Summary of the 2019 Comprehensive Revision to the National Health Expenditure Accounts

The U.S. National Health Expenditure Accounts (NHEA) is an accounting matrix that presents health spending along two dimensions: spending for health care goods and services, and the programs and payers that purchase those goods and services.[1] To keep these accounts accurate and relevant, the scope, methods, and data sources used are periodically reexamined. Every five years the NHEA undergoes a comprehensive revision that includes the incorporation of newly available source data, methodological and definitional changes, and the benchmarking of estimates from the U.S. Census Bureau's quinquennial Economic Census (which are available in years ending in "2" and "7").[2] During these comprehensive revisions, the entire NHEA time series is opened for revision. This document summarizes the changes in methods, definitions, and source data that were incorporated for the 2019 comprehensive revision of the NHEA estimates.

In aggregate, the comprehensive revision and other routine revisions resulted in decreased spending in 2017 of $21 billion, or roughly 0.6 percent of total national health care expenditures. Changes related to the comprehensive revision decreased spending by $25 billion in 2017, while more routine revisions due to more recent and updated source data increased spending by $4.0 billion.

The largest downward revisions were to hospital care ($63 billion) and to government administration and net cost of health insurance ($9 billion). The largest upward revisions were to structures and equipment ($13 billion), physician and clinical services ($13 billion), other non-durable medical products ($11 billion), and retail prescription drugs ($10 billion). The remainder of the revisions ($4 billion) were from all other categories of health care spending.

Services and Goods

Incorporation of the Economic Census: The following services were benchmarked to revenue data from the 2017 Economic Census Geographic Area Series[3]:

- Dental Services
- Home Health Care
- Hospital Care
- Nursing Care Facilities and Continuing Care Retirement Communities
- Other Health, Residential, and Personal Care
    - Residential Care
    - Ambulance
- Other Professional Services
- Physician and Clinical Services

Spending for years between the 2012 and 2017 Economic Census data were interpolated using estimates from the Census Bureau's Service Annual Survey.

Hospital Care: Non-federal hospital spending was benchmarked to the Economic Census for 2012 and 2017. Benchmark spending for prior years (1960- 2007) are based on the American Hospital Association (AHA) Annual Survey. In recent years, the Economic Census definition and scope of hospital expenditures more closely reflects the NHEA definition and scope than the AHA Annual Survey. In the AHA Annual Survey, hospital revenue includes all revenue from the hospital, hospital subsidiary, or through a partnership or joint venture with another provider. Recent trends toward the integration of providers, particularly hospital acquisitions of physician practices, leads to the potential inclusion of revenue in the AHA Annual Survey that should be classified as physician and clinical services expenditures in the NHEA. To avoid double counting of these expenditures in the NHEA, hospital expenditures are benchmarked to the Economic Census for 2012 and 2017, which is the key reason for the $63 billion downward revision to the 2017 estimate. Growth for the intervening years (2008 – 2018) was estimated based on public program data and private spending trends from the Census Bureau and the AHA Annual Survey.

Retail Prescription Drugs: The retail prescription drug estimate reflects three improvements that were incorporated for this comprehensive revision, including the treatment of pharmacy rebates, the phasing out of an adjustment for sales flowing through nursing homes, and improved measures of the sources of funds that pay for prescription drugs. These changes primarily reflect an improved alignment of the data sources used to estimate and adjust retail prescription drug spending in the NHEA.

Pharmacy rebates – The method for adjusting retail prescription drug spending to remove rebates was improved for the NHE19 estimates. In prior year's estimates, the value of total rebates (both manufacturer and pharmacy rebates) was removed from gross retail prescription drug spending. The underlying benchmark data that is used to estimate gross retail prescription drug spending (the Census of Retail Trade) reports levels that are already net of pharmacy rebates, but not net of manufacturer rebates. For this comprehensive revision we have excluded pharmacy rebates from our rebate adjustment, and now we only remove manufacturer rebates since the underlying source data already exclude pharmacy rebates.

Retail sales flowing through institutions – Historically, the retail sales of prescription drugs that flow through nursing homes and other institutions have been removed from the NHEA retail prescription drug estimate in order to eliminate the double counting of those expenditures. The adjustment to remove these expenditures remains in place for 1960 through 1998. However, for this comprehensive revision, this adjustment was gradually phased out between 1999 and 2007 in order to reflect changes related to the implementation of Medicare Part D and changes in the supply chain for institutional purchases of prescription drugs.

Improved measures of the sources of funds that pay for retail prescription drugs – The estimates of Medicare and Medicaid retail prescription drug spending were improved to better reflect spending by these public programs through private health insurance plans (such as Medicaid managed care organizations and Medicare Advantage plans). These improved estimates lowered prescription drug spending for both Medicare and Medicaid.

Additionally, the estimates of out-of-pocket and private health insurance spending for retail prescription drugs incorporated improved estimates of sales through mail order pharmacies.

Durable Medical Equipment: The durable medical equipment estimate was benchmarked to the Bureau of Economic Analysis' (BEA) updated Personal Consumption Expenditure (PCE) bridge tables, and an improved method for removing the revenues of optometrists' services was incorporated.

Other Non-durable Medical Products: For 1960-2019, the scope of the other nondurable medical products category was revised and the series was benchmarked to PCE data for nonprescription drugs and other medical products. The new scope of the other non-durable medical products category no longer includes sanitary paper products, electric housewares, lighting fixtures, and rubber household supplies.

Public Health

State and Local Public Health: The state and local public health estimate was benchmarked to the 2017 Census of Governments.

Investment

Structures and Equipment: The estimates for public investment and private investment were both affected by revisions in data sources and methodology.

Public Investment - To derive the estimate of public investment for the NHEA, we rely on data from the Bureau of Economic Analysis' (BEA) National Income and Product Accounts. For this comprehensive revision, we incorporated revised data from BEA back to 1960, and made improvements to the method used to incorporate this data into the NHE estimate. The revision to the structures and equipment category was primarily due to the incorporation of the revised source data for investment in public equipment and software, and to a lesser extent, due to improvements in methodology.

Private Investment - To derive the estimate of private investment for the NHEA, we rely on the Annual Capital Expenditures Survey (ACES) data from the Census Bureau that is published on a NAICS basis. In order to match the NHEA definition, we apply an adjustment to the ACES estimate of private investment for NAICS 623 to remove an estimate of investment related to assisted living facilities homes for the elderly and other residential care facilities, which are not included in the scope of the NHEA. For this comprehensive revision, we incorporated Economic Census data for 1997 through 2017 into the adjustment factors used to remove these categories of investment. This change resulted in minor revisions to the entire time series of private investment due to our method of extrapolating the ACES levels back to 1960.

Payers

Health Insurance

Private Health Insurance: The medical portion of property and casualty insurance was reclassified from private health insurance to other private revenues.

Medicare: The Medicare expenditure estimate reflects two changes that were incorporated for this comprehensive revision, including a revision in the allocation of nurse practitioner expenditures, and an improved estimate of Medicare Advantage Part B drug expenditures.

> **Medicare Fee-for-service Part B Services -** Medicare Part B spending is proportionately allocated to physicians and clinics, other professionals, dental services, independent labs, ambulance, and medical suppliers using Medicare claims summary data by provider specialty code. For this comprehensive revision, an adjustment was made to allocate spending for nurse practitioners (which was previously all included in the other professionals category) into both the other professionals and the physician categories.
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> **Medicare Advantage Part B drug expenditures -** Prior to the comprehensive revision, all Medicare Advantage Part B drug expenditures were allocated to the retail prescription drug category, even though not all of these purchases occurred in a retail setting. For this comprehensive revision, this spending is now allocated to three NHE service categories: hospitals, physicians, and retail prescription drugs.

Medicaid: The allocation of Medicaid managed care premiums to the goods and services categories was improved for some states by the additional use of Medicaid Drug Rebate System data. This change caused a downward revision to retail prescription drug spending and an upward revision for most of the other service categories.

Children's Health Insurance Program (CHIP): The allocation of managed care premiums to the goods and services categories was adjusted to allocate spending by state.

Other Third Party Payers

Other Private Revenues: The medical portion of property and casualty insurance was reclassified from private health insurance to other private revenues.

Factors Accounting for Growth

Change in demographic factor—For prior releases of the NHEA, demographic factors reflected the changing distribution of the population by age and gender only. The revised demographic factors reflect age as well as the changing mix of the population on a time-to-death basis, which allows for the demographic adjustment to reflect the changing life expectancy at any given age.[4]

Enrollment

Medicaid enrollment estimates were modified to use available enrollment data reported on the CMS-64 reports.

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[1] For a full description of what is contained in the National Health Expenditure Accounts see: Definitions, Sources and Methods: https://www.cms.gov/files/document/definitions-sources-and-methods.pdf

[2] The Economic Census provides a detailed portrait of the economy once every five years.

[3] For information on the 2017 Economic Census see https://www.census.gov/programs-surveys/economic-census.html

[4] Heffler SK, Caldis TG, Smith SD, Cuckler GA. The long-term projection assumptions for Medicare and aggregate national health expenditures [Internet]. Baltimore (MD): Centers for Medicare and Medicaid Services; 2020 Apr 22 [cited 2020 Nov 9]. Available from: https://www.cms.gov/files/document/long-term-projection-assumptions-medicare-and-aggregate-national-health-expenditures.pdf