11529-
5^Surgical Pathology Study Report^LN<CR>
SPM|1|^92756A&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|13|TX|^^^L47^SUBMITTED TISSUE^L|4|A(fsi) (gums) Bladder
tumour|||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|14|TX|^^^L567^GROSS PATHOLOGY^L|4|Please see description at time of Intraoperative
Consultation. ||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|15|TX|^^^L589^MICROSCOPIC^L|4|A: Sections examined.||||||F|||200704110841|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|16|TX|22637-3^Path report.final diagnosis^LN|4|A: Bladder tumor, biopsy: positive for
invasive urothelial carcinoma.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
SPM|2|^92756B&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|17|TX|^^^L47^SUBMITTED TISSUE^L|5|B(fss) (gums) Symphysis pubis
bone||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|18|TX|^^^L567^GROSS PATHOLOGY^L|5|Please see description at time of Intraoperative
Consultation. ||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|19|TX|^^^L589^MICROSCOPIC^L|5|B: Sections examined.||||||F|||200704110841|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|20|TX|22637-3^Path report.final diagnosis^LN|5|B: Biopsy, symphysis pubis bone and soft
tissue: positive for urothelial carcinoma.||||||F|||200704110841|01D0301145^HITECK PATH
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LAB^CLIA<CR>
SPM|3|^92756C&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|21|TX|^^^L47^SUBMITTED TISSUE^L|6|C(gupr) Prostate and
bladder||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|22|TX|^^^L567^GROSS PATHOLOGY^L|6|The specimen consists of a cystoprostatectomy which
measures 10 cm in length and 10 cm in width. The bladder and prostate measure 7 cm in length and
3.2 x 2.2 x 1.2 cm, respectively. The anterior surface of the specimen which is non-
peritonealized is inked in green and black on the right and left sides, respectively. The right
and the left ureters are identified by sutures and measure 2.5 x 0.4 cm and 2.3 x 0.4 cm
respectively. The anterior surface (non-peritonealized) is firm on palpation. Sectioning through
the bladder reveals a very firm and thickened bladder wall which measures a maximum of 1.6 cm.
The mucosa of the bladder is irregular and denuded on the anterior aspect which extends to the
dome of the bladder. Further sectioning through the thickened wall reveals a pale tan firm lesion
which appears to involve the bladder wall through its full thickness. Sectioning of the prostate
and seminal vesicles is unremarkable.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA
OBX|23|TX|^^^L567^GROSS PATHOLOGY^L|6|Sections submitted are as follows: (C1) ureteric margins en
face; (C2-3) (C4) (C5-6) full thickness section of bladder showing firm pale tan lesion; (C7)
bladder neck; (C8, 9) anterior wall of bladder; (C10, 11) posterior wall of bladder; (C12) (C13-
14) full thickness sectioning showing dome of bladder; (C15, 16) trigone of bladder; (C17)
sections right ureter; (C18) sections left ureter; (C19-22) right seminal vesicle in toto; (C23)
base of right seminal vesicle; (C24) apex of right lobe of prostate; (C25) base of right lobe of
prostate; (C26-31) cross sections of prostate in toto from apex to base; (C32-33) left seminal
vesicle in toto; (C34) base of left seminal vesicle; (C35) apex of left lobe of prostate; (C36)
base of left lobe of prostate; (C37-43) left lobe of prostate in toto from apex to
base.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|24|TX|^^^L589^MICROSCOPIC^L|6|C:  Sections of the bladder show invasive urothelial carcinoma,
high grade.  It is extending through the muscularis propria into the perivesical. The anterior
margin/anterior surface of the bladder is positive for malignancy. The ureteric margins are
negative. There is no evidence of lymphatic, vascular or perineural invasion. There is a
significant amount of fibroinflammatory reaction present on the peritoneal surface raising
suspicion of focal penetration. However, no tumor is appreciated on the peritoneal surface in the
tissue sections examined. Sections of prostate show focal areas of atrophic glands. There is no
evidence of prostatic adenocarcinoma, PIN, ASAP, active and chronic inflammation. The urothelial
carcinoma does not appear to involve the prostate, seminal vesicles or bowel.
||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|25|TX|22637-3^Path report.final diagnosis^LN|6|C: Prostate and bladder,
cystoprostatectomy:||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|26|TX|22637-3^Path report.final diagnosis^LN|6|- invasive urothelial carcinoma, high
grade;||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|27|TX|22637-3^Path report.final diagnosis^LN|6|- extending through muscularis
propria;||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|28|TX|22637-3^Path report.final diagnosis^LN|6|- anterior margin/anterior surface of the
bladder positivefor tumour;||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|29|TX|22637-3^Path report.final diagnosis^LN|6|- ureteric margins
negative;||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|30|TX|22637-3^Path report.final diagnosis^LN|6|- no evidence of lymphatic, vascular or
perineural invasion;||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|31|TX|22637-3^Path report.final diagnosis^LN|6|- prostate
unremarkable.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
SPM|4|^92756D&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|32|TX|^^^L47^SUBMITTED TISSUE^L|7|D(gums) Left pelvic lymph
nodes||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|33|TX|^^^L567^GROSS PATHOLOGY^L|7|The specimen consists of a fragment of adipose tissue which
measures 6.5 x 3.5 x 0.5 cm. Palpation reveals possible nodes. Sections submitted are as follows:
(D1) possible five node; (D2) possible five nodes; (D3) possible four
nodes.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|34|TX|^^^L589^MICROSCOPIC^L|7|D: Sections examined.||||||F|||200704110841|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|35|TX|22637-3^Path report.final diagnosis^LN|7|D: Left pelvic lymph node, excisional biopsy:
7 nodes negative for malignancy.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
SPM|5|^92756E&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|36|TX|^^^L47^SUBMITTED TISSUE^L|8|E(gums) Partial
symphyectomy||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|37|TX|^^^L567^GROSS PATHOLOGY^L|8|Gross description to follow decalcification. Supplemental
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report to follow.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|38|TX|22637-3^Path report.final diagnosis^LN|8|E:  Partial symphyectomy:  pending
decalcification, supplemental report to follow.||||||F|||200704110841|01D0301145^HITECK PATH
LAB^CLIA<CR>
SPM|6|^92756F&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|39|TX|^^^L47^SUBMITTED TISSUE^L|9|F(gums) Left pubic ramus
biopsy||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|40|TX|^^^L567^GROSS PATHOLOGY^L|9|The specimen consists of pale tan fragments of bony tissue
which measures 2 x 1.1 x 0.5 cm. All tissue embedded in one cassette and submitted for
decalcification (F1).||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|41|TX|22637-3^Path report.final diagnosis^LN|9|F: Biopsy, left pubic ramus: pending
decalcification, supplemental report to follow.||||||F|||200704110841|01D0301145^HITECK PATH
LAB^CLIA<CR>
SPM|7|^92756G&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|42|TX|^^^L47^SUBMITTED TISSUE^L|10|G(gums) Right pelvic lymph node
dissection||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|43|TX|^^^L567^GROSS PATHOLOGY^L|10|The specimen consists of multiple fragments of dark tan
adipose tissue which vary in size from 1 x 0.5 x 0.3 cm to 5 x 2 x 2.5 cm. Palpation reveals
possible nodes. Sections submitted are as follows: (G1) possible three nodes; (G2) possible four
nodes; (G3) possible five nodes.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|44|TX|^^^L589^MICROSCOPIC^L|10|G: Sections examined.||||||F|||200704110841|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|45|TX|22637-3^Path report.final diagnosis^LN|10|G: Right pelvic lymph nodes, excisional
biopsy: 11 lymph nodes negative for malignancy.||||||F|||200704110841|01D0301145^HITECK PATH
LAB^CLIA<CR>
SPM|8|^92756H&HITECKSPCID||TISS^Tissue^HL70487||||||||||||200704020930|200704021500||||||||||||0
704500123^^^01D0301145&HITECK PATH LAB<CR>
OBX|46|TX|^^^L47^SUBMITTED TISSUE^L|11|H(gurs) Rectum||||||F|||200704031100|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|47|TX|^^^L567^GROSS PATHOLOGY^L|11|The specimen consists of a mesorectal excision which
comprises of sigmoid colon, rectum, anal canal and anus. The specimen measures 30 cm in length
and 6 cm along its maximum diameter. Externally, the serosa of the large bowel is dark tan,
smooth and shiny for the most part except for an area which appears firm and subtly puckered and
feels firm. It is located at a distance of 18 cm from the proximal resection margin and 10 cm
from the distal resection margin. The anterior bare area of the mesorectum is inked in blue while
the posterior bare area of mesorectum is inked in black. The mesorectum is intact and bulky.
There are no defects, no coning of the specimen, and no abnormally firm areas. The specimen has
been previously opened as per the MRE protocol. Internally, underneath the puckered area there is
an exophytic, pale tan lesion which measures 2.6 x 2.5 x 2.3 cm. This lesion is located at a
distance of 18 cm from the proximal resection margin and 10 cm from the distal resection margin.
It is located at a distance of 2.5 cm from the radial resection margin. There is a small polyp
measuring 1.1 cm along its maximum dimensions located at a distance of 8 cm from the proximal
resection margin. There are no other lesions or masses identified elsewhere. The proximal, distal
and radial resection margins have been inked in black prior to submitting sections. Sectioning of
the exophytic mass reveals that grossly it does not appear to have invaded beyond the muscularis
propria. There is a small polyp noted measuring 1.1 cm along its maximum dimensions and located
at a distance of 8 cm from the proximal resection margin.||||||F|||200704110841|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|29|TX|^^^L567^GROSS PATHOLOGY^L|11|Sections submitted are as follows:  (H1) proximal
resection margin; (H2) distal resection margin; (H3) radial resection margin/circumferential
resection margin; (H4-6) full thickness sectioning showing exophytic pale tan lesion; (H7-8) full
thickness section showing exophytic pale tan lesion; (H9) uninvolved large bowel; (H10) possible
four nodes; (H11) one node bisected into two; (H12) possible four nodes; (H13) possible four
nodes; (H14) one node bisected into two; (H15) possible one node bisected into two; (H16) polyp
in toto.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|48|TX|22637-3^Path report.final diagnosis^LN|11|H:  Sigmoid colon, rectum, anus,
abdominoperineal resection:||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|49|TX|22637-3^Path report.final diagnosis^LN|11|- adenocarcinoma of the colon (see synoptic
report);||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|50|TX|22637-3^Path report.final diagnosis^LN|11|- arising in villous
adenoma.||||||F|||200704110841|01D0301145^HITECK PATH LAB^CLIA<CR>
OBR|4||S91-1743|^^^L5671^COLON/RECTUM SYNOPTIC PATHOLOGY
REPORT^L|||20070405|||||||||1234567^Myeolmus^John^^MD|(518)424-4243|||||||F||||^S91-
1700|||99999&Glance&Justin&A&MD||||||||||||||||||11529-5^Surgical Pathology Study Report^LN<CR>
OBX|51|TX|^^^L6223^Tissue(s) received^L|12|sigmoid colon. rectum, anal canal,
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anus||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|52|TX|^^^L6235^Specimen type^L|12|abdominoperineal
resection||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|53|TX|^^^L6257^Histologic Type^L|12|adenocarcinoma||||||F|||200704031100|01D0301145^HITECK
PATH LAB^CLIA<CR>
OBX|54|TX|^^^L6259^Histologic Grade^L|12|low grade (well to moderately
differentiated)||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|55|TX|^^^L6303^Tumour Site^L|12|rectum||||||F|||200704031100|01D0301145^HITECK PATH
LAB^CLIA<CR>
OBX|56|TX|^^^L6378^Depth of Invasion^L|12|invasion into muscularis propria
(pT2)||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|57|TX|^^^L6389^Tumour Border
Configuration^L|12|infiltrating||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|58|TX|^^^L6345^Lymphovascular (Small Vessel)
Invasion^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|59|TX|^^^L6356^Venous (Large Vessel)
Invasion^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|60|TX|^^^L6367^Perineural Invasion^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH
LAB^CLIA<CR>
OBX|61|TX|^^^L6369^Host Response:  Conspicuous lymphocytes at invasive edge (not in
aggregates)^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|62|TX|^^^L6371^Lymphoid aggregates in surrounding
tissues^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|63|TX|^^^L6373^Intratumoural lymphocytic
infiltrate^L|12|absent||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|64|TX|^^^L6375^Resection Margins: Proximal^L|12|uninvolved by invasive
carcinoma||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|65|TX|^^^L6376^Resection Margins: Distal^L|12|uninvolved by invasive
carcinoma||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|66|TX|^^^L6376^Resection Margins: Radial^L|12|uninvolved by invasive
carcinoma||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|67|TX|^^^L6379^Distance of invasive carcinoma from closest margin^L|12|2.5
mm||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|68|TX|^^^L6383^Lymph Node Status^L|12|no malignancy in 11 regional lymph nodes
(pN0)||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|69|TX|^^^L7355^Additional Pathological
Findings^L|12|adenoma(s)||||||F|||200704031100|01D0301145^HITECK PATH LAB^CLIA<CR>
OBX|70|TX|^^^L6476^Pathological Stage^L|12|pT2N0Mx||||||F|||200704031100|01D0301145^HITECK PATH
LAB^CLIA<CR>
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7.3 SYNOPTIC REPORT EXAMPLES USING THE CAP CHECKLISTS

D.3.1. Sample Report Using a CAP Cancer Checklist

The following example illustrates a prostate case, and is a portion of a report where the CAP Cancer Checklist[1] for the Prostate Protocol could sensibly be used. The information has been filled out for illustrative purposes.

Surgical Pathology Cancer Case Summary (Checklist)

PROSTATE GLAND: Radical Prostatectomy
Procedure
Radical prostatectomy
Prostate Size
Weight: 47.2g
Size: 4.5 x 4.0 x 4.0 cm
Lymph Node Sampling
No lymph nodes present

[1] College of American Pathologists electronic Cancer Checklists (CAP eCC). February 2011 release. Available with a license from CAP STS, 500 Lake Cook Road, Suite 355, Deerfield, IL 60015, capecc@cap.org.

Histologic Type
Adenocarcinoma (acinar, not otherwise specified)
Histologic Grade
Gleason Pattern
Primary Pattern
Grade 3
Secondary Pattern
Grade 4
Tertiary Pattern
Not applicable
Total Gleason Score: 7
Tumor Quantitation
Proportion (percentage) of prostate involved by tumor: 15%
Tumor size: Not applicable
Extraprostatic Extension
Not identified
Seminal Vesicle Invasion
Not identified
Margins
Margins uninvolved by invasive carcinoma
Treatment Effect on Carcinoma
Not identified
Lymph-Vascular Invasion
Not identified
Pathologic Staging
TNM Descriptors
Not applicable
Primary Tumor (pT)
pT2c: Bilateral disease
Regional Lymph Nodes (pN)
No nodes submitted or found
Distant Metastasis (pM)
Not applicable

Example Message for this Synoptic Checklist Report

Note that the demographic information in this example message is the same as for the above examples, and is included for completeness of the example message. A number of encoding strategies have been applied to achieve this message:

- Every piece of information in the checklist is carried in the message
- The items are populated in the message sequentially, and every OBX carries a Set-ID value in OBX-1 that is sequentially numbered, and corresponds to each line on the displayed checklist.
- Every question-answer pair is encoded in a single OBX segment
- Every captured data items is considered to be text, i.e. value type in OBX-2 is "TX", even if the value is a numeric measurement
- 'Headers' of sections of the display report (such as Histologic Grade in the above example) are carried in the message, and are encoded with "^Header" in OBX-3 and the text in OBX-5
- Multiple question-answer pairs that are grouped together under a particular heading (such as the four question-answer pairs in Pathologic Staging in the example above) should be linked together with the OBX-4 Sub-ID field to preserve their association. However, this is not an absolute requirement, as some systems may be unable to construct this linking.
- This message contains only the synoptic report.

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MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||123456789|60568-3^Synoptic report
^LN|||200407261530||||||||TISS|164341^SURGEON^HANNAH^^^DR|||||||||F|60567-5&Comprehensive
pathology report panel&LN|||^97810430|||55555555&Welby&Marcus&&&Dr.&MD&&NPI<CR>
OBX|1|ST|60573-3^Report template source^LN||CAP Cancer Checklists||||||F|||200407261530<CR>
OBX|2|ST|60572-5^Report template ID^LN||PROSTATE GLAND: Radical
Prostatectomy||||||F|||200407261530<CR>
OBX|3|ST|60574-1^Report template version ID^LN||Protocol for the Examination of Specimens from
Patients with Carcinoma of the Prostate Gland 3.1.0.0||||||F|||200407261530<CR>
OBX|4|TX|^Procdedure||Radical prostatectomy||||||F<CR>
OBX|5|TX|^Header|1|Prostate Size||||||F<CR>
OBX|6|TX|^Prostate weight|1|47.2g||||||F<CR>
OBX|7|TX|^Size|1|4.5 x 4.0 x 4.0 cm||||||F<CR>
OBX|8|TX|^Lymph Node Sampling||No lymph nodes present||||||F<CR>
OBX|9|TX|^Histologic type||Adenocarcinoma (acinar, not otherwise specified)
||||||F<CR>
OBX|10|TX|^Header|2|Histologic grade||||||F<CR>
OBX|11|TX|^Header|2.1|Gleason Pattern||||||F<CR>
OBX|12|TX|^Primary Pattern|2.1|3||||||F<CR>
OBX|13|TX|^Secondary Pattern|2.1|4||||||F<CR>
OBX|14|TX|^Tertiary Pattern|2.1|Not applicable||||||F<CR>
OBX|15|TX|^Total Gleason score|2.1|7||||||F<CR>
OBX|16|TX|^Header|3|Tumor Quantitation||||||F<CR>
OBX|17|TX|^Proportion (percent) of prostate involved by tumor|3|15%||||||F<CR>
OBX|18|TX|^Tumor size:|3|Not applicable||||||F<CR>
OBX|19|TX|^Extraprostatic extension||Not identified||||||F<CR>
OBX|20|TX|^Seminal vesicle invasion||Not identified||||||F<CR>
OBX|21|TX|^Margins||Margins uninvolved by invasive carcinoma||||||F<CR>
OBX|22|TX|^Lymph-Vascular invasion||Not identified||||||F<CR>
OBX|23|TX|^Header|4|Pathologic staging (pTNM)||||||F<CR>
OBX|24|TX|^TNM Descriptors|4|Not applicable||||||F<CR>
OBX|25|TX|^Primary Tumor (pT)|4|pT2c: Bilateral disease||||||F<CR>
OBX|26|TX|^Regional Lymph Nodes (pN)|4|No nodes submitted or found||||||F<CR>
OBX|27|TX|^Distant Metastasis (pM)|4|Not applicable||||||F<CR>
```
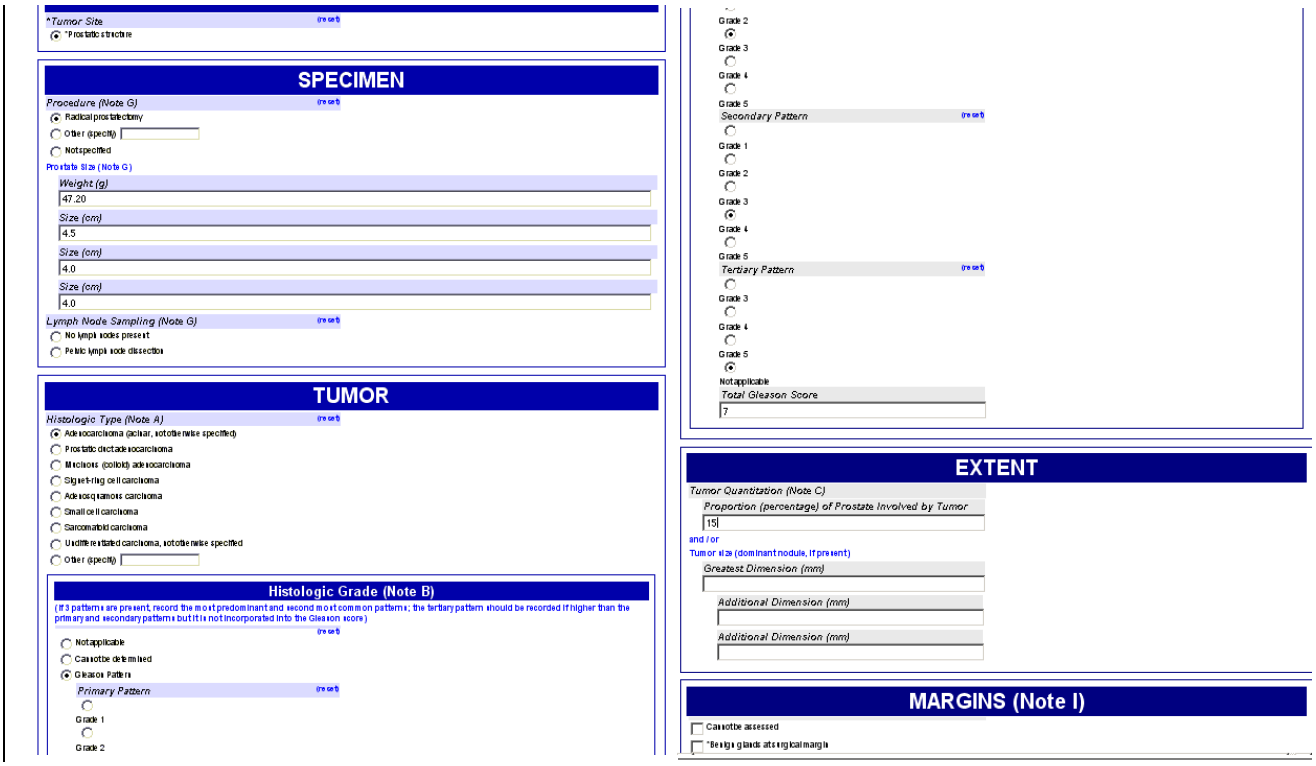
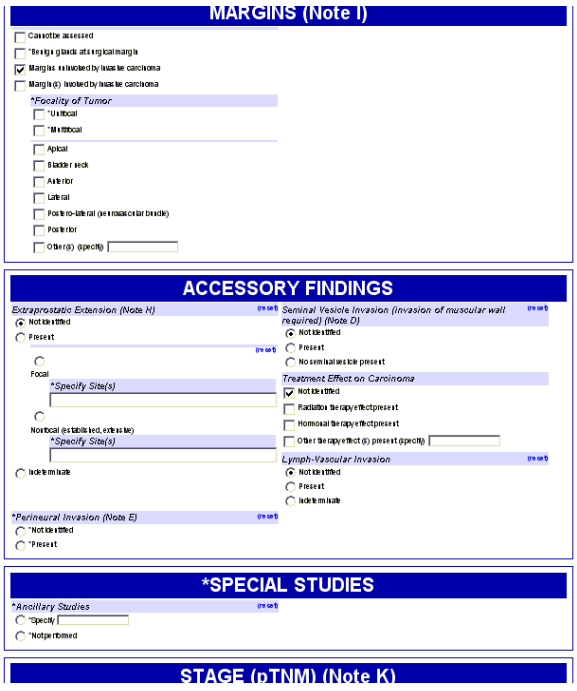

D.3.2. Sample Report Using a CAP eCC Synoptic Cancer Checklist

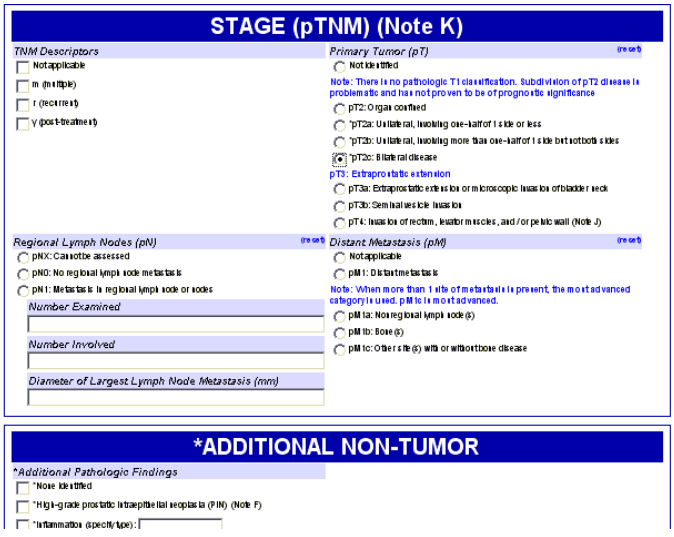
Following is a set of screen shots showing the same information reporting in the synoptic report in the previous section, but captured in the CAP electronic Cancer Checklists.[1]

[1] College of American Pathologists electronic Cancer Checklists (CAP eCC). February 2011 release. Available with a license from CAP STS, 500 Lake Cook Road, Suite 355, Deerfield, IL 60015, capecc@cap.org.

.







The underlying XML encoding for this captured data (the above is a screen rendering of the XML) is:

```
<sr-data version-ckey="" display-name="PROSTATE GLAND: Radical Prostatectomy">
    <question ckey="16797.100004300" display-name="Tumor Site">
        <answer ckey="16798.100004300" display-name="Prostatic structure" code="41216001"/>
```

```
    </question>
    <question ckey="18225.100004300" display-name="Procedure (Note G)">
        <answer ckey="18226.100004300" display-name="Radical prostatectomy" code=""/>
    </question>
    <question ckey="18230.100004300" display-name="Weight (g)">
        <answer ckey="18230.100004300" display-name="47.20" code=""/>
    </question>
    <question ckey="18231.100004300" display-name="Size (cm)">
        <answer ckey="18231.100004300" display-name="4.5" code=""/>
    </question>
    <question ckey="18233.100004300" display-name="Size (cm)">
        <answer ckey="18233.100004300" display-name="4.0" code=""/>
    </question>
    <question ckey="18232.100004300" display-name="Size (cm)">
        <answer ckey="18232.100004300" display-name="4.0" code=""/>
    </question>
    <question ckey="16800.100004300" display-name="Histologic Type (Note A)">
        <answer ckey="16802.100004300" display-name="Adenocarcinoma (acinar, not otherwise specified)" code="35917007"/>
    </question>
    <question ckey="16812.100004300" display-name="">
        <answer ckey="2804.100004300" display-name="Gleason Pattern" code=""/>
    </question>
    <question ckey="16816.100004300" display-name="Primary Pattern">
        <answer ckey="16819.100004300" display-name="Grade 3" code=""/>
    </question>
    <question ckey="16822.100004300" display-name="Secondary Pattern">
        <answer ckey="16826.100004300" display-name="Grade 4" code=""/>
    </question>
    <question ckey="16828.100004300" display-name="Tertiary Pattern">
        <answer ckey="16831.100004300" display-name="Not applicable" code=""/>
    </question>
    <question ckey="16832.100004300" display-name="Total Gleason Score">
        <answer ckey="16832.100004300" display-name="7" code=""/>
    </question>
    <question ckey="18858.100004300" display-name="Proportion (percentage) of Prostate Involved by Tumor">
        <answer ckey="18858.100004300" display-name="15" code=""/>
    </question>
    <question ckey="16877.100004300" display-name="">
        <answer ckey="16880.100004300" display-name="Margins uninvolved by invasive carcinoma" code=""/>
    </question>
    <question ckey="16839.100004300" display-name="Extraprostatic Extension (Note H)">
        <answer ckey="16840.100004300" display-name="Not identified" code=""/>
    </question>
    <question ckey="16848.100004300" display-name="Seminal Vesicle Invasion (invasion of muscular wall required) (Note D)">
        <answer ckey="16849.100004300" display-name="Not identified" code=""/>
    </question>
    <question ckey="18242.100004300" display-name="Treatment Effect on Carcinoma">
        <answer ckey="18235.100004300" display-name="Not identified" code=""/>
    </question>
    <question ckey="16899.100004300" display-name="Lymph-Vascular Invasion">
        <answer ckey="16900.100004300" display-name="Not Identified" code=""/>
    </question>
    <question ckey="16853.100004300" display-name="Primary Tumor (pT)">
        <answer ckey="16859.100004300" display-name="*pT2c: Bilateral disease" code=""/>
    </question>
</sr-data>
```

Note that only the tags for which data was entered are included above.

Example Message for a CAP eCC[1]

An HL7 message that includes the information shown in the previous example is illustrated below. Note that there are a number of data items captured by pathology laboratory systems and reported to cancer registries using the HL7 messaging that are not specified in the CAP eCC. These include things such as patient demographics, the pathologist who wrote the report, the name of the laboratory, etc. The data for these that is in the example below is drawn from examples elsewhere in this Guide.

```
MSH|^~\&||INDEPENDENT LAB
SERVICES^33D1234567^CLIA|||200407281339||ORU^R01^ORU_R01|2004072813390045|P|2.5.1|||||||||VOL_V_3
0_ORU_R01^NAACCR_CP^2.16.840.1.113883.9.8^ISO<CR>
PID|1||123456789^^^^SS~00466144^^^^MR||McMuffin^Candy||19570706|F||2106-3^White^HL70005|495 East
Overshoot Drive^^Delmar^NY^12054^^H|||||M<CR>
ORC|RE|||||||||||||||||||||Albany Medical Center|43 New Scotland Ave.^^Albany^NY^12208||43 New
Scotland Ave.^^Albany^NY^12208<CR>
OBR|1||123456789|60568-3^Synoptic report
^LN|||200407261530|||||||||TISS|164341^SURGEON^HANNAH^^^DR|||||||||F|60567-5&Comprehensive
pathology report panel&LN|||^97810430|||55555555&Welby&Marcus&&&Dr.&MD&&NPI<CR>
OBX|1|ST|60573-3^Report template source^LN||CAP eCC||||||F|||200407261530<CR>
OBX|2|CE|60572-5^Report template ID^LN||128.100004300^PROSTATE GLAND: Radical
Prostatectomy^CAPECC||||||F|||200407261530<CR>
OBX|3|ST|60574-1^Report template version ID^LN||2.000.012.1000043||||||F|||200407261530<CR>
OBX|4|CWE|16797.100004300^Tumor Site^CAPECC||16798.100004300^Prostatic
structure^CAPECC^41216001^Prostatic structure (body structure)^SCT||||||F|||200407261530<CR>
OBX|5|NM|18230.100004300^Weight (g)^CAPECC||47.20|g^grams^UCUM|||||F|||200407261530<CR>
OBX|6|NM|18231.100004300^Size (cm)^CAPECC||4.5|cm^Centimeter^UCUM|||||F|||200407261530<CR>
OBX|7|NM|18233.100004300^Size (cm)^CAPECC||4.0|cm^Centimeter^UCUM|||||F|||200407261530<CR>
OBX|8|NM|18232.100004300^Size (cm)^CAPECC||4.0|cm^Centimeter^UCUM|||||F|||200407261530<CR>
OBX|9|CWE|16800.100004300^Histologic Type (Note A)^CAPECC||16802.100004300^Adenocarcinoma
(acinar, not otherwise specified)^CAPECC^35917007^Adenocarcinoma, no subtype (morphologic
abnormality)^SCT||||||F|||200407261530<CR>
OBX|10|CWE|16812.100004300^^CAPECC||2804.100004300^Gleason Pattern^CAPECC||||||F|||200407261530
OBX|11|CWE|16816.100004300^Primary Pattern^CAPECC||16819.100004300^Grade
3^CAPECC||||||F|||200407261530<CR>
OBX|12|CWE|16822.100004300^Secondary Pattern^CAPECC||16826.100004300^Grade
4^CAPECC||||||F|||200407261530<CR>
OBX|13|CWE|16828.100004300^Tertiary Pattern^CAPECC||16831.100004300^Grade
5^CAPECC||||||F|||200407261530<CR>
OBX|14|CWE|16832.100004300^Total Gleason
Score^CAPECC||16832.100004300^7^CAPECC||||||F|||200407261530<CR>
OBX|15|NM|18858.100004300^Proportion (percentage) of Prostate Involved by
Tumor^CAPECC||15|%^percent^UCUM|||||F|||200407261530<CR>
OBX|16|CWE|16877.100004300^^CAPECC||16880.100004300^Margins uninvolved by invasive
carcinoma^CAPECC||||||F|||200407261530<CR>
OBX|17|CWE|16839.100004300^Extraprostatic Extension (Note H)^CAPECC||16840.100004300^Not
identified^CAPECC||||||F|||200407261530<CR>
OBX|18|CWE|16848.100004300^Seminal Vesicle Invasion (invasion of muscular wall required) (Note
D)^CAPECC||16849.100004300^Not identified^CAPECC||||||F|||200407261530<CR>
OBX|19|CWE|18242.100004300^Treatment Effect on Carcinoma^CAPECC||18235.100004300^Not
identified^CAPECC||||||F|||200407261530<CR>
OBX|20|CWE|16899.100004300^Lymph-Vascular Invasion^CAPECC||16900.100004300^Not
Identified^CAPECC||||||F|||200407261530<CR>
OBX|21|CWE|16853.100004300^Primary Tumor (pT)^CAPECC||16859.100004300^*pT2c: Bilateral
disease^CAPECC||||||F|||200407261530<CR>
```

[1] College of American Pathologists electronic Cancer Checklists (CAP eCC). February 2011 release. Available with a license from CAP STS, 500 Lake Cook Road, Suite 355, Deerfield, IL 60015, capecc@cap.org.

7.4 MESSAGING EXAMPLES GENERAL QUESTIONS AND ANSWERS

The questions and answers in this section make up a "Frequently Asked Questions" (FAQ) about implementing HL7 messages using the information in this Guide. For detailed information about the implemention of synoptic reporting using the coded CAP Cancer Checklists, see Chapter 3.

1 – Question: How should the version field in CE and CWE datatypes be populated?

Answer: Every code system has a release version. Some code systems, such as SNOMED-CT, have a date for this, represented as a month and year, such as "January 2008". Other code systems, such as LOINC, may alternatively have a numeric version identifier, such as "2.24". Whatever the coding system publisher declares as the version identifier is the string to be used in the code system version component of the coded datatypes. Note however that the curation process for CKeys is such that no version needs to be populated; CAP has declared that CKeys will never be deleted, and will never change their meaning. When CKeys are transmitted in a CE or CWE field, the code system version is not populated.

2 – Question: Is a separate OBR used to identify different sections in the report?

Answer: No. Separate OBRs are used to identify different reports, not sections. When completely different reports, such as both a text report and a synoptic report, are included in the same message, then there is an OBR for each of the Reports. Use the OBR-Set ID (OBR-1) as a unique and sequential identifier for these multiple OBRs if they are present. For different report sections, the OBX will be used, with the OBX-3 identifying the section header using LOINC or local codes. These sections are typically items such as 'Clinical History', 'Gross Observation', 'Microscopic', etc. Refer to Section 1.4.4 for more detail.

3 - Question: How will local/state/provincial/territorial-specific data items be handled?

Answer: The sending anatomical pathology laboratory and the receiving cancer registry need to agree upon the data item, associated codes, data type, and code system identifiers. Wherever possible, LOINC and/or SNOMED CT codes should be used for the question and answer components: OBX-3 and OBX-5. Note that local jurisdictions may acquire their own namespace identifier from CAP for the definition of jurisdiction-specific CKeys; as the namespace ID is part of the CKey value, this provides unique codes.

4 – Question: What coding system should be used for Units of Measure in OBX-6?

Answer: In the US, Units of Measure in laboratories may be communicated using the coding systems 'ISO+', 'ANSI+', or 'UCUM'. In the US, UCUM is preferred. In Canada, the coding system SI (Systeme Internationale) is usually required; this is a constraint on UCUM, so the OBX-6.3 should be "UCUM" when the OBX-6.1 carries an SI unit. For more detail see the discussion of OBX-6.

5 – Question: Which location should be used for the Surgical Pathology Number, i.e. (PID-3, PV1-19, or an observation in OBX)?

Answer: In most laboratories, the Surgical Path Number is the same as the Accession Number, and uniquely identifies the case. In these cases, it is populated in OBR-3 Filler Order Number. In some rare cases, this number is received from the Surgical Center, and is the same as the Pathology Requisition number, and is different than the Accession number, or the number identifying the case in the laboratory system. In this circumstance, it is populated in OBR-2 Placer Order Number.

6 – How do I format a message when Reporting for Complex Cases?

Answer: Complex cases involving multiple sites, multiple primaries, multiple reports, and multiple styles involves a number of recommendations in order to transmit information so it can be understood by the Registry. See the recommendations and example in section D.2.3 above.

7 – Question: How should the specimen information be uniquely identified in the case of multiple primaries (for example when a patient is diagnosed with more than one cancer in the same primary site (e.g. 2 breast cancers)?

Answer: The information is generally mixed in the text report, such that the entire report refers to the multiple cancers. There should only be a single OBR for the entire report. The information specific to the different specimens is contained in the different OBX segments following the SPM segments, where there is one SPM for each of the separate specimens comprising the report.

8 – Question: Pathology data on a single specimen, reported in a single ORC segment, may contain multiple primaries. Some information on each of the multiple primaries is contained in the OBR segment. Some of the fields in the OBR segment are of particular interest to cancer registration e.g. OBR-7 (Path-Date Spec Collection), OBR-16 (Path Ordering Client/Phys), OBR-17 (Path Ordering Client/Phys Phone), and OBR-21 (Path Lab phone number). Is this information always identical across the multiple primaries since it is the same specimen, so there is no need for any repeating OBR?
Answer: Yes, the information in those fields should be identical and contained in the OBR segments in the message. This information should be in the first OBR specifying the Comprehensive Report Panel.

9 – Question: In cases with multiple specimens, some of the specimen-specific information (ie OBR-14 Specimen Received Date/Time and OBR-15 Specimen Source) is in the OBR. If there is only one OBR for the message, how can this handle multiple specimens?
Answer: You must use the SPM segment, and the message construction that includes the specimen-specific information in the group of segments staring with the SPM and optionally including one or more OBX segments following it when constructing an HL7 ORU_R01 message for a Cancer Pathology Report containing multiple individually identified specimens.

10 – Question: In those situations with a single cancer pathology report that contains multiple cancers, should each cancer be linked to the respective specimens or parts, and if so, how?
Answer: In the cancer registry domain, there is no use-case need to be able to link a specimen part, block, or slide with the corresponding diagnoses. In the cancer registry community, operative reports are used in conjunction with pathology reports to reach the final coding decision. Note that this Guide specifies a segment SPM Specimen which would allow the differentiation of different specimen parts.

11 – Question: How should Amended reports be handled with messaging?
Answer: Currently, amendments to reports are not messaged as separate items. Amendments and addenda to reports are merged or appended to the original report, and then the entire report should be re-transmitted, with a report status code in OBR-25 of "C" for 'Correction to results'. Note that addenda may be sent separately in their own OBR, with a status of "F" for 'Final' as part of the Comprehensive Report Collection. Since the entire collection is being updated or added to, the OBR-25 for the Collection should carry the status "C" for 'Correction to results'.

12 – Question: Some synoptic checklists may contain headers which help to organize the paper document (e.g., "Margins:", "Histology:") but have no entered data as 'answers'. Should these be sent in the HL7 message?

Answer: For non-coded reports, yes. Since there are no codes to uniquely identify items, it is recommended that such header formatting be transmitted using an OBX which contains "^Header" in the OBX-3 field. For example:

```
OBX|16|TX|^Header|3|Tumor Quantitation||||||F
OBX|17|TX|^Proportion (percent) of prostate involved by tumor|3|15%||||||F
OBX|18|TX|^Tumor size:|3|Not applicable||||||F
```

The items that are 'nested' within that header should all share the same OBX-4 Observation Sub-ID value that is defined in the OBX containing the header, making it easier for registries to understand the grouping of the entered information.

7.5 QUESTIONS AND ANSWERS FOR CAPECC SYNOPTIC REPORTING

1 – Question: When transmitting information from CAP electronic Cancer Checklists (CAP eCC), should SNOMED CT codes be used to transmit the question code as well as the answer code?

Answer: In all cases, coded answers should be transmitted using the CKeys that are published with the CAP eCC materials. Many questions, and some answers, also include SNOMED-CT codes (concept identifiers) usually from CAP also with the published eCC materials. Where these are included, they should also be sent in the message. Other standard codes, such as ICDO and LOINC, may also be sent. For more information, see the description in rule A in section 3.4 in the main document. Which standard codes are actually sent are subject to the negotiations between sending laboratories and the Registry prior to operation of the interface.

2 – Question: What is the location for the checklist identifier and the version data of the CAP Checklists?

Answer: Synoptic reporting checklists include three pieces of information identifying the checklist: the source or publisher of the checklist, the name or ID of the checklist and the version of the checklist. Specific LOINC codes identify each of these:

- **60573-3 - Report template source**
- **60572-5 - Report template ID**
- **60574-1 - Report template version ID**

These LOINC codes (in OBR-3)_and the values (in OBX-5) are the first three OBX segments in a synoptic report (immediately following the OBR segment identifying the report as 'synoptic'). For the CAP eCC synoptic reporting checklists, the Report template source is "CAP eCC". For the CAP eCC synoptic reporting checklists, the Report template ID is coded, and is the CKey of the identifier of the report, as contained in the XML files. The display name is the short name of the title of the checklist. The Report template version ID is the version string for the template as contained in the XML files.

As an illustration, here is the information for the Radical Prostatectomy checklist:

XML:

```
<template xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" template-id="128.100004300" template-xml-version="2.000.012.1000043" checklist-id="57.100004300" schema-version="" xmlns="http://www.cap.org/pert/2009/01/">
        <required xmlns="">true</required>
        <template-header xmlns="">
                <title>PROSTATE GLAND: Radical Prostatectomy</title>
```

OBX segments:

```
OBX|1|ST|60573-3^Report template source^LN||CAP eCC||||||F
OBX|2|CE|60572-5^Report template ID^LN||128.100004300^PROSTATE GLAND: Radical
Prostatectomy^CAPECC||||||F
OBX|3|ST|60574-1^Report template version ID^LN||2.000.012.1000043||||||F
```

Note that the XML tag <template-id> is the identifier for the template being used to fill out the checklist, whereas the <checklist-id> is the published prose document from which the XML template is derived.

3 – Question: Should both discrete coded checklist data and the entire text pathology report or portions of the pathology report be incorporated into a single message?

Answer: Yes. Any associated narrative Pathology Report text may be contained within the message, when available. For the transmission of text data, rely upon the NAACCR E-Path transmission standards as noted in NAACCR Volume V. See Question 4. The coded synoptic report should be carried in OBX segments that are associated with their own OBR segment, and the narrative report text should have a separate OBR segment.

4 – Question: If multiple checklists are completed and sent, how should each OBR be uniquely identified, in addition to the CAP Checklist identifier in the first OBX segment for each OBR?

Answer: We are awaiting decisions from the CAP specifying the circumstances under which separate checklists should be used. If there are separate checklists, each should have their own OBR segment, even if it is two separate instances of the same checklist. Each OBR will be accompanied by an OBX segment which contains the checklist identifier, followed by the OBX segments with the synoptic data. Use the OBR-1 Set ID as a unique and sequential identifier. The OBR-3 will contain the Accession number (case number, surgical path number, etc.) and will be the same for each of the checklists; together with the OBR-1 Set ID each OBR can be uniquely identified.

5 – Question: If there are multiple checklists in a message for a single surgical procedure (and thus multiple OBR segments), should the information in these fields be repeated in each of the OBR segments or only in the first OBR segment?

Answer: Yes, the information in those fields should be identical and repeated in each of the OBR segments. Some of the fields in the OBR segment are of particular interest to cancer registration e.g. OBR-7 (Path-Date Spec Collection), OBR-16 (Path Ordering Client/Phys), OBR-17 (Path Ordering Client/Phys Phone), and OBR-21 (Path Lab phone number).

6 – Question: In those situations with a single cancer pathology report that contains multiple cancers, should each cancer be linked to the respective specimens or parts, and if so, how?

Answer: A single checklist is usually used to cover all specimens from a single surgical procedure. In some circumstances, there may be multiple checklists. These are not explicitly linked to the specimens, as the observations explicitly related to the specimens are (eg macroscopic observations during specimen processing), even though the message may contain SPM segments for the separate speciments. Each CAP checklist has its own OBR and associated OBX segments, without using the SPM and observations related specifically to the SPM parts of the message definition for its data.

7 – Question: Some CAP checklists may contain coded headers which help to organize the paper document (e.g., macroscopic, microscopic). Will there be any ambiguity in the data if the headers are excluded from the HL7 message?

Answer: There would be no ambiguity if the headers are excluded since in the CAP eCC all the questions and answers are unique, even when their wording appears the same elsewhere on the same checklist or on other checklsts. The header in the checklist only serves to group the values and there would be no ambiguity if the

header is excluded. Note that the SNOMED codes are different for the similar data items under different header sections. LOINC Panels and Document sections support reporting the headers, but it is felt that this level of complexity is unnecessary.

8– Question: How should each OBR be uniquely identified in the case of multiple primaries? When a patient is diagnosed with more than one cancer in the same primary site (e.g. 2 breast cancers), so that the same cancer checklist is completed twice?

Answer: The single HL7 message should contain two OBR segments, each specific to the checklist completed. In the case of two identifical primaries, the OBR will generally contain the same information. Each OBR will be followed by an OBX segment, which contains the identical checklist identifiers. Use the OBR-Set ID (OBR-1) as a unique and sequential identifier. There will be one of these for each checklist instance. The existence of additional OBRs (each with a different sequential identifier in OBR-2) will indicate more than one checklist in the message or associated text pathology data. The type of report, as specified in OBR-4, can be used in this case, since two different OBR segments with different sequence numbers, but the same report type and style, will indicate this circumstance where two different cancers are documented for the same case in the same message.

9 – Question: Whenever a SNOMED-CT code is used in an HL7 message field, should both the SNOMED CT concept code and alphanumeric code ('legacy code') be sent in the message, or just one or the other?

Answer: No. The SNOMED CT concept code is sent in the one of the triplets of the CE or CWE, and the CKey is sent in the other. For those systems that use only the alphanumeric 'legacy codes' and are unable to support the use of SNOMED CT Concept Identifiers, the alphanumeric code may be sent instead of the Concept Identifer (along with the CKey). The code for the SNOMED-CT code system Concept Identifiers is SCT; this code system identifier may also be used when sending the alphanumeric codes, however a different code system identifier, "SCT2" may optionally be used to explicitly flag the code being transmitted as an alphanumeric legacy code. These mnemonics are used in the 3rd and 6th components of the coded fields. Note that these alphanumeric 'legacy codes' have been deprecated by CAP, and may not be supported in future eCC releases.

10 – Question: What are CKeys?

Answer: A CKey is a "composite key" (Ckey.) A CKey uses a decimal format with up to 9 digits permitted before the decimal point (the integer part), and 9 digits permitted after the decimal point (the decimal part). The integer part is a sequential number added by the the creators of the XML templates each time a new record is added to the checklist (and thus a new row to the database that contains the templates). The decimal part is a number (called a "namespace") assigned by SNOMED staff to identify each organization that is authorized to edit the CAP Electronic Cancer Checklists (CAP eCC) templates. SNOMED's internal namespace is "1000043".

7.6 REPORTING COMPLEX USE CASES

Cancer pathology reports range from the relatively simple with a single specimen and a single cancer (or tumor) to complex with multiple specimens from multiple topographic sites with multiple cancers (or tumors). There are four examples of pathology reports illustrating some of these different types of cancer pathology reports using the synoptically structured format. In these examples the content is transmitted from the anatomical pathology laboratory (in a hospital or free-standing) to a cancer registry. Each of these examples of cancer pathology reports has a corresponding flow diagram that supports the sending of the data as illustrated in these sample reports.

When pathologists are completing a cancer pathology report on an accessioned case with multiple cancers they may complete a synoptic report for each cancer or one synoptic report for one of the cancers with narrative text describing the second or third cancers. Guidance from the pathology leadership on this issue is in development and dissemination, although some has been clarified. In addition, the rules for multiple primary determination used within the cancer registry community are not identical to those used within the pathology community. This creates a challenge for the cancer registry community and requires flexibility.

In the companion document ePath Reporting Guidelines, there are four examples of these complex cases:

1. Single Body Site with a Single Primary in One Report (1a)
2. Multiple Body Sites with a Single Primary in One Report (1b)
3. Single Body Site with Multiple Primaries in One Report (2a)
4. Multiple Body Sites with Multiple Primaries in One Report (2b)

Please refer to that document for the details of these.

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