The Office of the National Coordinator for Health Information Technology

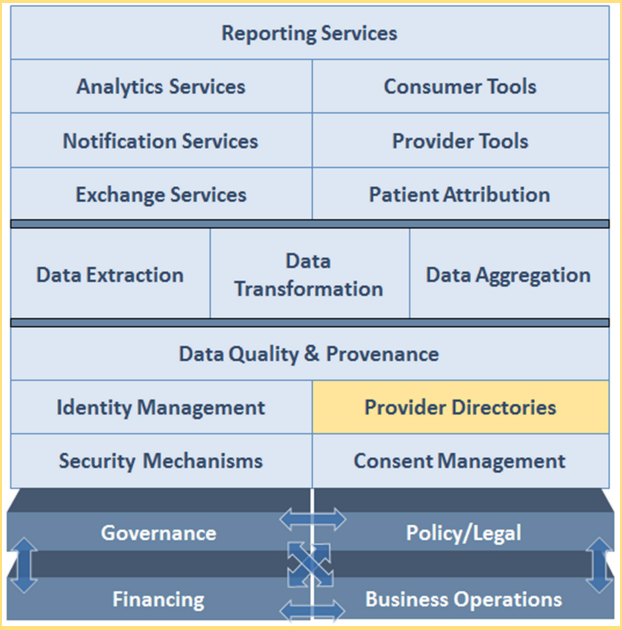
ONC-SIM Health IT Resource Center

State Health IT Modular Functions for Value-Based Payment

Strategic Implementation Guide

# Provider Directories

Version 1 - February 2016



This report was created by SME Terry Bequette, under a contract with the Office of the National Coordinator for Health Information Technology. The contents of this report do not necessarily reflect the opinions or policies of the Department of Health and Human Services or the Office of the National Coordinator for Health Information Technology.

# State Strategic Implementation Guide on Provider Directories

## Executive Summary

**Provider directories are critical tools for executing value-based payment** - This is because the information contained in them is essential for properly attributing patients to providers for measuring value. The steps involved in attribution can vary, but they all demand some directory (or table) of providers in order to link cost and quality information to a specific provider or group of providers.

Provider directories are one of several modular functions that are essential elements of a Health IT infrastructure to support value-based payment. These functions come together in different groupings to resolve different use cases. In most use cases the provider directories will be a necessary, but not sufficient, infrastructure component to support value based payment use cases.

**Provider directories facilitate quality measurement and care coordination –** Value-based payment models require provider directories as a means of attributing quality/value to providers. While the specific steps involved in this attribution process will vary depending on the model, each depends on accurately knowing which patients are associated with which providers or provider organizations. Quality measurement can be considered the overarching concept that encompasses other use cases, including analytics and identification of gaps in care.

Successful participation in value-based payment arrangements requires numerous supportive activities that depend on provider directories. This includes care coordination and referral management, which cannot be optimally performed without accurate and interoperable electronic provider directories.

**The problems with provider directories: low accuracy, high cost, lack of interoperability** - Provider directories have not achieved their optimal value due to issues concerning accuracy, high cost of maintenance, and lack of interoperability.

**Solutions potentially lie in new payment models, standards, architecture, policies, and governance** - The solutions to the problems of provider directories potentially lies in two places:

1. The collective need for better provider directories created by value-based payment models; and
2. The collective action required to jointly develop/use standards, agree on architecture, and implement the required policies and governance structures for provider directories.

## Preface – About these State Guides

The diagram on the cover of this guide depicts an abstraction of the modular functions that are needed to support value-based payment models. These modular functions (collectively called the "health IT stack") are generally common to most proposed State Innovation Model (SIM) transformation initiatives and are built on a foundation of appropriate governance, policy/legal supports, financing, and business operations. Modular functions, including health IT services, can be shared across a variety of applications, allowing for a "design once, use multiple times" strategy. Benefits of such an approach include cost savings, enhanced efficiency through standardization, and an opportunity for shared governance. In addition to participating state agencies, other healthcare stakeholders, including providers and payers, will need similar functionality. These considerations around shared services should be part of a state's health IT planning, particularly as it relates to SIM planning.

The ONC Resource Center, as a function of providing Technical Assistance to SIM States, has undertaken a series of Learning Events on topics inspired by these modular functions. Learning Events on specific topics have led to Affinity Groups of interested states participating in a series of collaboration calls to explore various subtopics of specific functions. One of the first Affinity Groups was focused on various aspects of provider directories. Informed by the discussions in those calls, this Provider Directory State Implementation Guide has collected and distilled available information into strategic and tactical guidance that can assist SIM states in their planning, procurement, and implementation of a provider directory strategy. Additional State Guides on other modular functions in the stack diagram are forthcoming as associated Affinity Group calls are completed.

## Purpose of this Provider Directory State Guide

This guide offers a high-level overview of provider directories and provides helpful information to support achievement of an operational and sustainable directory strategy that enables value-based payment. The guide is intentionally short, covering key topics at a high level. Links to other, more detailed, information are included in appendices, which cover previous work and recent federal activities in this area. The ONC SIM Resource Center has established a resource repository on HealthIT.gov [1] where many of these documents are available, while other resources are available on external websites.

## Definition of Provider Directories

Integrating the Healthcare Enterprise (IHE) describes a Health Provider Directory (HPD) by what it does: A health provider directory supports management of healthcare provider information, both individual and organizational, in a directory structure. It further describes typical provider information:

- **Information about the provider:** Demographics, physical addresses, credential and specialty information, as well as electronic endpoint to facilitate trusted communications with a provider.
- **Information about the provider's relationships**:
    - Affiliation with other organizations and providers.
    - Health Information Exchange (HIE) and members

[1] https://www.healthit.gov/providers-professionals/state-innovation-model-health-it-resource-center

- Integrated Delivery Networks and care delivery members.
- Hospitals and their practitioners.
- Hospital sub-organizations including departments, physician Practice Groups and their practitioners, practitioners and the hospitals they are associated with.

It is the latter category that can play a critical role in supporting attribution under value-based payment models. For example, a provider directory can serve as the source of truth for whether a provider is participating in a particular accountable care organization (ACO) and thus whether quality and cost data about that provider's care should be connected to that ACO.

There are additional definitions of provider directories which are detailed in the appendix but are compatible with each other. However, there are variations in the standards on which these other definitions are based.

## Provider Directory Use Cases for Value-Based Payment

Provider directories are critical tools for executing value-based payment. This is because provider directories are essential for successfully executing on two essential use cases for health IT in support of value-based payment: quality measurement and care coordination. There are numerous other use cases for provider directories, however, those are beyond the scope of this guide.

**Quality Measurement**

All value-based payment models require some form of quality measurement. According to CMS, "Quality measures are tools that help us measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems." Each of these concepts being measured is the result of provider actions, including individual or organizational actions. Thus, value-based payment models require provider directories as a means of attributing quality/value to providers. While the specific steps involved in this attribution process will vary depending on the model, each depends on accurately knowing which patients are associated with which providers or provider organizations.

Quality measurement can be considered the overarching concept that encompasses other use cases, including analytics and identification of gaps in care. This is because analytics can also be considered prospective quality measurement, and in many cases it is. Creating risk scores or identifying gaps in care are not much different. These can be thought of as different subcategories for the same concept, all requiring some form of directory of providers.

**Care coordination**

According to the Agency for Healthcare Research and Quality, "care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care." This is essential for providers operating under value-based payment models as they are seeking to achieve more effective care through improved quality and reduced costs.

Specific care coordination use cases supported by provider directories include executing transitions of care, sharing care plans, or enabling clinician notifications. Considering transitions of care, provider directories allow for the identification of providers and their contact information in order to provide necessary patient information to them. Note that in most use cases, provider directories play a supporting role and other components of the Health IT stack are also required. For example, provider directories might facilitate care coordination by acting as a "white pages" of electronic service information (ESI) or Direct addresses. The exchanges services that utilize

query or Direct transactions do not necessarily need a provider directory, but they are made more useful when one exists. There are many additional care coordination functions facilitated by the use of provider directories.

## The Challenges and Proposed Solutions

There are several key challenges that provider directories face that limit their ability to support the use cases described above.

**Challenges – Lack of Optimal Value Due to Low Accuracy, High Cost, and Lack of Interoperability**
Provider directories have not achieved their optimal value due to issues concerning accuracy, high cost of maintenance, and lack of interoperability. The Oregon Provider Directory Subject Matter Expert Workgroup identified the key challenges associated with provider directories. Their workgroup's summary stated that "provider directories are:

- Isolated from one another
- Limited in scope, data accuracy, and timely updates
- Costly to maintain the same information across multiple directories."

These points can be explained further. The Shared Nationwide Interoperability Roadmap acknowledges that "some directories exist today, which are focused only on health care providers and related information such as Direct addresses (so-called "Direct White Pages"). These directories are typically contained within a particular technology developer and are not electronically shared with other technology developers or systems."

Currently, health care institutions, state governments, and statewide entities (e.g., licensure boards) support multiple provider directories with redundant information. This is mainly because organizations with specific needs have created and maintained their own directories to meet their specific requirements. Costs are replicated, and the benefits remain isolated and restricted to specialized use cases.

Obtaining accurate information about providers for an initial instance of a provider directory is challenging. Information sources must be somehow vetted for accuracy and reliability, and data fields and formats must be reconciled across the multiple sources. The ongoing maintenance of the provider directory information, including the operational administrative and support procedures, requires significant resources as well in order to maintain a certain level of accuracy.

**Proposed Solutions – New Payment Models, Standards, Architecture, Policies, and Governance**
The low value of provider directories is a direct result of the lack of sufficient standards, architecture, policies and governance. However, merely describing these problems or even creating unambiguous guidance will not solve them. This is evidenced by the fact that standards and architectures have been proposed and developed for years now, but there are very few if any statewide Provider Directories that avoid these problems and achieve the true potential of provider directories.

The solution potentially lies in two places: the collective need for better provider directories created by value-based payment models; and the collective action required to jointly develop/use standards, agree on architecture, and implement the required policies and governance structures for provider directories.

The remainder of this guide describes the considerations related to these aspects of the solution.

## Vision for Provider Directories in Support of Value-Based Payment

The vision an ideal future state of provider directories would be one that overcomes the problems previously numerated, embraces the solution domains described above, and optimally services the use cases of quality measurement and care coordination.

The future may see the creation of statewide directories that serve as sources of truth for other directories. Sub-state directories could be consumers of information from a statewide provider directory for purposes of validating or supplementing their own data. This would happen if the statewide directory is perceived as having superior information as a result of access to a number of other data sources. With the right policies and standards, interoperable directories could execute algorithms to automatically update and synchronize data fields as new data were presented. The result would be overall improvement of value for all directories.

The Interoperability Roadmap lays out a vision for a future state of provider directories. Most critically, it states that "the future architecture of resource location will almost certainly be federated and solutions pursued by the health IT ecosystem need to be flexible to support this." It describes the need for a public, transparent process that answers questions related to architecture, standards, and security (i.e., policies/governance). This State Implementation Guide is intended to complement that vision.

## Standards

The use of standards is necessary to support queries to a provider directory, and can help with the provider directory interoperability problem. Queries must be structured in a way that can be interpreted by the receiving directory, and responses must likewise be structured in a way that can be reliably interpreted by the originator of the query. All parties require confidence that data within directories follows a standard for data definitions and field formats. Other standards are utilized for the fundamental processes of creating query and response messages and transporting them from point to point. Underlying the technical platforms and transport protocols there must be a trust framework for sharing information that adheres to standards.

The IHE HPD standard (*IHE IT Infrastructure Technical Framework Supplement, Healthcare Provider Directory (HPD), Trial Implementation*) is recommended in ONC's *2016 Interoperability Standards Advisory* (http://bit.ly/1PQ350b), as a best available standard. The HPD standard, however, was not adopted as a criterion in the *2015 Edition Health IT Certification Criteria* (http://bit.ly/1S6C4F2), which includes this response to comments received on Healthcare Provider Directory – Query Request (the same comment applies as a response to the Query Response proposed criteria):

> "We have not adopted this criterion as part of the 2015 Edition at this time. As noted in the draft ONC 2015 Interoperability Standards Advisory (draft ISA), the IHE HPD Profile is a provider directory standard and was listed as the best available standard in the draft ISA. However, we agree with commenters that the IHE HPD standard requires further implementation to ensure stability and support widespread adoption and the same is true for the federated concepts. We also agree with commenters that RESTful solutions are being defined and may be a viable alternative in the near future. We note that HHS remains committed to advancing policies related to provider directories as a means of furthering health information exchange and interoperability. We believe that continued work in this space can inform the development and implementation of provider directory standards for consideration in future rulemaking."

This Guide proposes that users contemplating the development or procurement of a provider directory should consider the HPD Profile as the best available standard to apply, while also allowing for an implementation path to accommodate future services based on Representational State Transfer (RESTful) solutions. There are other approaches that are evolving – e.g., Fast Healthcare Interoperability Resources (FHIR), DSTU 2, and flat file exchanges of provider directories associated with Direct implementations (see DirectTrust Directory Services data sharing pilot at https://www.directtrust.org/directtrust-directory-about/).

A slide deck released in advance of an Affinity Group discussion on standards and architecture explored the different standards in detail and included links to documents and use cases. (This deck was released shortly before the final rule on the *2015 Edition Health IT Certification Criteria* was released, and refers to the HPD Profile as the proposed criterion).

## Architecture

In our Affinity Group discussions, we previewed and discussed three architectures, beginning with a basic centralized Provider Directory Model[2] (see Figure 1). States should consider the different models and their benefits and drawbacks.

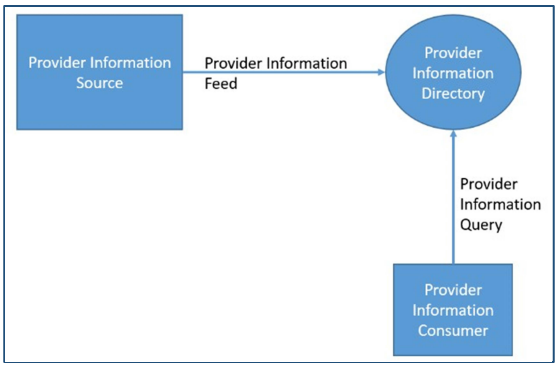



*Figure 1: Basic Centralized Provider Directory Model*

In this provider directory architecture, a variety of data sources and information consumers interface with the provider directory to:

- Send new and updated provider information, and
- Query provider information.

Provider information should come from the best sources possible, including authorized regional, state, and national sources, as stewards of the most accurate and current data. For example:

- National Plan and Provider Enumeration System (NPPES)
- State Licensing Bureaus
- National Associations
- Commercial Registries
- Delivery Networks
- Health Information Exchanges, etc.

A second architecture considered is a simple federated directory model (see Figure 2).

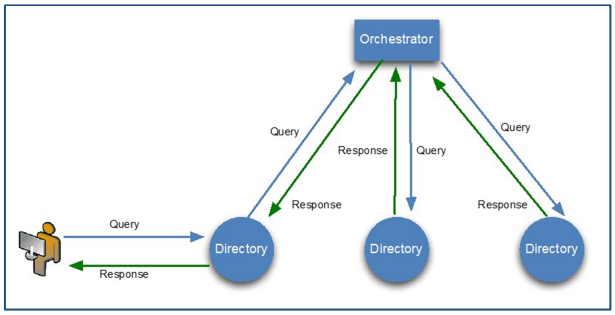



*Figure 2: Simple Federated Provider Directory Model*

In this model, a single provider information consumer queries a provider directory, which is subordinated to a higher-level node in a federated structure. The query is then relayed to the higher-level node, which provides the orchestrator function for this query. The orchestrator relays the query to other subordinated directories and sends an aggregated response to the initial directory queried by the consumer. Finally, the response is relayed to the consumer.

[2] In this discussion, terminology is taken from the IHE HPD standard documentation.

This federated model can be extended to a network of networks concept with numerous peers and multiple layers (see Figure 3).

In this more complex model additional orchestrators are engaged and the initial orchestrator aggregates multiple aggregated responses before responding to the initial directory query.

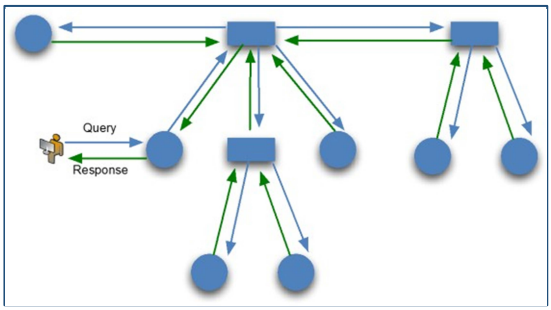



*Figure 3: Complex Federated Provider Directory Model*

## Policy and Governance Considerations

There are several policy areas that should be addressed when considering implementation of a provider directory. If implementing a federated architecture (simple or more complex) additional policy considerations are introduced. Two documents are particularly helpful as guidelines to policy considerations:

- Western States Consortium ONC State Health Policy Consortium Project Final Report, September 2013 (http://bit.ly/1GDZ110). This project implemented a network of provider directories and utilized the Direct protocol for query and response messages. To illustrate the complexity related to such a distributed network the report lists potential policy issues:
    - Purpose of use
    - Centralized Provider Directory v. Distributed Provider Directories
    - Query v. Push Model for Provider records
    - Authorization
    - Caching
    - Data Elements
    - Multiple v. Single Matching Result
    - Auditing
    - On-boarding HISPs for Directory Services into the WSC Trust Community
- Key Considerations Related to Policies for Interoperable, Federated Provider Directories, version 1.0, last revised March 6, 2014. This previously unreleased document presents some overarching considerations and delves deeper into specific areas, each of which is more complicated as a result of the federated architecture:
    - Electronic Service Information (ESI) Discovery
    - Quality of Data
    - Permitted Purposes
    - Scalability
    - Federated Relationships
    - Directory Intermediaries
    - Security (traceability and authentication)

States should consider policy levers related to provider directories to establish authority or pursue public policy objectives. The ONC Resource Center has developed a State Health IT Policy Lever Compendium that is a useful reference tool for states to consider (specifically policies related to purchasing, credentialing, provider licensure, and others). Notes released to those states participating in the Affinity Group calls also describe Oregon's HB 2294 (http://gov.oregonlive.com/bill/2015/HB2294/), which authorizes the Oregon Health Authority to expand the provider directory beyond Medicaid, and to implement fees as a funding mechanism for sustainability. Oregon

also has a related effort through its Common Credentialing Program (http://www.oregon.gov/oha/OHPR/occp/Pages/index.aspx).

On the topic of governance, the Western States Consortium final report offers a good description of the role of governance in the context of a distributed provider directory, including a description of the framework adopted for that project. In Oregon, governance is being developed through extensive stakeholder engagement and links to documentation related to that effort are provided in Appendix A. Undoubtedly there are other state examples of governance and policy actions related to provider directories, which will be incorporated into Appendix A as they are identified.

## Funding and Procurement Strategies for States

HITECH, Medicaid, and SIM funding sources may apply to provider directory planning and design, development, and implementation (DDI).

There are HITECH and Medicaid funding possibilities and implications identified in two State Medicaid Directors Letters:

- 11-004: Use of Administrative Funds to Support HIE.
- 10-016: Federal Funding for Medicaid HIT.

90/10 funding is available for HIE (and provider directories in support of expanding HIE) activities provided that:

- Funds are used for time-limited design, development and implementation activities.
- Under HITECH, the funding can only support eligible providers (Eligible Professionals and Eligible Hospitals).
- States leverage efficiencies with other federal HIE funding.
- HIE costs are divided equitably across other payers based on the "fair share" principle and are appropriately allocated.

While provider directory projects are potentially eligible for HITECH administrative federal financial participation (FFP), in some cases project activities may be more appropriately funded by Medicaid Management Information System (MMIS) or Eligibility & Enrollment (E&E) FFP, also at a 90 percent match for design and development costs. As long as the provider directory meets the Medicaid Information Technology Architecture (MITA) Seven Standards and Conditions, on-going maintenance and operations funding is available at a 75 percent match rate under MMIS and E&E funding guidelines, unlike HITECH. States can leverage these existing CMS funding authorities to build out provider directories, as well as other tools of master data management (master person indexes, identity proofing and management, etc.) within their Medicaid/CHIP systems enterprises.

Also, MMIS funding is not restricted to supporting only eligible providers but can support all Medicaid providers. This is an important consideration when coordinating SIM efforts with the work of state Medicaid agencies. However, please note that MMIS funds are not allowable for infrastructure outside the MMIS environment and for either MMIS or E&E funding, cost allocation with other entities accruing benefit is still required.

The SIM Grant Funding Opportunity Announcement (http://1.usa.gov/1kSIUTu) identifies that SIM grant funding is possible for Health IT and HIE and can include infrastructure for collecting and managing model testing initiatives, including provider directory. However, SIM funding may not supplant existing federal or state funding.

SIM states should coordinate with projects that may already be funded for needed infrastructure (SMHP, EHRIP, IAPD considerations).

Procurement considerations include typical Health IT Project Plan Phases (planning and design, pre-procurement, procurement, and implementation), state project management oversight, quality assurance, systems integrator, and independent validation and verification. All aspects of procurement should be grounded in best practices, and most states are now expecting internal project management offices as well as vendors to follow the Project Management Book Of Knowledge (PMBOK) as a guiding best practice.

Reference material for funding and procurement is included in Appendix A.

# Appendix A: Links to Provider Directory Reference Material

**Additional Definitions for Provider Directory**

In 2011 the ONC HIT Policy Committee/Information Exchange Working Group / Provider Directory Task Force (http://bit.ly/207sCq4) defined provider directory as an electronic searchable resource that lists all information exchange participants, their names, addresses and other characteristics that are used to support secure and reliable exchanges of health information. This task force further defined an Entity-Level Provider Directory (ELPD) as a directory listing provider organizations, and an Individual-Level Provider Directory (ILPD) as a directory listing individual providers. The HPD standard does not incorporate this concept of separate ELPD and ILPD directories.

**ANSI/HL7 V3 Standard Definition:** The Health Level 7 (HL7) Version 3 (V3) Standard: Healthcare, Community Services and Provider Directory (Release 1), approved by the American National Standards Institute (ANSI) (http://bit.ly/1LGqzEu), is defined as a Service Model Specification that provides an extensive service description of a Human Services Directory appropriate for eReferral, Waitlist Management, and Provider Registry.

**Links and documents with overarching considerations for Provider Directory**

1. Provider Directory Solutions: Market Assessment and Opportunities Analysis. An 2012 ONC-commissioned report created by RTI and Audacious Inquiry: https://www.healthit.gov/sites/default/files/provider_directory_solutions_final.pdf
2. NwHIN Power Team – Provider Directory Recommendations (2014): https://www.healthit.gov/FACAS/sites/faca/files/HITSC_NwHIN_Provider_Directory_2014-07-16.pdf
3. The SIM Identity Management and Provider Directory learning event slide deck from July 28, 2015: https://www.healthit.gov/sites/default/files/simlearningeventkickoff.pdf
4. Provider Directories – A Snapshot – A slide deck provided by Michigan Health Information Network (MiHIN): https://www.healthit.gov/sites/default/files/michiganhin.pdf
5. Rhode Island Unified Provider Directory Assessment and Recommendations. An ONC-commissioned report created by RTI and Audacious Inquiry (2013): https://www.healthit.gov/sites/default/files/ri_unified_pd_assessmentrecommendations.pdf
6. "Practical Guide to Populating and Maintaining Provider Directories for Health Information Exchange," March 9, 2010. Prepared for the PD CoP by Mass eHealth Collaborative. As found at: https://statehieresources.wikispaces.com/file/view/Provider+Directory+Implementation+Guide-March+2012.pdf
7. HITPC Provider Directory Environmental Scan (from the S&I Framework wiki site): http://wiki.siframework.org/file/view/HITPC%20Provider%20Directories%20Environmental%20Scan.pdf
    a. This is dated but covers all aspects of an environmental scan: maintenance and accuracy, clearinghouses, Surescripts, HIE vendors, EHR vendors, health plans, State governments and emerging statewide HIOs Federal Government, associations, hospitals (with hospital systems, IDN's), third-party data suppliers, standards (HPD, DSML, LDAP, DNS). report was written in 2010.)

**Links and documents related to Provider Directory standards and architecture**

1. Direct Basics: Q&A for Providers: https://www.healthit.gov/sites/default/files/directbasicsforprovidersqa_05092014.pdf

2. ONC Modular Specification Provider Directory (PD) Overview: www.healthit.gov/facas/sites/faca/files/NWHIN_HITSC_PD_Briefing_2014-04-17.pptx
    a. Modular Specification Provider Directory Project - Artifacts Developed. Implementable, Testable, Certifiable: Requirements Traceability Matrix (RTM).
3. EHR/HIE Interoperability Workgroup's Governance Best Practices & Standards Alignment Project – Federated Provider Directories Pilots, Final Report: https://www.healthit.gov/sites/default/files/iwg_hie_exemplar_report_04042014_final.pdf
4. PD Affinity Group Slide Deck sent out in advance of the Standards and Architecture call: https://www.healthit.gov/sites/default/files/pd_affinitystandards_and_architecture.pdf
5. Integrating the Healthcare Enterprise (IHE) IHE IT Infrastructure Technical Framework Supplement – Healthcare Provider Directory (HPD) Trial Implementation, August 31, 2015: http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_HPD.pdf
6. ONC Modular Specifications Provider Directory Project: The goal of this now-concluded project was to develop implementable, testable specifications along with a conformant test implementation and high quality test cases that verify conformance of the test implementations to the specification.
    a. http://modularspecs.siframework.org/Provider+Directories+Homepage. Contains additional links to:
        i. Reference Docs: http://modularspecs.siframework.org/Provider+Directories+Reference+Docs
        ii. Artifacts: http://modularspecs.siframework.org/Provider+Directories+Artifacts
        iii. Feedback: http://modularspecs.siframework.org/Provider+Directories+Feedback
        iv. Installation Guide: http://modularspecs.siframework.org/Provider+Directories+Installation+Guide
        v. Metadata and Errors: http://modularspecs.siframework.org/Provider+Directories+Test+Implementation+Metadata+and+Errors
        vi. Federation Overview: http://modularspecs.siframework.org/Federation+Overview
7. S&I Framework – Provider Directories page: http://wiki.siframework.org/Provider+Directories. This work preceded the Modular Specifications Provider Directory Project and is also closed but the site has significant information available to inform efforts to specify, develop, or procure provider directories. The Resources tab has several links with descriptions.
8. HL7 Version 3 Standard: Healthcare, Community Services and Provider Directory, Release 1, February 2010: http://wiki.siframework.org/file/view/HL7_V3_HCSPDIR_R1_2010FEB.pdf
9. ONC Interoperability Standards Advisory page: https://www.healthit.gov/standards-advisory
10. ONC Standards and Certification Regulations Page, includes the 2015 Edition Health Information Technology (Health IT) Certification Criteria: https://www.healthit.gov/policy-researchers-implementers/standards-and-certification-regulations
11. HIT Policy Committee, Information Exchange Workgroup, "Summary of Final Recommendations on Individual-Level Provider Directory (ILPD)." Note: this link opens a PowerPoint slide deck. https://www.healthit.gov/archive/archive_files/HIT%20Policy%20Committee/2011/2011-03-02/Information%20Exchange%20WG_Mar_2_2011_HITPC_ILPD_Recsv4.ppt
12. The Argonaut Project is refining and packaging specifications and implementation guides for FHIR RESTful API for data element query of the Common MU Data Set and Provider Directories: http://argonautwiki.hl7.org/index.php?title=Main_Page

**Links and documents related to Provider Directory funding and procurement**

1. State Innovation Models: Round Two of Funding for Design and Test Assistance: https://innovation.cms.gov/Files/x/StateInnovationRdTwoFOA.pdf

2. Federal Financial Participation for HIT and HIE – A CMS page with useful information on funding options: http://www.medicaid.gov/medicaid-chip-program-information/by-topics/data-and-systems/federal-financial-participation-for-hit-and-hie.html
    a. This page has links to State Medicaid Directors Letter SMD #11-004: https://downloads.cms.gov/cmsgov/archived-downloads/SMDL/downloads/SMD11004.pdf
    b. And to State Medicaid Directors Letter SMD #10-016: https://downloads.cms.gov/cmsgov/archived-downloads/SMDL/downloads/SMD10016.pdf
3. PD Affinity Group Slide Deck sent out in advance of the Funding and Procurement call: https://www.healthit.gov/sites/default/files/funding_and_procurement_discussion_topics_151005.pdf

**Links and documents related to Provider Directory policy and governance**

1. California Trust Framework Pilot Phase 1: Federated Provider Directory Policy: https://www.healthit.gov/sites/default/files/appendix7_caonboardingrequirementsfortfpilot.pdf
2. HITPC Stage 3 Recommendations for Provider Directory: https://www.healthit.gov/facas/FACAS/sites/faca/files/ie_wg_july_22_13.pptx
3. Western State Consortium ONC State Health Policy Consortium Project – Final Report: https://www.healthit.gov/sites/default/files/wscfinalreport.pdf
4. HIMSS National HIE Roundtable – Provider Directories – a Technical and Policy Update from CMS – Slide Deck – 4/23/2014: http://s3.amazonaws.com/rdcms-himss/files/production/public/FileDownloads/2014-04-17-HIECommunityRoundtable_ONCProviderDirectoriesUpdate.pdf
5. Key Considerations Related to Policies for Interoperable Federated Provider Directories, Version 1.0 (Last Revised March 6, 2014): https://www.healthit.gov/sites/default/files/keyconsiderationsrelated_to_policies_for_interoperablefederate_dpds.pdf
    a. And a related document: Provider Directory Community of Practice 2/19/14 – a PowerPoint slide deck from that meeting which covered two topics: these key policy considerations and the National Plan & Provider Enumeration System (NPPES) Modernization Effort: https://www.healthit.gov/sites/default/files/keyconsiderationsrelated_to_policies_for_interoperable_federatedpdsslides.pdf
6. PD Affinity Group Slide Deck sent out in advance of the Policy and Governance call: https://www.healthit.gov/sites/default/files/policy_and_governance_discussion_topics151019.pdf
7. Oregon Common Credentialing Program: http://www.oregon.gov/oha/OHPR/occp/Pages/index.aspx

**Other links and documents of interest:**

1. Oregon's Provider Directory Subject Matter Expert Workgroup Summary http://www.oregon.gov/oha/OHIT/Documents/Provider%20Directory%20SME%20Workgroup%20Summary%_202014.pdf
    a. Oregon's Provider Directory development continues with the Provider Directory Advisory Group which is focused on implementation and governance: http://www.oregon.gov/oha/OHIT/Pages/Provider-Directory-Advisory.aspx

2. The Hilltop Institute – Network Adequacy and essential Community Providers Workgroup: A Report to the Maryland Health Benefit Exchange Board of Trustees, Sept 11, 2015: http://www.marylandhbe.com/wp-content/uploads/2015/09/Final_Network-Adequacy-and-ECP-Report_091115.pdf
    a. This report includes several references to provider directories as part of plans participating in a HBE, but many of the issues raised and the recommended actions and possible policy approaches can also be applied to a more generalized statewide provider directory. This report serves as a suggestion that similar HBE analyses may exist and should be considered as helpful sources of information related to provider directories.
3. OneHealthPort is the State HIE for the state of Washington. It is described as a thin-layer HIE model, with no repository or electronic health record. It provides a central hub through which trading partners can exchange secure messages, including CCD and ADT messages. It operates both an entity and individual level provider directory of Direct addresses.
    a. Read about OneHealthPort in this document: http://www.onehealthport.com/sites/default/files/hie/HIE%20Collateral.pdf
    b. They have also published an implementation guide for their Direct-Address Provider Directory. Their directory is a community defined implementation of the HPD+ national standard content in a flat file format. This file exchange supports organizations utilizing a contracted HISP to meet their MU requirements around Direct messaging: http://www.onehealthport.com/sites/default/files/hie/Implementation_Guide_DPD.pdf
    c. They also have an online entity level directory: http://www.onehealthport.com/content/hie-entity-level-provider-directory
4. The New York State Health Care Provider Database: A Framework for Action, prepared by HealthConnections Health Planning for the New York State Health Foundation, December 2014: http://nyshealthfoundation.org/uploads/resources/new-york-state-health-care-provider-database-report-dec-2014.pdf
    a. Identifies data sources and makes recommendations for the development and operation of a statewide provider directory, including recommended policy lever and funding recommendations.
5. Manatt Directory Assistance Paper September 2015:
    a. In a new report for the California HealthCare Foundation, Manatt Health examines policy, operational, business, and technical obstacles to well-functioning, integrated provider directories and how they have been overcome in four states: Colorado, Maryland, New York, and Washington. The report details the perspectives and experiences of consumer advocates, carriers, providers, state-based marketplaces (SBMs), and state Medicaid agencies in those states, with the goal of informing California policymakers and stakeholders as they seek to improve consumer access to accurate provider network information. A link to the report is available from this page: https://www.manatt.com/White-Papers/Directory-Assistance-Maintaining-Reliable-Provider-Directories-for.aspx
    b. PDF available at: http://img.en25.com/Web/ManattPhelpsPhillipsLLP/%7bd462281f-9e70-4183-971e-a2c70101d0e1%7d_DirectoryAssistanceProvider.pdf

## Appendix B: Provider Directory Recent Federal Activities - Public Documents

The following are key public documents that include the topic of provider directories and that states, plans, providers, health IT developers/implementers should be aware of and tracking. This list should help states, plans and others to understand the federal government's recent activities to support the goals for health care directories as articulated in the Shared Nationwide Interoperability Roadmap V1.

**Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Roadmap**

- This document includes a section on "Health Care Directories and Resource Location" (page 39). It explains the background and current state as well as milestones and calls to action toward advancing the use of directories in support of interoperability (page 43, 71, 72). The Roadmap includes a call to action that states that "Provider directory operators should align existing directories to the extent possible with best available standards for provider directories as identified in ONC's most recent finalized Interoperability Standards Advisory or with emerging RESTful approaches if implementation timelines are not near-term."
- http://www.healthit.gov/policy-researchers-implementers/interoperability

**Medicaid Managed Care Proposed Rule**

- Describes the desire to create directories in machine readable format in order to improve the usefulness and accuracy of directories. "We believe that the accuracy and usefulness of provider directories could be improved by requiring that their data be held in a standardized format and be exposed through open and standardized application programming interfaces (APIs)." The NPRM states that CMS is considering requiring the best available provider directory standard as listed in the ONC 2015 Interoperability Standards Advisory.
- https://www.federalregister.gov/articles/2015/06/01/2015-12965/medicaid-and-childrens-health-insurance- program-chip-programs-medicaid-managed-care-chip-delivered

**HHS Notice of Benefit and Payment Parameters for 2016 – Final Rule**

- This rule specified requirements for Qualified Health Plans within Health Insurance Exchanges and is similar to the Medicaid Managed Care NPRM with regard to the motives for creating standardized electronic provider directories.
- 2016 Final Rule: https://www.federalregister.gov/articles/2015/02/27/2015-03751/patient-protection-and- affordable-care-act-hhs-notice-of-benefit-and-payment-parameters-for-2016#p-1004
- 2017 rule can be found here.

**Medicare Advantage call letter**

- This is also similar to Medicaid Managed Care NPRM.
- http://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/Announcement2016.pdf

**ONC's 2015 Edition Certification Final Rule**

- ONC proposed two provider directory certification criteria in the proposed rule. The final rule did not adopt these certification criteria. This was because the IHE HPD standard requires further implementation to ensure stability and support widespread adoption and the same is true for the federated concepts. Also, RESTful solutions are being defined and may be a viable alternative in the near future.
- https://www.federalregister.gov/articles/2015/10/16/2015-25597/2015-edition-health-information-technology-health-it-certification-criteria-2015-edition-base
- ONC Regulation Landing Page here

**ONC's Interoperability Standards Advisory**

- This is how ONC coordinates the identification, assessment, and determination of the best available health IT standards. The IHE Healthcare Provider Directory profile is currently listed as the best available provider directory standard here.
- https://www.healthit.gov/standards-advisory

**CMS's Meaningful Use Final Rule**

- This final rule includes a section describing the collection of directory information to be included the National Plan and Provider Enumeration System. This information includes Direct addresses and/or electronic service information.

**Mechanized Claims Processing and Information Retrieval Systems Proposed Rule (MMIS Proposed Rule)**

- This rule proposes that "a master person index or provider directory can be built once for multiple uses within the larger Medicaid enterprise" and "the system supports seamless coordination and integration with the Marketplace…." Also, "The agency ensures alignment with, and incorporation of, industry standards adopted by the Office of the National Coordinator for Health IT."
- Proposed Rule: https://www.federalregister.gov/articles/2015/04/16/2015-08754/medicaid-program-mechanized-claims-processing-and-information-retrieval-systems-9010
- Final rule: https://www.federalregister.gov/articles/2015/12/04/2015-30591/medicaid-program-mechanized-claims-processing-and-information-retrieval-systems-9010

**RWJF and HHS Provider Network Challenge**

- This challenge was created to demonstrate the possibilities of what could be achieved by creating standardized electronic provider directories. Winners were announced in August 2015.
- http://www.health2con.com/devchallenge/rwjf-provider-network-challenge/