State Health Expenditure Accounts: State of Provider, 1980-2004

DEFINITIONS AND METHODOLOGY

Health Account Structure

The structure of the State Health Expenditure Accounts (SHEA) parallels that of the National Health Expenditure Accounts (NHEA). The SHEA use the same definitions and, to the extent possible, the same data sources as the NHEA (Centers for Medicare & Medicaid Services, 2006a and 2006b). For health services, this structure clusters spending according to the establishment providing those services.[1] For retail purchases of medical products, it groups spending according to product classification.

The Federal Government maintains an establishment-based structure for data collection codified in the *North American Industrial Classification System* (NAICS) (Office of Management and Budget, 1997). The NAICS structure forms the basis for health establishment categories used in both the NHEA and SHEA by defining activities that are primary to these establishments. Historically, the NHEA and SHEA were grouped according to *Standard Industrial Classification* (SIC) (Office of Management and Budget, 1987). NAICS replaced SIC in 1997, and subsequent NHEA and SHEA categorizations are the result of a crosswalk between SIC and NAICS (Centers for Medicare & Medicaid Services, 2006a).

The NAICS is designed to capture the evolving structure of the economy and to group establishments into common classifications based on similar inputs to the production process. For the health care and social services industry, NAICS is also structured to capture a continuum of medical and social care that often blends seamlessly from one type of facility to another. For example, the structure transitions from the most acute medical care facilities, such as offices of physicians and hospitals, to non-acute medical care facilities, such as nursing homes, to those facilities providing little or no medical care, such as certain residential facilities and those offices providing social services only.

For health expenditure accounting, this establishment-based structure of SHEA allows us to tap a wealth of State-level information collected by the Federal Government for other purposes. This structure also makes comparisons among States possible by ensuring uniformity in concepts, collection methods, and data processing across States. When individual States create their own health spending estimates using different concepts and data sources, such comparisons among States become more tenuous.

Although collecting data by establishment type eases the data collection burden and increases uniformity in definitions, it does not permit the accounts to measure spending for specific services. This is especially true for several health care establishment types that produce a variety of services. For example, hospitals produce inpatient and

[1] The U.S. Census Bureau uses accurate and complete information on the physical location of each establishment to tabulate data for States. If a provider did not provide acceptable information on their physical location, location information from Internal Revenue Service tax forms was used as a basis for coding geographic area.

outpatient hospital services but may also operate nursing home units and/or home health agencies (HHAs) under the same organizational and establishment structure. Therefore, this establishment-based structure may not meet all the analytical needs of researchers and policymakers who wish to track delivery of specific services.

For establishment-based expenditures, spending is based on location of the State of the provider rather than by the beneficiary's State of residence. Because people are able to cross State borders to receive health care services, health care spending by provider location is not necessarily an accurate reflection of spending on behalf of persons residing in that State. ***Therefore, computing per capita health spending using State-of-provider expenditure data and resident population is not advised because of the misalignment between State of provider and State of residence.*** In future phases of SHEA, we will estimate border-crossing for health care services and apply these estimates to our State-of-provider expenditures, which will produce expenditures based on location of beneficiary residence. We will produce per capita expenditures, as well as interstate comparisons of spending, that are similar to those produced earlier (Martin et al., 2002).

The following sections contain further detail on the data sources and methods used to produce expenditure estimates by establishment type. Throughout these sections, we refer to categories of data produced by government agencies for different health establishment types. The sources of these data are business receipts and revenues for taxable and tax-exempt establishments from the 5-year Census of Service Industries (CSI) (U.S. Bureau of the Census, 2005); population (U.S. Bureau of the Census, 2006); wages and salaries (U.S. Bureau of Labor Statistics, 2006); and business receipts for sole proprietorships, partnerships, and corporations from the Business Master File (BMF) (U.S. Internal Revenue Service, 2004).

Finally, for each separately-estimated service within each payer category (All Payers, Medicare, and Medicaid), the State distributions are controlled to the corresponding estimates in the 2005 National Health Expenditure Accounts.

Hospital Care

Hospital care expenditure estimates (NAICS 622) reflect spending for all services that are provided to patients and that are billed by the hospital. Expenditures include revenues received to cover room and board, ancillary services such as operating room fees, services of hospital residents and interns, inpatient pharmacy, hospital-based nursing home care, care delivered by hospital-based HHAs, and fees for any other services billed by the hospital. We exclude expenditures of physicians who bill independently for services delivered to patients in hospitals. These independently-billing physicians are included in the physician sector.

We estimate hospital expenditures in two pieces: (1) non-Federal hospitals and (2) Federal hospitals. The non-Federal hospital expenditures are estimated using American Hospital Association (AHA) Annual Survey data that capture information from registered and non-registered hospitals for each State (American Hospital Association, 2004). To estimate spending in Federal hospitals, we use State level data from the Federal agencies that administer those facilities.

Physician and Clinical Services

We estimate the expenditures for physician services (NAICS 6211, 6214 and a portion of 6215) in three pieces: (1) expenditures in private physician offices and clinics and specialty clinics[2]; (2) fees of independently billing laboratories; and (3) clinics operated by the U.S. Department of Veterans Affairs (DVA) and the U.S. Indian Health Service.

Expenditures in private physician offices and clinics and specialty clinics are based on State distributions of business receipts from taxable establishments and on revenues from tax-exempt establishments, as reported in the 1977, 1982, 1987, 1992, 1997 and 2002 CSI (U.S. Bureau of the Census, 2005). To estimate the distribution of expenditures among States between Census years and for 2003-2004, we use growth in business receipts of sole proprietorships, partnerships, and corporations for taxable establishments (U.S. Internal Revenue Service, 2004). For tax-exempt establishments, we use growth in resident population (U.S. Bureau of the Census, 2006).

To estimate independently-billing laboratory expenditures, we use distributions by State of business receipts in taxable physician establishments as described above. These expenditures are then added to the estimates of physician and clinical services.

Some physicians may receive professional fees that are paid for by hospitals. These professional fees are included with hospital expenditures and not with physician expenditures; therefore we subtract them from the physician estimates. The estimates of professional fees by State are based on professional fee expenses from the AHA Annual Surveys for 1980, 1985, and 1990-1993. Using AHA community hospital revenues, we interpolate and extrapolate professional fee expenditures by State for intervening years and for 1994-2004.

Other Professional Services

We estimate expenditures for other professional services (NAICS 6213) by first estimating expenditures for the services of licensed professionals such as chiropractors, optometrists, podiatrists, and independently practicing nurses using CSI and BMF data, just as we do for taxable physician offices and clinics and specialty clinics. (There are no tax-exempt establishments for licensed other professionals.) The distributions for 1997-2004 were extrapolated using growth in wages and salaries in offices and clinics of medical and osteopathic physicians and specialty clinics (U.S. Bureau of Labor Statistics, 2006). We use Medicare data to separately estimate spending for Medicare ambulance services, which are then added to expenditures for other professionals.

Dental Services

Expenditures in Offices and Clinics of Dentists (NAICS 6212) are based on State distributions of business receipts from taxable establishments reported in the 1977, 1982, 1987, 1992, 1997, and 2002 CSI (U.S. Bureau of the Census, 2005). (No tax-exempt dental offices and clinic establishments report in the CSI.) To estimate State distributions

[2] Specialty clinics include family planning centers, outpatient mental health and substance abuse centers, all other outpatient care facilities, and kidney dialysis centers.

for intervening years and to extrapolate for 2003-2004, we use business receipts from the BMF for sole proprietorships, partnerships, and corporations (U.S. Internal Revenue Service, 2004).

Home Health Care

We base expenditure estimates for care provided in freestanding HHAs (NAICS 6216) on CSI-based revenue for taxable businesses and receipts for tax-exempt businesses (U.S. Bureau of the Census, 2005). Because a separate SIC for HHAs (SIC 8082) was first created with the release of the 1987 SIC, data for this service category are available for 1987, 1992, 1997, and 2002 only and serve as a benchmark for private spending on freestanding home health services by State. Comparing Medicare reimbursements for government-owned HHAs with Medicare reimbursements for all ownership types of HHAs, we develop separate estimates of spending for government-supplied home health services (not surveyed by the CSI) for 1987, 1992, 1997 and 2002. We then sum expenditures for services from government and private HHAs. Next, using expenditures for home health services paid by Medicare and Medicaid, we interpolate and extrapolate estimates for 1980-1986 and 1988-1991. For 1993-1996, 1998-2001, and 2003-2004, we interpolate and extrapolate using the growth in private wages and salaries paid by home health care establishments (U.S. Bureau of Labor Statistics, 2006).

Nursing Home Care

Expenditures reported in this category are for services provided by freestanding nursing homes. These facilities are defined in the NAICS as establishments primarily engaged in providing inpatient nursing and rehabilitative services and continuous personal care services to persons requiring nursing care (NAICS 6231) and continuing care retirement communities with on-site nursing care facilities (NAICS 623311). These services do not include nursing home services provided in long-term care units of hospitals.

The nursing home estimates are prepared in four pieces: (1) private nursing homes; (2) State and local nursing homes; (3) nursing homes operated by the U.S. Department of Veterans Affairs ; and (4) intermediate care facilities for the mentally retarded (ICF/MRs).

To estimate spending in private nursing homes, we use revenues for taxable businesses and receipts for tax-exempt businesses from the CSI for 1977, 1982, 1987, 1992, 1997, and 2002 (U.S. Bureau of the Census, 2005). We interpolate and extrapolate revenues and receipts by State using wages and salaries paid in private nursing home establishments (U.S. Bureau of Labor Statistics, 2005). To estimate expenditures in State and local government nursing homes, we inflate wages and salaries paid in these nursing homes using the ratio of revenues to salaries paid in private nursing homes. We estimate spending for nursing home care in DVA facilities from State-specific data furnished by the DVA. To estimate spending for ICF/MRs, we use Medicaid expenditures for nursing home care in ICF/MRs reported by State Medicaid agencies on Form CMS-64 (Centers for Medicare & Medicaid Services, 1980-2004).

Prescription Drugs and Other Non-Durable Medical Products

We estimate this category in two parts: spending for prescription drugs and spending for non-prescription (over-the-counter) medicines and sundries. For both parts, we base our

estimates on retail sales data reported in the 1977, 1982, 1987, 1992, 1997 and 2002 Census of Retail Trade, Merchandise Line Sales (U.S. Bureau of the Census, 2005). We interpolate distributions for intervening years using population data (U.S. Bureau of the Census, 2006).

In the case of prescription drugs, we extrapolate expenditures for 2003 and 2004 using State data reported in the *Retail Prescription Method of Payment Report* (IMS Health, 2004). For non-prescription drugs, we extrapolate expenditures for 2003 and 2004 using population data (U.S. Bureau of the Census, 2006).

Durable Medical Products

Using State data from the Census of Retail Trade for 1977, 1982, 1987, 1992, 1997, and 2002 (U.S. Bureau of the Census, 2005), we estimate expenditures for optical goods sold in retail establishments. To estimate optical goods sales that occur in optometrist offices, we use optometrist offices' business receipts from the 1977, 1982, 1987, 1992, 1997, and 2002 CSI (U.S. Bureau of the Census, 2005). We rely on per capita personal income statistics (U.S Bureau of Economic Analysis, 2006) to extrapolate and interpolate estimates of optical sales for years when actual retail sales are not available.

Other Personal Health Care

Privately funded other personal health care consists of industrial in-plant services provided by employers for the health care needs of their employees. First, we obtain the number of occupational health nurses for 1984, 1992, 1996, and 2000 (Health Resources and Services Administration, 1985, 1993, 1997 and 2001). Next, using non-farm wage and salary employment data by State (U.S. Bureau of Economic Analysis, 2005b), we interpolate and extrapolate the number of occupational health nurses for intervening years. Finally, we multiply our estimates of occupational health nurses with average annual wages in the health services sector (U.S. Bureau of Economic Analysis, 2005a and 2005b).

Publicly funded expenditures from this category include medical care delivered in non-traditional medical provider sites. Some examples are senior citizen centers, schools, and military field stations. One of the largest categories of government spending for Other Personal Health Care is comprised of Home and Community-Based Waivers under the Medicaid program. Under this portion of Medicaid, States may apply for waivers of some of the statutory provisions in order to provide care to beneficiaries who would otherwise require long-term inpatient care in a hospital or nursing home. Examples of types of services provided are habilitation, respite care, and environmental modifications. This care is frequently delivered in community centers, senior citizen centers and through home visits by various kinds of medical and non-medical personnel.

Medicare

We estimate fee for service Medicare spending based on the State-of-provider payments recorded in Medicare's National Claims History (NCH) files (Centers for Medicare & Medicaid Services, 2005). These detailed claim records, which were tabulated for 1991-1993, 1996, 1999, and 2002 only, permit us to assemble expenditures for each SHEA service category. Using unpublished tabulations of Medicare reimbursements by State for separate Medicare program service categories, we extrapolate payments for each type

of service from 1980-1990, 1994-1995, 1997-1998, 2000-2001, and 2003-2004. When State-of-provider data are unavailable, we perform extrapolations using State-of-beneficiary reimbursement information.

We separately determine Medicare estimates for services provided to Medicare enrollees in managed care plans. Based on information from Adjusted Community Rating forms submitted to CMS, we obtain capitated Medicare payments by type of service for 1998, 1999 and 2001 (Centers for Medicare & Medicaid Services, 2005). For intervening years, we estimate per capita expenditures using Medicare managed care payment data and enrollment (Centers for Medicare & Medicaid Services, 2005), and for 2002-2004, we extrapolate using growth in managed care enrollment.

Medicaid

Our Medicaid estimates include both Federal and State-reported funds. Additionally, because of the nature of the Medicaid program, in which States pay only for residents of their State, we assume that Medicaid estimates primarily reflect spending by State of residence.

We base our calendar year Medicaid estimates on the fiscal year Medicaid State Financial Management Reports, which are tabulations of the CMS-64 forms that are filed by the State Medicaid agencies (Centers for Medicare & Medicaid Services, 1980-2004). Available annually for each State, the CMS-64s show total and service-specific program expenditures. However, we adjust reported program data to fit the estimates into the framework of the SHEA. The first adjustment splits home health care spending into two parts: (1) expenditures flowing to hospital-based home health care establishments, and (2) expenditures flowing to freestanding home health care establishments. This split is based on ratios supplied from Medicare program data. We remove the hospital-based home health care estimate from Medicaid home health care expenditures and add that estimate to Medicaid hospital care expenditures.

The Medicaid nursing home estimate includes expenditures for freestanding nursing homes and nursing home ICF/MRs. Another adjustment removes expenditures flowing to hospital-based nursing homes from Medicaid nursing home spending and includes them with Medicaid hospital expenditures.

We exclude part of Medicaid Disproportionate Share Hospital (DSH) payments to hospitals and Upper Payment Limit (UPL) payments to nursing homes. These excluded payments are offset either by taxes and donations paid by the receiving facilities or by intergovernmental transfers from the receiving facilities and State governments. Such payments are excluded because they do not contribute additional State funds to overall hospital and nursing home operations. (Coughlin, Ku, and Kim, 2000).

Finally, we allocate Medicaid managed care premiums among services in a manner similar to the way FFS expenditures for acute care services are allocated. Sometimes spending for certain categories such as drugs are “carved out” of HMO premiums and are administered separately. (Medicaid agencies frequently carve out drug benefits to retain rebates that some manufacturers are mandated to pay. If drugs are not carved out of the

HMO premium, the HMO can negotiate their own rebates with the manufacturer.) We remove drugs from the HMO premium allocation for all known cases of drug carve-outs.

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