United States Government Accountability Office

Report to the Ranking Member, Committee on Finance, U.S. Senate

May 2015

MEDICAID

Service Utilization Patterns for Beneficiaries in Managed Care

GAO-15-481

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GAO Highlights

Highlights of GAO-15-481, a report to the Ranking Member, Committee on Finance, U.S. Senate

Why GAO Did This Study

Medicaid, a federal-state health financing program for low-income and medically needy individuals, covered 65 million beneficiaries at an estimated cost of $508 billion in fiscal year 2014. More than half of Medicaid beneficiaries are enrolled in managed care plans, a health care delivery model where states contract with managed care organizations to provide covered services for a set cost. Historically, states have submitted relatively unreliable managed care service utilization data, also known as encounter data, to the Centers for Medicare & Medicaid Services, the federal agency that oversees Medicaid. However, recent evidence suggests that encounter data may be improving. Information on beneficiaries' service utilization could serve as a baseline for future analyses of utilization trends over time. GAO was asked to examine the level of services provided to these beneficiaries. In this report, GAO describes what encounter data indicate about the service utilization of Medicaid beneficiaries in managed care plans.

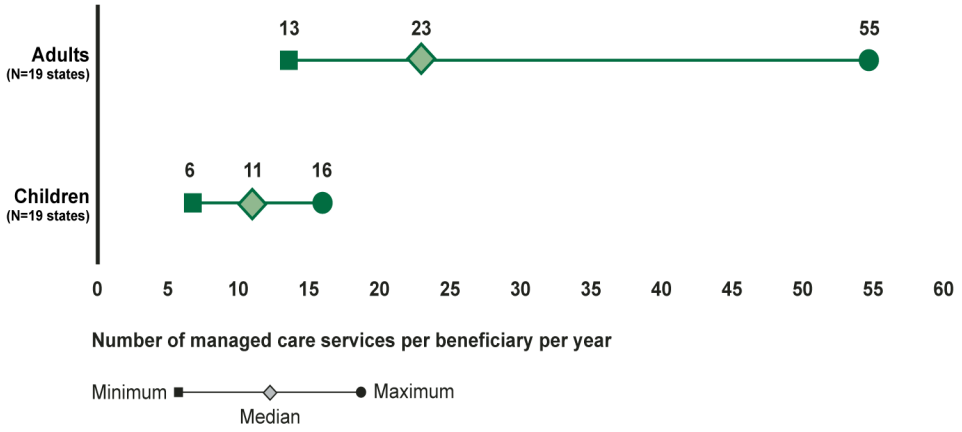
To do this work, GAO analyzed state-reported data included in CMS's 2010 Medicaid Analytic eXtract data and determined that 19 states had data that were reliable for its purposes, but excluded the remaining 31 states and the District of Columbia. For these 19 states, GAO calculated service utilization rates for adult and child beneficiaries enrolled in comprehensive managed care plans by state, service category, and length of enrollment. GAO received technical comments on a draft of this report from HHS and incorporated them as appropriate.

View GAO-15-481. For more information, contact Carolyn Yocom at (202) 512-7114 or yocomc@gao.gov.

What GAO Found

Based on GAO's analysis of 2010 encounter data reported by 19 states, the number of professional services utilized by adult beneficiaries ranged from about 13 to 55. For children, the number of professional services utilized per beneficiary was lower, ranging from about 6 to 16 among the 19 states. Professional services included four categories of services: (1) evaluation and management (E/M) services, such as office visits and emergency room and critical care services; (2) procedural services, such as surgery and ophthalmology; (3) ancillary services, such as pathology and lab services; and (4) other professional services, such as oxygen therapy.

Adult and Child Professional Service Utilization in Selected States, 2010



Source: GAO analysis of Medicaid Analytic eXtract data. | GAO-15-481

States varied considerably in how service utilization was distributed within service categories. For example, of total services,

- adult per beneficiary utilization of ancillary services ranged from 37 percent in Rhode Island to 65 percent in Washington and Illinois; and
- child per beneficiary utilization of E/M services ranged from 29 percent in Minnesota to 45 percent in Georgia and Rhode Island.

Service utilization for both adult and child beneficiaries also varied by the length of enrollment. When compared with beneficiaries enrolled for a full year, total service utilization for adults was 2 to 78 percent higher for partial-year beneficiaries—those enrolled in a comprehensive managed care plan for less than the full year—in slightly more than half of selected states. For children in all but one selected state, service utilization was 4 to 44 percent higher for partial-year beneficiaries compared with full-year beneficiaries.

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Abbreviations

CMS	Centers for Medicare & Medicaid Services
CHIP	State Children's Health Insurance Program
E/M	evaluation and management
FFS	fee-for-service
HCPCS	Healthcare Common Procedural Coding System
MCO	managed care organization
MAX	Medicaid Analytic eXtract
MSIS	Medicaid Statistical Information System
PPACA	Patient Protection and Affordable Care Act

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

May 29, 2015

The Honorable Ron Wyden
Ranking Member
Committee on Finance
United States Senate

Dear Senator Wyden:

Medicaid, a federal-state health financing program for low-income and medically needy individuals, served approximately 65 million beneficiaries at a total cost of about $508 billion in fiscal year 2014. More than half of those beneficiaries are enrolled in managed care plans. As Medicaid spending and enrollment grew in recent years, states increasingly turned to the managed care delivery model as a way to provide services to Medicaid beneficiaries. Under this delivery model, states typically contract with managed care organizations (MCO) to provide a specific set of Medicaid-covered services to beneficiaries. The state pays the MCOs a set amount per beneficiary per month to provide the specific services covered under each managed care plan.[1]

The state expansions of Medicaid under the Patient Protection and Affordable Care Act (PPACA) increased the size of the Medicaid program, as well as the number of beneficiaries enrolled in managed care plans.[2] Since 1999, states have submitted data on managed care service utilization, also known as encounter data, to the Centers for Medicare & Medicaid Services (CMS), the federal agency that oversees Medicaid. Historically, these encounter data have been relatively incomplete and unreliable; thus, little is known about the utilization of services by

[1]The MCO, in turn, pays the provider for the services they provided.

[2]Medicaid serves low-income and medically needy individuals. Under PPACA, states were allowed to expand eligibility for Medicaid under their state plan to most nonelderly, nonpregnant adults who are not eligible for Medicare and whose income is at or below 133 percent of the federal poverty level. PPACA also provides for a 5 percent disregard when calculating income for determining Medicaid eligibility for this population, which effectively increases this income level to 138 percent of the federal poverty level. Pub. L. No. 111-148, § 2001(a)(1), 124 Stat. 119, 271 (2010). For purposes of this report, references to PPACA include the amendments made by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, 124 Stat. 1029 (2010).

Medicaid beneficiaries enrolled in managed care plans. However, recent evidence suggests that the quality of Medicaid encounter data may be improving and stronger requirements surrounding encounter data submissions suggest that such improvements could continue.[3] Analyses of beneficiaries' service utilization could enhance program knowledge and serve as a baseline for future analyses of trends in utilization over time and of the factors that may contribute to differences across states. You asked us to examine the level of services provided to beneficiaries in Medicaid managed care. In this report, we describe what encounter data indicate about the service utilization of Medicaid beneficiaries enrolled in managed care plans.

To describe what encounter data indicate about the service utilization of Medicaid beneficiaries enrolled in managed care plans, we analyzed Medicaid Analytic eXtract (MAX) data for calendar year 2010—the most recent data available at the time of our analysis.[4] To assess the reliability and usability of the MAX data for our purposes, we reviewed related documentation, such as studies that assessed the reliability of or analyzed MAX data, and we interviewed officials from CMS and its contractor responsible for processing the MAX data. We determined that 19 states reported data that were reliable for our purposes: Arizona, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Michigan, Minnesota, Nebraska, New Mexico, New York, Oregon, Rhode Island, Tennessee, Texas, Virginia, and Washington.[5] However, we excluded the other 31 states and the District of Columbia because we

[3]Mathematica Policy Research first reported in 2012 that 2007-2010 Medicaid encounter data, as reported in MAX, were suitable for research purposes. PPACA strengthened the requirement that Medicaid MCOs provide encounter data to states by withholding federal matching payments from states that do not report encounter data to CMS in a timely manner. Pub. L. No. 111-148, §§ 6402(c), 6504(b), 124 Stat. 119, 757, 777 (2010) (codified at 42 U.S.C. §§ 1396b(i)(25), (m)(2)(A)(xi)).

[4]The MAX data files for each state contain information on Medicaid eligibility, service utilization, and payment for each Medicaid beneficiary during a given calendar year. These files are derived from each state's Medicaid Statistical Information System (MSIS) data files and have been processed by CMS's contractor into a research friendly format. We obtained MAX data from CMS in November 2013.

[5]In the 19 selected states, we did not independently verify whether individual MCOs in these states submitted complete and accurate enrollment and encounter data.

determined their data were unreliable or otherwise were not usable for our purposes.[6]

For the 19 selected states, we identified adult and child beneficiaries who were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010, and identified four broad categories of professional services: (1) evaluation and management (E/M) services; (2) procedural services; (3) ancillary services; and (4) other professional services.[7] To determine utilization rates for identified services, we calculated the number of services used per adult and child beneficiary per year by state, service category, and length of enrollment.[8] The results we present are based on data reported to CMS by the 19 states in our analysis, and are not representative of all states and their managed care programs. Our results also do not offer conclusions regarding whether the level of service utilization identified is appropriate.[9] Finally, there are a number of state-specific factors—such as differences in beneficiary health status and provider supply—that could contribute to variation in service utilization across the states, and attributing this variation to specific

[6]We excluded these 31 states and the District of Columbia for the following reasons: (1) no adults or children were enrolled in comprehensive managed care plans, according to MAX (13 states); (2) MAX data were unavailable at the time we began our analysis (11 states); (3) we determined that the data were unreliable such as if fewer than 30 percent of beneficiaries used at least one service (6 states); and (4) services were not reported using a standard coding convention, namely the Health Care Common Procedural Coding System (HCPCS) (2 states). See appendix I for more detail on which states we excluded and why.

[7]Within the four broad categories of professional services, E/M services include preventive services, office and inpatient visits, consultations, and emergency room or critical care visits; procedural services include allergy, cardiovascular, ophthalmology, surgery-administered drugs (including chemotherapy), and immunizations/injections; ancillary services include pathology and lab services, physical medicine, radiology, and anesthesia services; and other professional services include oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. We, in large part, utilized the Health Care Cost Institute's methodology for grouping professional services based on a range of HCPCS codes. These codes are used by providers to bill for professional services.

[8]While our beneficiary population was comprised of individuals enrolled in comprehensive managed care plans, our utilization analysis included all state-reported encounters for the services we reviewed, regardless of whether they were provided through a comprehensive managed care plan or other types of managed care.

[9]We did not compare our results to, for example, utilization in Medicaid fee for service (FFS) or commercial insurance because differences in population characteristics made it difficult to find a suitable comparison group.

factors was beyond the scope of this study. (See appendix I for a detailed description of our methodology and study limitations.)

We conducted this performance audit from November 2013 to May 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Delivery Models for Medicaid Services

Managed care and fee-for-service (FFS) are two possible models that states use to deliver benefits under their Medicaid programs. Most states provide a combination of these two delivery models, which offer different financial incentives.

Nationally, more than half of Medicaid beneficiaries are enrolled in a managed care plan. States contract with MCOs to provide a specific set of Medicaid-covered services to beneficiaries, and MCOs are expected to report encounter data to state Medicaid programs that allow the Medicaid administrators to track the services received by enrolled beneficiaries. The state pays the MCO a predetermined amount per beneficiary per month—known as capitation—and, in turn, the MCO pays providers for their services. According to CMS, by contracting with various types of Medicaid MCOs to deliver services, states can reduce program costs and better manage utilization of health care services. However, since MCOs receive a fixed amount per beneficiary regardless of the number of services used, we have noted in our prior work that there may be financial incentives for MCOs to limit access to services, potentially compromising quality of care and leading to underutilization of services.[10]

[10]See GAO, *Medicaid: Assessment of Variation among States in Per-Enrollee Spending*, GAO-14-456 (Washington, D.C.: June 16, 2014).

Historically, most Medicaid programs relied on a FFS delivery model. Under the FFS model, states pay providers directly for each service provided to a Medicaid beneficiary and the data included on a Medicaid FFS claim includes a specific amount for services delivered to a beneficiary. Certain states continue to use the FFS model to provide Medicaid services, such as behavioral health and dental care. We have noted in our prior work that, unlike managed care, the FFS model may give providers an incentive to use more services than necessary.[11]

Efforts to Analyze Utilization Using Medicaid Encounter Data

Despite the fact that states have been required to submit encounter data to CMS since 1999,[12] little is known about the utilization of services by Medicaid beneficiaries in MCOs. Historically, encounter data have been relatively incomplete and unreliable; thus, little is known about these data. At the behest of CMS, Mathematica Policy Research published a number of studies focused primarily on the usability and completeness of 2007-2010 Medicaid encounter data, as reported in MAX. These studies first reported that encounter data were suitable for research purposes in 2012.[13]

CMS has provided guidance to states on methods to improve the completeness and accuracy of encounter data.[14] In 2012, CMS released a protocol for validating Medicaid encounter data that states receive from MCOs. The protocol specifies a procedure for assessing the completeness and accuracy of encounter data that Medicaid MCOs are

[11]See GAO, *Medicare: Private Sector Initiatives to Bundle Hospital and Physician Payments for an Episode of Care*, GAO-11-126R (Washington, D.C.: Jan. 31, 2011).

[12]The Balanced Budget Act of 1997 required states to submit detailed individual enrollee encounter data to CMS as a condition of receiving federal reimbursement for mechanized claims processing systems. Pub. L. No. 105-33, § 4753, 111 Stat. 251, 525 (1997) (codified at 42 U.S.C. § 1396b(r)(1)(F)).

[13]Studies using data prior to 2009 have raised questions regarding the accuracy and completeness of encounter data or avoided using encounter data. See The Lewin Group, General Dynamics, *Evaluating Emergency Department Utilization: For Researchers using the Centers for Medicare & Medicaid Services Chronic Condition Data Warehouse* (Falls Church, VA.: May 2012); and *Medicaid Enrollees' Utilization of Ambulatory Care Services For Researchers using the Centers for Medicare & Medicaid Services' Chronic Condition Data Warehouse* (Falls Church, VA.: Sept. 2012).

[14]See GAO, *Medicare Advantage: CMS Should Fully Develop Plans for Encounter Data and Assess Data Quality before Use*, GAO-14-571 (Washington, D.C.: July 31, 2014).

required to submit. Additionally, PPACA strengthened the requirement that Medicaid MCOs provide encounter data to states by withholding federal matching payments from states that do not report encounter data to CMS in a timely manner.[15]

Factors Affecting Medicaid Managed Care Service Utilization

The service utilization patterns of beneficiaries enrolled in Medicaid managed care plans can vary substantially and be related to a variety of factors, including the characteristics of beneficiaries and the scope of state Medicaid benefits offered.[16]

- **Beneficiary participation in managed care**: States vary in the populations enrolled in managed care plans. States that enroll their most medically needy beneficiaries into managed care plans are likely to have higher service utilization. Conversely, states that enroll broader, generally healthier populations—such as children—into managed care plans are likely to have a larger pool of beneficiaries and potentially lower service utilization.
- **The amount, duration, and scope of services covered by MCOs**: Consistent with federal requirements, a state may determine the amount, duration, and the scope of benefits covered in their Medicaid programs.[17] Thus, variations in service utilization patterns could reflect states' benefit choices that are independent of their service delivery choices.
- **Variation in Medicaid managed care payments**: Medicaid MCO payments to providers for specific services vary substantially across states and this variation could affect the service utilization of beneficiaries. Specifically, we previously reported that in 23 states where we compared MCO and private insurance payments for E/M services, managed care payments were 31 to 65 percent lower in 18 states.[18]

[15]Pub. L. No. 111-148, §§ 6402(c), 6504(b), 124 Stat. 119, 757, 777 (2010) (codified at 42 U.S.C. §§ 1396b(i)(25), (m)(2)(A)(xi)).

[16]See GAO-14-456 and *Medicaid Payment: Comparisons of Selected Services under Fee-for-Service, Managed Care, and Private Insurance,* GAO-14-533 (Washington, D.C.: Jul 15, 2014).

[17]State Medicaid programs are required to cover certain "mandatory benefits," and can choose to provide other "optional benefits."

[18]See GAO-14-533.

- **Access to Providers**: Access to providers who serve beneficiaries enrolled in Medicaid managed care plans can vary substantially within a state, such as between urban and rural areas, and also across states.[19] Geographic variation in provider access, which can be driven by the breadth of an MCO's network and the availability of providers in a given geographic area, can affect the type and amount of services used by beneficiaries.

Beneficiaries' Service Utilization Varied by State, Population, Service Categories, and Length of Enrollment for Selected States

Based on our analysis of encounter data, the number of professional services utilized by adult and child beneficiaries per year in the 19 selected states ranged widely, with adult beneficiaries typically receiving more services. States also varied in how adult and child service utilization for professional services were distributed across service categories, and by whether beneficiaries were enrolled in comprehensive managed care plans for all of 2010 or part of the year.

A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Adult Service Utilization Ranged from 13 to 55 Services per Beneficiary per Year in Selected States

For the 19 selected states, the number of services per beneficiary per year for adults ranged from about 13 to 55 services per beneficiary per year.[20] (See fig. 1.) Services used by adult beneficiaries included E/M services, such as office visits and emergency room and critical care services; procedural services, such as surgery and ophthalmology; ancillary services, such as pathology and lab services and anesthesiology; and other professional services, such as oxygen therapy and hospital-mandated on-call service. Service utilization levels for adult beneficiaries are affected by many factors, including the extent to which they receive services on a FFS basis. Among the states in our analysis, the percentage of professional services that adult beneficiaries received

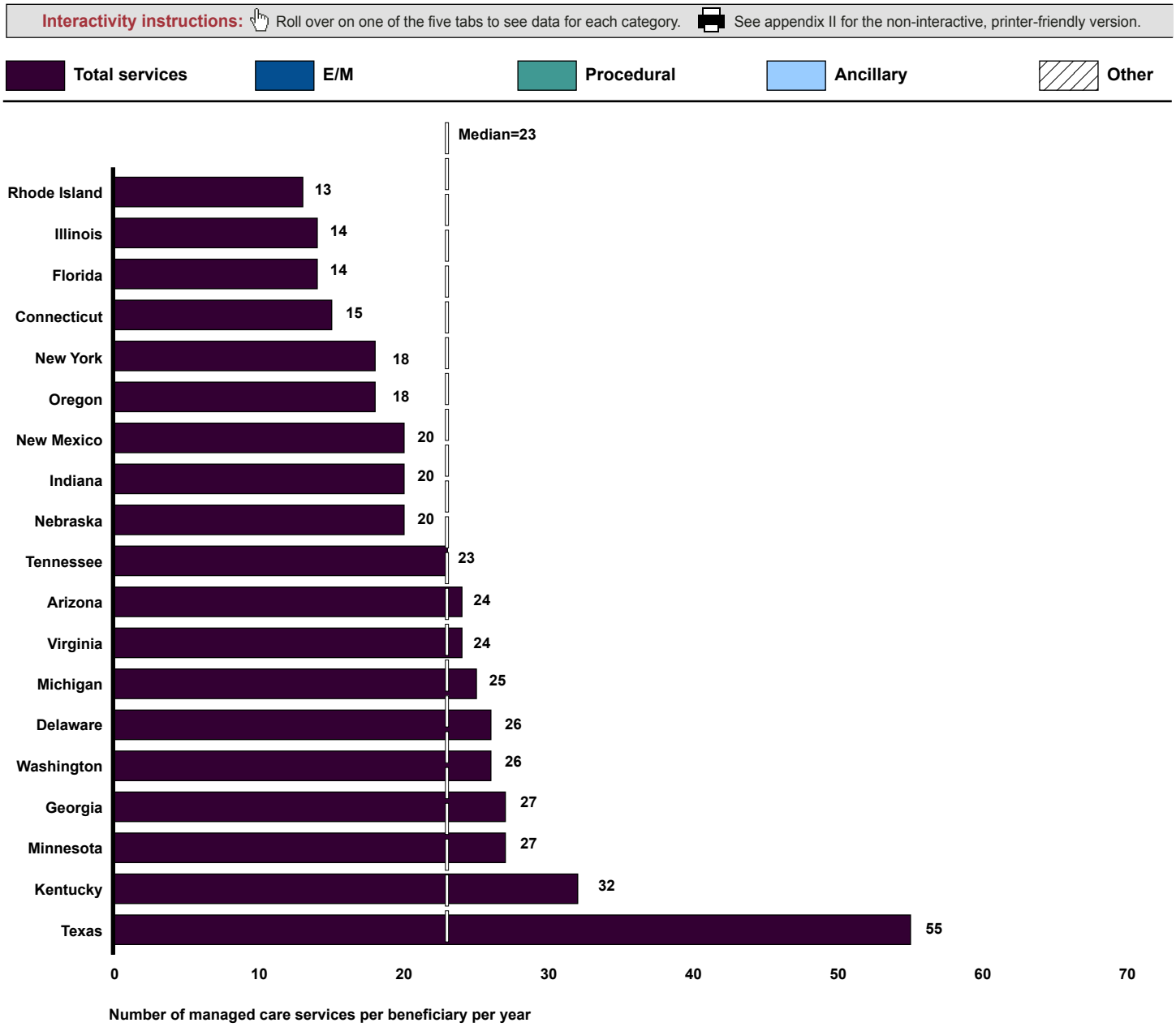
[19]Variation in access to providers can also occur for beneficiaries who receive services on a FFS basis.

[20]See http://www.gao.gov/products/GAO-15-481 for the percentage of adult beneficiaries in each state who used at least one professional service and for the number of services they used.

on a FFS basis ranged from 0 to about 11 percent, with a median of 1 percent.[21]

[21]See http://www.gao.gov/products/GAO-15-481 for further detail on the number and percentage of professional services adult beneficiaries in comprehensive managed care received on a FFS basis by state.

Figure 1: Adult Professional Service Utilization in Selected States, 2010



Source: GAO analysis of Medicaid Analytic eXtract for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management (E/M) services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest whole number except for the other professional services category. The percentages of total services in each state attributable to specific service categories were calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Service utilization among adults was concentrated primarily in the ancillary and E/M categories. Specifically, ancillary services were the largest category in all but one state and accounted for 53 percent, on average, of all services utilized by adult beneficiaries across selected states. E/M services made up the second largest category (27 percent), followed by procedural services (15 percent) and, lastly, other professional services (4 percent). However, states varied considerably in how service utilization was distributed within service categories, as was shown in figure 1.

- **Ancillary**: Of total services, adult per beneficiary utilization of ancillary services ranged from 37 percent in Rhode Island to 65 percent in Washington and Illinois—a difference of about 28 percentage points. Pathology/lab services accounted for 63 percent, on average, of all ancillary service utilization across selected states.
- **E/M**: Of total services, adult per beneficiary utilization of E/M services ranged from 19 percent in Connecticut to 38 percent in Rhode Island—a difference of 19 percentage points. Office visits accounted for 68 percent on average, of E/M service utilization, while emergency room and critical care services accounted for 16 percent, on average.
- **Procedural**: Of total services, adult per beneficiary utilization of procedural services ranged from 8 percent in Illinois to 23 percent in Indiana—a difference of about 15 percentage points. Surgical services accounted for the largest portion—36 percent, on average—of all procedural service utilization across selected states.
- **Other professional services**: Of total services, adult per beneficiary utilization of other professional services ranged from 1 percent in Illinois, Kentucky, Nebraska, and Washington to 15 percent in Arizona—a difference of about 15 percentage points.

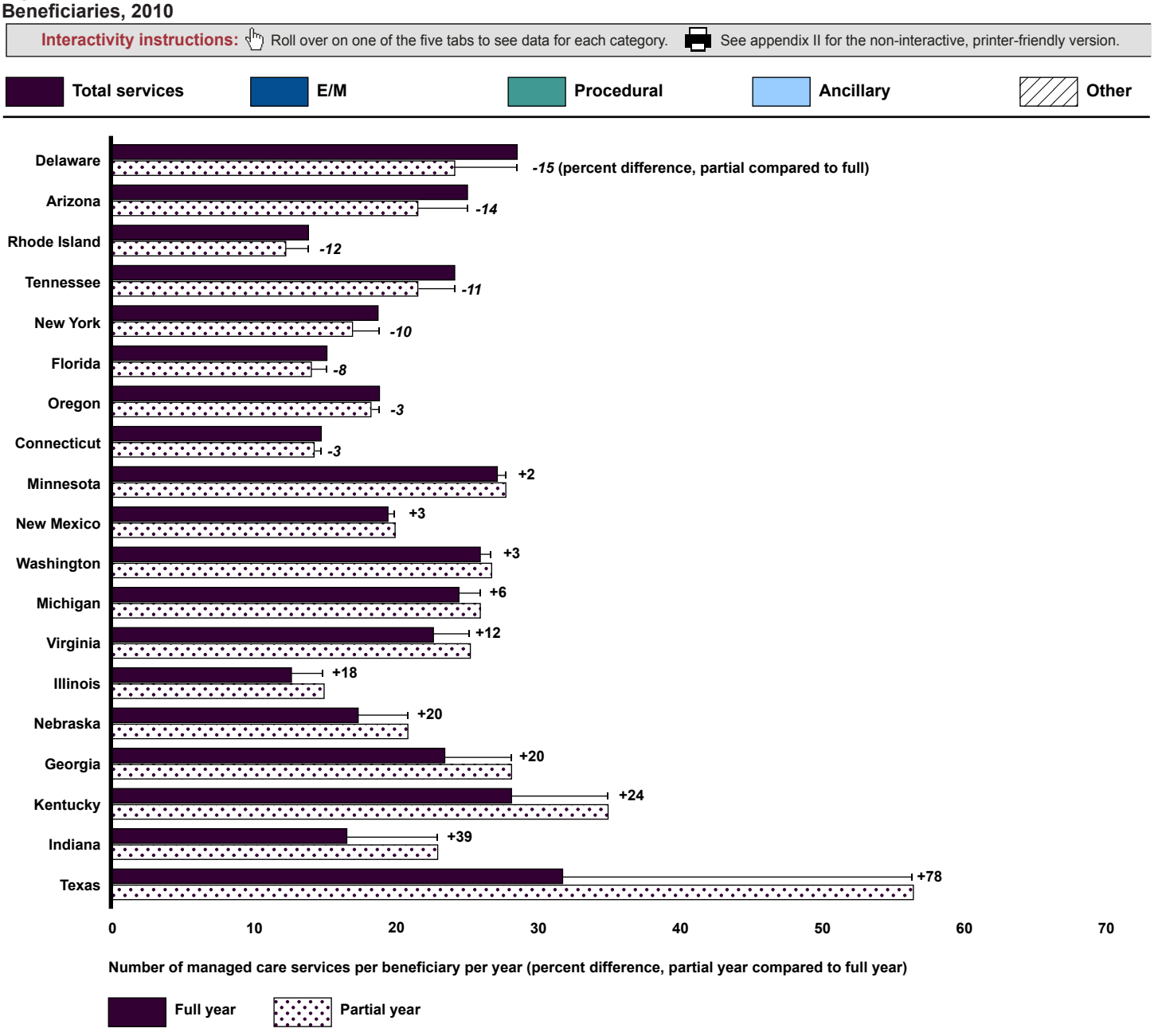
For slightly more than half of the selected states, total service utilization among adults was higher for partial-year beneficiaries—those in comprehensive managed care plans for less than the full-year of 2010.[22] Specifically, in 11 of the 19 states, the number of services utilized per year ranged from 2 to 78 percent higher for partial-year beneficiaries than for full-year beneficiaries. In the remaining 8 states, service utilization for partial-year beneficiaries was 3 to 15 percent lower than for full-year

[22]The percentage of partial-year adult beneficiaries varied considerably across selected states. See appendix III for more detail.

beneficiaries. Of the states that had comparatively higher service utilization for partial-year beneficiaries, there were generally no major differences in service utilization among partial-year beneficiaries based on the length of their enrollment. Specifically, partial-year beneficiaries who were enrolled for 1 to 3 months, 4 to 6 months, or 7 to 11 months generally had similarly high utilization rates.

Further, we found that partial-year adult beneficiaries utilized more procedural and ancillary services than full-year beneficiaries in about two-thirds of the selected states. Among those states, partial-year adult beneficiaries used 19 and 26 percent more of these services, respectively, than full-year adult beneficiaries. (See fig. 2.)

Figure 2: Adult Professional Service Utilization in Selected States, Partial Year Beneficiaries Compared with Full Year Beneficiaries, 2010



Source: GAO analysis of Medicaid Analytic eXtract for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. Partial-year beneficiaries are defined as those enrolled in a comprehensive managed care plan in calendar year 2010 for a period of less than 12 months. We weighted our results by the number of months each beneficiary was enrolled in comprehensive managed care in calendar year 2010 to account for beneficiaries who may have been enrolled for only part of the year. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management (E/M) services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest tenth except for the other professional services category. The percent difference for each state was calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

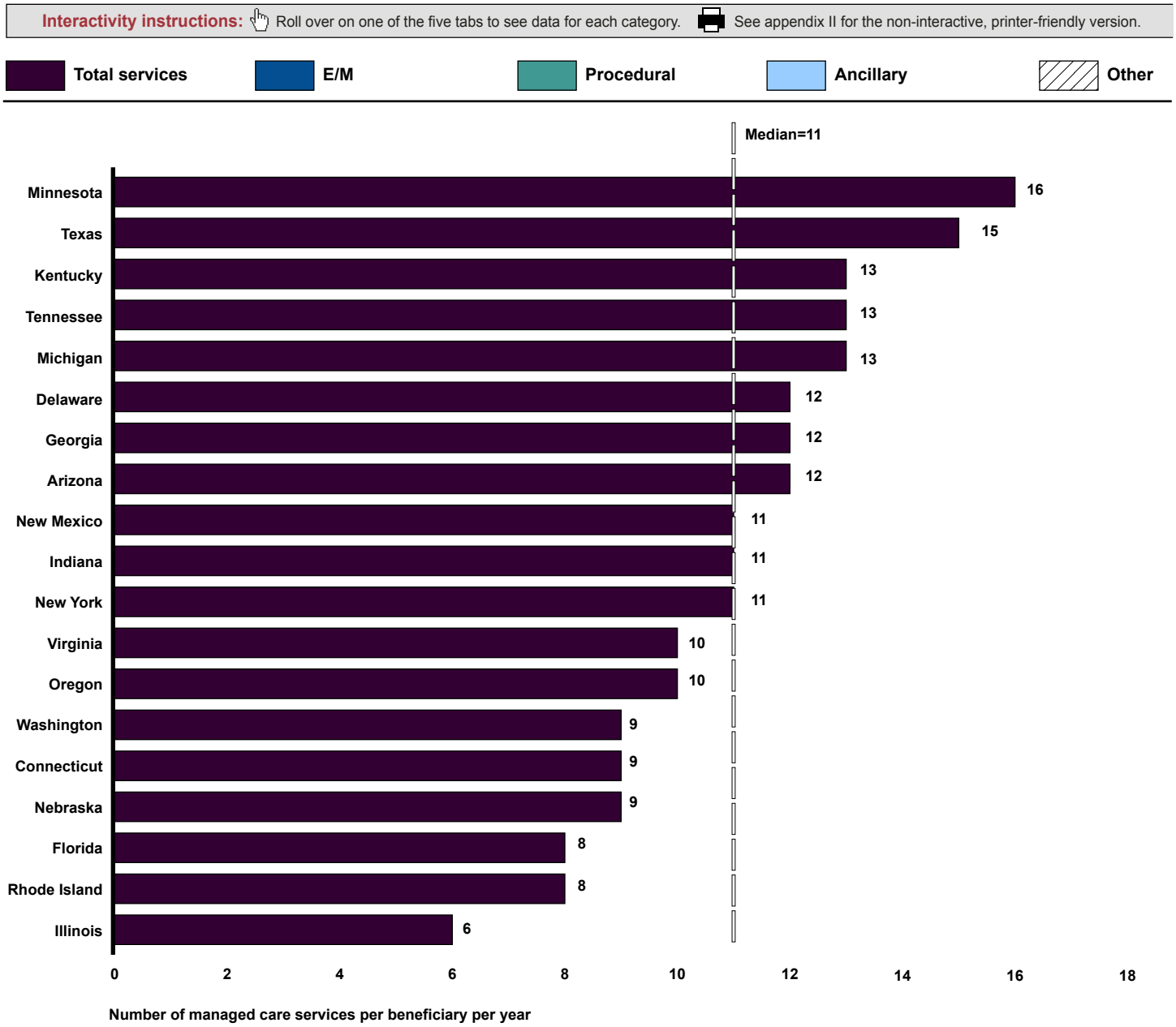
Child Service Utilization Ranged from 6 to 16 Services per Beneficiary per Year in Selected States, and was Significantly Higher for Partial-Year Beneficiaries

The utilization of professional services by children was generally lower than adults in selected states. In the 19 selected states, the number of services per beneficiary per year for children ranged from about 6 to 16.[23] (See fig. 3.) Services used by child beneficiaries included E/M services, such as office visits and emergency room and critical care services; procedural services, such as surgery and ophthalmology; ancillary services, such as pathology and lab services and anesthesiology; and other professional services, such as oxygen therapy and hospital-mandated on-call service. Service utilization for child beneficiaries is affected by many factors, including the extent to which beneficiaries receive services on a FFS basis. Among selected states, the percentage of professional services that child beneficiaries received on a FFS basis ranged from 0 to about 29 percent, with a median of 9 percent.[24]

[23]See http://www.gao.gov/products/GAO-15-481 for the percentage of child beneficiaries in each state who used at least one professional service and the number of services used among beneficiaries who used services.

[24]See http://www.gao.gov/products/GAO-15-481 for further detail on the number and percentage of professional services child beneficiaries in comprehensive managed care received on a FFS basis by state.

Figure 3: Child Professional Service Utilization in Selected States, 2010



Source: GAO analysis of Medicaid Analytic eXtract for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management (E/M) services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest whole number except for the other professional services category. The percentages of total services in each state attributable to specific service categories were calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

In contrast to adults, for which service utilization consisted mostly of ancillary services, utilization for children was distributed more evenly across service categories. For example, on average, E/M services were utilized most commonly by children (37 percent of services), followed by procedural services (33 percent), ancillary services (24 percent), and other professional services (5 percent). However, considerable state variation existed within service categories, as was shown in figure 3.

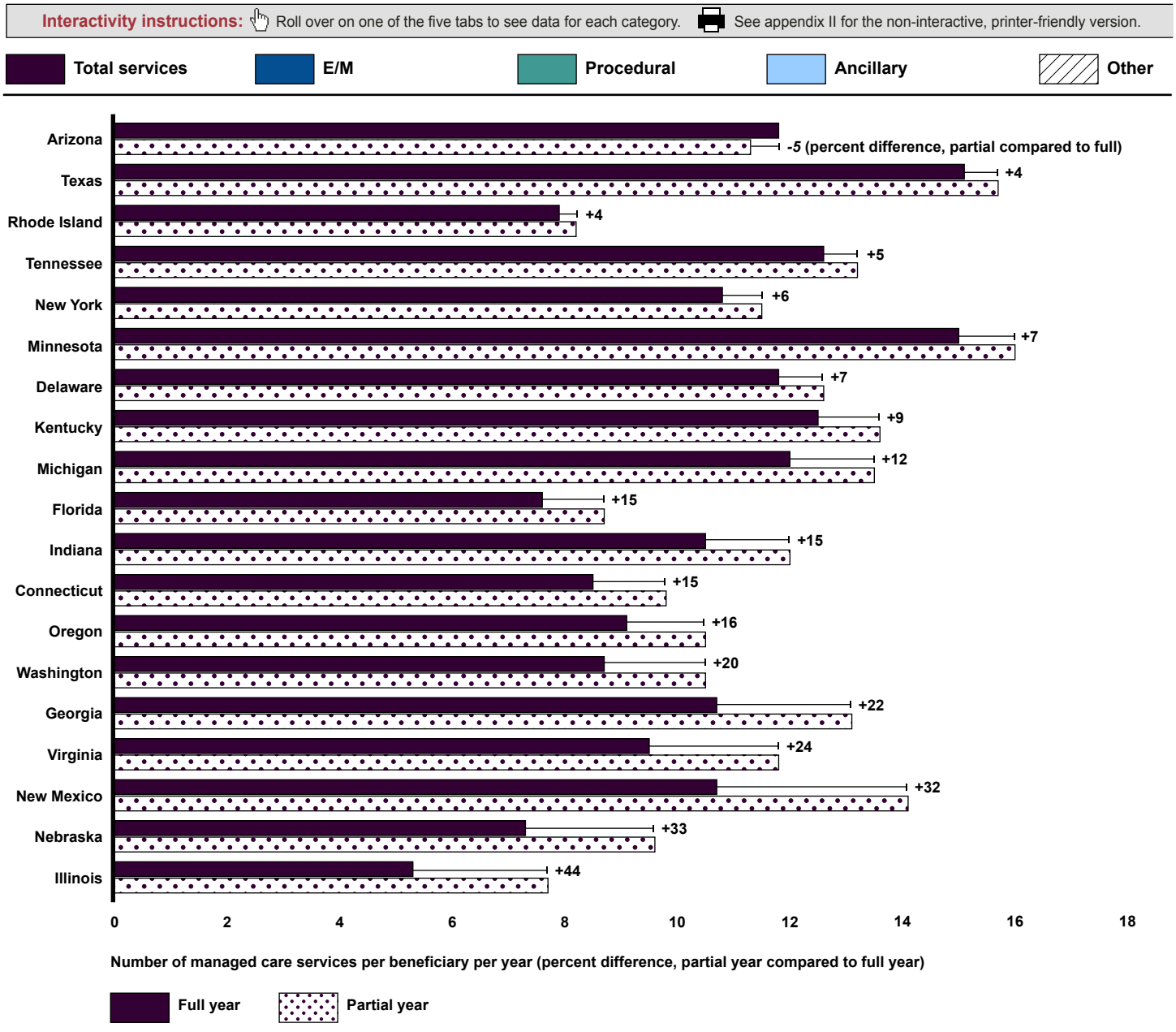
- **E/M**: Of total services, child per beneficiary utilization of E/M services ranged from 29 percent in Minnesota to 45 percent in Georgia and Rhode Island—a difference of 16 percentage points. On average, office visits (58 percent) and preventive visits (22 percent) comprised most E/M service utilization across selected states.
- **Procedural**: Of total services, child per beneficiary utilization of procedural services ranged from 25 percent in Arizona to 41 percent in Oregon and Texas—a difference of 16 percentage points. On average, immunizations and injections (60 percent) made up the majority of procedural service utilization across selected states.
- **Ancillary**: Of total services, child per beneficiary utilization of ancillary services ranged from 17 percent in Oregon to 36 percent in Illinois—a difference of 19 percentage points. On average, pathology and lab services (63 percent) made up the majority of ancillary service utilization across selected states.
- **Other professional services**: Of total services, child per beneficiary utilization of other professional services ranged from 1 percent in Georgia, Illinois, and New York to 21 percent in Arizona—a difference of 20 percentage points.

Total service utilization among children was higher for partial-year beneficiaries—those enrolled in comprehensive managed care for less than the full year of 2010—than full-year beneficiaries for almost every selected state.[25] For example, for all but one state, the number of services utilized per year was 4 to 44 percent higher for partial-year child beneficiaries than for full-year child beneficiaries. In the remaining state, the number of services utilized per year for partial-year child beneficiaries was 5 percent less than for full-year child beneficiaries.

[25]The percentage of partial-year child beneficiaries varied considerably across selected states. See appendix III for more detail.

Further, partial-year child beneficiaries utilized more E/M and procedural services than full-year child beneficiaries across all selected states; specifically, partial-year child beneficiaries utilized 19 percent more E/M services and 22 percent more procedural services than full-year child beneficiaries. (See fig. 4.)

Figure 4: Child Professional Service Utilization in Selected States, Partial Year Beneficiaries Compared with Full Year Beneficiaries, 2010



Source: GAO analysis of Medicaid Analytic eXtract for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. Partial-year beneficiaries are defined as those enrolled in a comprehensive managed care plan in calendar year 2010 for a period of less than 12 months. We weighted our results by the number of months each beneficiary was enrolled in comprehensive managed care in calendar year 2010 to account for beneficiaries who may have been enrolled for only part of the year. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management (E/M) services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest tenth except for the other professional services category. The percent difference for each state was calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Among selected states with higher utilization for partial-year child beneficiaries, most experienced the highest utilization for child beneficiaries who were enrolled for 1 to 3 months as compared with 4 to 6 months or 7 to 11 months. When compared with full-year child beneficiaries, partial-year child beneficiaries enrolled for 1 to 3 months utilized, on average, significantly more E/M and procedural services (61 percent and 34 percent, respectively). Furthermore, the increased utilization among child beneficiaries enrolled for 1 to 3 months was particularly pronounced for certain E/M, procedural, and ancillary services. We found the following examples:

- **Inpatient visits**: Across all selected states, utilization of inpatient visits ranged from 1.4 to over 15 times greater for child beneficiaries enrolled for 1 to 3 months than for full-year child beneficiaries.
- **Preventive services**: For all but one selected state, utilization of preventive visits ranged from 1.5 to almost 4 times greater for child beneficiaries enrolled for 1 to 3 months than for full-year child beneficiaries.
- **Emergency room and critical care**: For all but one selected state, utilization of emergency room and critical care services ranged from 1.2 to almost 3 times greater among child beneficiaries enrolled for 1 to 3 months than for full-year child beneficiaries.
- **Surgery**: For all but one selected state, utilization of surgery ranged from 1 to 2.5 times greater for child beneficiaries enrolled for 1 to 3 months than for full-year child beneficiaries.
- **Radiology**: Across all selected states, utilization of radiology ranged from 1.2 to 2.5 times greater for child beneficiaries enrolled for 1 to 3 months than for full-year child beneficiaries.

Agency Comments

We provided the Secretary of Health and Human Services with a draft of this report. The Department of Health and Human Services provided technical comments, which we incorporated as appropriate.

As arranged with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days after its issuance date. At that time, we will send copies of this report to the Secretary of Health and Human Services. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staffs have any questions about this report, please contact me at (202) 512-7114 or yocomc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff members who made major contributions to this report are listed in appendix IV.

Sincerely yours,

Carolyn L. Yocom
Director, Health Care

Appendix I: Detailed Scope and Methodology

We examined service utilization patterns for Medicaid beneficiaries enrolled in comprehensive managed care plans using Medicaid Analytic eXtract (MAX) encounter data for calendar year 2010,[1] the most recent year for which encounter data were available for the majority of states at the time we began our analyses.[2] Our analysis consisted of the following three steps: (1) state selection, which included assessing data reliability for our selected states; (2) beneficiary and service identification; and (3) utilization calculation. Lastly, we present limitations of this study and technical comments that we received from 13 of the 19 selected states.

Step 1: State Selection

To assess the reliability and usability of the MAX data for our purposes, we reviewed related documentation and studies that assessed the reliability of or analyzed MAX data, and we interviewed officials from the Centers for Medicare & Medicaid Services (CMS) and its contractor responsible for processing the MAX data (Mathematica Policy Research, Inc.).[3] We determined that 19 states reported data that were reliable for our purposes: Arizona, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Michigan, Minnesota, Nebraska, New Mexico, New

[1]We obtained MAX data from the Centers for Medicare & Medicaid Services (CMS) in November 2013.

[2]The MAX data files for each state contain information on Medicaid eligibility, service utilization, and payment for each Medicaid beneficiary during a given calendar year. These files are derived from each state's Medicaid Statistical Information System (MSIS) data files and have been processed by CMS's contractor into a research friendly format. MAX includes five files: a Person Summary—PS—file, which contains one record for every individual enrolled for at least one day during the year as well as demographic data (e.g. date of birth, gender, race), basis of eligibility, and monthly enrollment status; and four claims files. The four claims files—Inpatient, Institutional Long-Term Care, Prescription Drug, and Other Services—OT—include claims and managed care service (also known as encounters) data for Medicaid beneficiaries in a given calendar year within a state.

[3]See Mathematica Policy Research, *Medicaid Policy Brief: Assessing the Usability of MAX 2008 Encounter Data for Enrollees in Comprehensive Managed Care 2008*, Brief 7 (Washington, D.C.: July 2012); *Medicaid Policy Brief: Assessing the Usability of Encounter Data for Enrollees in Comprehensive Managed Care Across MAX 2007–2009,* Brief 15 (Washington, D.C.: December 2012); *Medicaid Analytic eXtract 2008 Encounter Data Chartbook* (Washington, D.C.: 2013); *The Medicaid Analytic eXtract 2010 Chartbook (Washington, D.C.:* 2014); and *Medicaid Policy Brief: The Availability and Usability of Behavioral Health Organization Encounter Data in MAX 2009*, Brief 14 (Washington, D.C.: July 2013).

York, Oregon, Rhode Island, Tennessee, Texas, Virginia, and Washington.[4]

We excluded the remaining 31 states and the District of Columbia because we determined their data were unreliable or not usable for our purposes for one or more of the following reasons: (1) no adults or children were enrolled in comprehensive managed care plans, according to MAX (13 states); (2) MAX data were unavailable at the time we began our analysis (11 states); (3) the data were unreliable, such as if fewer than 30 percent of beneficiaries used at least one service—one of the thresholds established by Mathematica when evaluating the completeness and usability of MAX data (6 states); and (4) services were not reported using a standard coding convention, namely the Health Care Common Procedural Coding System (HCPCS) (2 states).[5] (See table 1.)

[4]We also solicited input from representatives of these states on the accuracy of the MAX data we analyzed. See state technical comments later described in this appendix. In addition, for these states, we excluded duplicate records in the MAX data files that could lead to an overcounting of services.

[5]The majority of states report services using HCPCS.

Table 1: States Included in Our Analysis and Reasons for State Exclusions

State	Included in analysis	Excluded from analysis	Reasons for Exclusion			
			No adults or children enrolled	Unavailable data	Unreliable data	Lacked standard coding
Alabama			✓			
Alaska		✓	✓			
Arizona	✓					
Arkansas		✓	✓			
California[c]		✓			✓	
Colorado[b]		✓			✓	
Connecticut	✓					
Delaware	✓					
District of Columbia[a,f]		✓		✓		
Florida	✓					
Georgia	✓					
Hawaii[d]		✓				✓
Idaho[a]		✓		✓		
Illinois	✓					
Indiana	✓					
Iowa		✓	✓			
Kansas[a]		✓		✓		
Kentucky	✓					
Louisiana		✓	✓			
Maine[a]		✓		✓		
Maryland[d]		✓				✓
Massachusetts[a]		✓		✓		
Michigan	✓					
Minnesota	✓					
Mississippi		✓	✓			
Missouri[a]		✓		✓		
Montana[e]		✓	✓			
Nebraska	✓					
Nevada[a]		✓		✓		
New Hampshire		✓	✓			
New Jersey[a]		✓		✓		
New Mexico	✓					
New York	✓					
North Carolina		✓	✓			

State	Included in analysis	Excluded from analysis	Reasons for Exclusion			
			No adults or children enrolled	Unavailable data	Unreliable data	Lacked standard coding
North Dakota[a]		✓		✓		
Ohio[b]		✓			✓	
Oklahoma		✓	✓			
Oregon	✓					
Pennsylvania[b]		✓			✓	
Rhode Island	✓					
South Carolina[b]		✓			✓	
South Dakota		✓	✓			
Tennessee	✓					
Texas	✓					
Utah[a]		✓		✓		
Vermont		✓	✓			
Virginia	✓					
Washington	✓					
West Virginia[b]		✓			✓	
Wisconsin[a]		✓		✓		
Wyoming		✓	✓			
Total	**19**	**32**	**13**	**11**	**6**	**2**

Source: GAO analysis of Centers for Medicare & Medicaid Services (CMS) and Medicaid Analytic eXtract data. | GAO-15-481

[a]State was not included in the November 2013 MAX data.

[b]We determined that data submitted by Colorado, Ohio, Pennsylvania, South Carolina, and West Virginia were unreliable because these states reported that fewer than 30 percent of beneficiaries enrolled in comprehensive managed care plans received managed care services.

[c]California was excluded from the analysis because both the state and CMS's contractor expressed specific concerns about the unreliability of the state's 2010 managed care data.

[d]Hawaii and Maryland did not report services using a five-digit Health Care Common Procedural Coding System code.

[e]While Montana had a small number of adults in comprehensive managed care plans, the state was excluded because its beneficiaries did not meet our beneficiary inclusion criteria of receiving full Medicaid benefits and not having other sources of health coverage.

[f]For the purpose of this table, the District of Columbia is counted as a state.

Step 2: Beneficiary and Service Identification

Based on eligibility information in the MAX Person Summary file,[6] we restricted our study to adults and children who (1) were eligible to receive full Medicaid benefits and were enrolled for any given month during calendar year 2010, and (2) did not have other sources of health coverage during the calendar year in addition to Medicaid, such as coverage from Medicare or private insurance.[7] Our analysis accounted for 95 percent of the adults and children in comprehensive managed care among the 19 states in our analysis in 2010.

We used the MAX Other Services file to identify professional services used by beneficiaries while they were enrolled in a comprehensive managed care plan. We, in large part, used the Health Care Cost Institute's methodology for grouping professional services based on a range of HCPCS codes. These codes are used by providers to bill for professional services.[8] We grouped the professional services in our analysis into four broad categories. (See table 2.)

[6]We used the MAX Basis of Eligibility variable to determine whether beneficiaries were full benefit adults or children.

[7]For example, we excluded individuals that do not receive full Medicaid coverage, such as undocumented individuals who are eligible for emergency services only, individuals who receive only family planning services, and those who receive only premium assistance for the purchase of private insurance.

[8]See Health Care Cost Institute, *Health Care Cost and Utilization Report: 2010* (Washington, D.C.: May 2012).

Table 2: Professional Service Categories and Related Procedure Codes Included in the Analysis

Professional Service Category	Subcategories	Related procedure codes
Evaluation and management	Consultations	99241–99255
	Emergency room/critical care	99281–99292, 99466–99476
	Inpatient visits	99217–99239, 99304–99340, 99477, 99478–99480
	Office visits	99201–99215, 99341–99350
	Preventive visits	99381–99387, 99391–99429, 99460–99464
	Other evaluation and management	90951-90970; 92605, 92607, 92608, 95251, 96004; 96150 -96151; 98966-98969; 99024; 99354-99360; 99363-99380; 99441-99444; 99450-99456, 99499; 99605-99607
Procedural	Administered drugs, including chemo drugs	J0000–J9999
	Allergy	95004–95075, 95115–95199
	Cardiovascular	92950–93352, 93501–93581, 93600-93799, 93875–93990
	Immunizations/injections	90281–90749, 96360–96379, G0008–G0010
	Ophthalmology	92002–92499, V2020–V2799
	Surgery	10021–69990 excluding 36415–36416; 0016T–0222T
	Other procedural	90935 – 90947; 90989-90999; 91000-91299; 92502—92604, 92606; 92609-92633; 92640, 92700; 94002-94799; 95250; 95803-96003, 96020-96125; 96152-96155; 96401-96571; 96900-96999; 98960-98962; 99143-99199; 99465
Ancillary	Anesthesia	00100–02020, 99100–99140
	Pathology/lab	80047–89398, P2028–P9615, ATP02-ATP22
	Physical medicine	97001–98943
	Radiology	70010–79999, R0070–R0076
	Other ancillary	36415–36416; 99000-99002
Other professional services	Includes services and items, such as oxygen therapy, durable medical equipment, and prosthetic devices.	B4034–B9999, C1300–C9899, G0027–G9142, M0064–M0301, Q0035–Q9968, S0012–S9999, T1000–T5999, V5008–V5299, V5336–V5364, W0000–ZZZZZ; 99026-99091

Source: GAO analysis of the 2010 Healthcare Common Procedural Coding System and Health Care Cost and Utilization Report: 2010. Health Care Cost Institute (2012). | GAO-15-481

We excluded dental and behavioral health services from our analysis because these services may be contracted out by managed care organizations (MCO) and provided on a fee-for-service (FFS) basis. Additionally, Mathematica reported concerns regarding the quality of managed care behavioral health data.[9]

Step 3: Utilization Calculation

For each service provided to each beneficiary described in steps 1 and 2 above, we calculated the number of services per beneficiary per year. This is defined as the number of services that beneficiaries enrolled in comprehensive managed care plans used in a year (includes users and nonusers enrolled in comprehensive managed care plans within the state).[10]

The number of services per beneficiary, per year is calculated as follows:

$$\left[\frac{Total\ number\ of managed\ care\ professional\ services}{Number\ of\ managed\ care\ beneficiary\ months\ of\ enrollment\ in\ the\ state,2010}\right] \times 12$$

We presented service utilization patterns for adults and children by state, by service category, and by the length of beneficiary enrollment—in particular, whether beneficiaries were enrolled in a comprehensive managed care plan for a full or partial year. We then further grouped partial-year beneficiaries into monthly increments—1-3, 4-6, and 7-11 months—to determine whether there were differences in utilization patterns by the varying lengths of enrollment.

[9]A Mathematica study indicated that encounter data on behavioral health services are often incomplete and unreliable. See Mathematica Policy Research, *Medicaid Policy Brief: The Availability and Usability of Behavioral Health Organization Encounter Data in MAX 2009*, Brief 14 (Washington, D.C.: July 2013).

[10]When calculating utilization, we weighted our results by the number of months each beneficiary was enrolled in comprehensive managed care in calendar year 2010 to account for beneficiaries who may have been enrolled for only part of the year. While our beneficiary population was comprised of individuals enrolled in comprehensive managed care plans, our utilization analysis included all state-reported encounters for the services we reviewed, regardless of whether they were provided through a comprehensive managed care plan or other types of managed care.

Services per beneficiary, per year is the product of two additional measures:

1. User Rate: the percent of beneficiaries who used at least one service in a year, is calculated as follows:

$$\left[\frac{Total\ number\ of\ months\ for\ beneficiaries\ with\ at\ least\ one\ service}{Total\ months\ of\ managed\ care\ beneficiary\ enrollment\ in\ the\ state,2010}\right] \times 12$$

2. Services per user, per year: the number of services used, calculated among service users. The number of services per user, per year is calculated as follows:

$$\left[\frac{Total\ number\ of\ managed\ care\ professional\ services}{Number\ of\ user\ months\ of\ managed\ care\ enrollment\ in\ the\ state,2010}\right] \times 12$$

In addition to services used by beneficiaries enrolled in a comprehensive managed care plan, we also calculated the extent to which the beneficiaries in our analysis received professional services paid on a FFS basis while they were enrolled in a comprehensive managed care plan.

See http://www.gao.gov/products/GAO-15-481 for further detail on these measures and the FFS data.

Study Limitations and State Technical Comments

The results we present are based on data reported to CMS by the 19 states in our analysis. We did not independently verify whether the individual MCOs in these states submitted complete and accurate data on the enrollment and services for beneficiaries enrolled in comprehensive managed care.

To better understand the factors that may affect service utilization, we asked representatives from each state to comment on the accuracy and completeness of the state's 2010 managed care data submitted to CMS.[11] Thirteen of the 19 selected states responded to our request.[12] These states met our criteria for inclusion, as well as the minimum threshold for the number of services per adult or child beneficiary used by

[11]States submit data to CMS through MSIS. Each state's MSIS data files have been processed by CMS's contractor into MAX's more research-friendly format.

[12]The states that did not respond to our request are Connecticut, Georgia, Minnesota, New Mexico, Oregon, and Rhode Island.

Mathematica to assess the completeness of each state's data.[13] Nevertheless, of these 13 states, 4 states indicated that they may have submitted incomplete enrollment or encounter data in 2010, citing a variety of reasons.[14] For example, 1 state indicated its Medicaid managed care program was in the process of major changes and service data were likely not complete. Another state indicated that, in calendar year 2010, some of the state's managed care data were not reported due to quality problems. Officials from the remaining 9 states noted their results either seemed reasonable based on their knowledge of their state's Medicaid managed care program or that the managed care data they submitted to CMS for 2010 was believed to be accurate.

The results we present for the 19 states in our analysis are not representative of all states and their managed care programs, nor do our results draw any conclusions regarding whether the level of service utilization identified is appropriate. There are a number of state-specific factors—such as differences in beneficiary health status and provider supply—that could contribute to variation in service utilization across the states. For example, officials from 1 state noted that the state's MCOs were limited to certain geographical areas of the state. As such, geographic variation in provider access, which can be driven by the breadth of an MCO's network and the availability of providers in a given geographic area, can affect the type and amount of services used by beneficiaries in Medicaid managed care.

[13]All 19 states included in our analysis also met Mathematica's quality measure of having a complete procedure code. Mathematica's four remaining quality measures did not directly affect our analysis.

[14]The states that indicated they may have submitted incomplete data are Delaware, Florida, Illinois, and Nebraska.

Appendix II: Service Utilization Patterns for Beneficiaries in Comprehensive Managed Care, 2010

The tables below provide the number of services per beneficiary per year for adults and children by state, service category, and length of enrollment.

Based on our analysis of encounter data, the number of professional services utilized per beneficiary per year reported by the 19 selected states for adults enrolled in comprehensive managed care plans in 2010 ranged from about 13 to 55; the range for children was generally lower, from about 6 to 16. States varied in how adult and child utilization of professional services were distributed across service categories. In addition, service utilization for both adults and children varied by whether beneficiaries were enrolled in comprehensive managed care plans for all of 2010 or part of the year.[1] In particular, for nearly all states in our analysis, partial-year child beneficiaries utilized significantly more services overall than those enrolled for the full year.

[1]See appendix III for the percentage of partial-year adult and child beneficiaries by state.

Table 3: Adult Professional Service Utilization in Selected States, 2010

State	Total managed care services	Service categories (percent of total managed care services)			
		Evaluation and management	Procedural	Ancillary	Other professional
RI	13	5 (38)	2 (18)	5 (37)	0.9 (7)
IL	14	4 (26)	1 (8)	9 (65)	0.1 (1)
FL	14	4 (25)	2 (11)	9 (62)	0.3 (2)
CT	15	3 (19)	3 (17)	8 (55)	1.3 (9)
NY	18	4 (23)	3 (16)	11 (59)	0.3 (2)
OR	18	6 (32)	3 (17)	9 (49)	0.4 (2)
NM	20	6 (30)	3 (18)	10 (49)	0.7 (4)
IN	20	4 (23)	4 (23)	10 (52)	0.5 (2)
NE	20	6 (31)	4 (21)	9 (47)	0.3 (1)
TN	23	7 (30)	4 (15)	12 (52)	0.7 (3)
AZ	24	7 (29)	3 (13)	10 (43)	3.7 (15)
VA	24	7 (29)	3 (14)	13 (54)	0.6 (2)
MI	25	7 (26)	4 (15)	14 (54)	1.2 (5)
DE	26	8 (32)	4 (14)	12 (45)	2.4 (9)
WA	26	6 (21)	3 (12)	17 (65)	0.3 (1)
GA	27	7 (27)	4 (15)	15 (55)	0.5 (2)
MN	27	6 (22)	5 (20)	14 (52)	1.8 (7)
KY	32	10 (31)	3 (11)	18 (57)	0.3 (1)
TX	55	15 (27)	6 (10)	34 (62)	0.8 (2)
Median	23	6	3	11	0.6

Source: GAO analysis of Medicaid Analytic eXtract data for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest whole number except for the other professional services category. The percentages of total services in each state attributable to specific service categories were calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Table 4: Adult Professional Service Utilization in Selected States, Partial-Year Beneficiaries Compared with Full-Year Beneficiaries, 2010

	Full-year beneficiaries					Partial-year beneficiaries (percent difference)				
State	Total managed care services	Evaluation and management	Procedural	Ancillary	Other professional	Total managed care services	Evaluation and management	Procedural	Ancillary	Other professional
DE	28.5	8.9	3.9	12.8	3.7	24.1 (-15)	7.7 (-14)	3.4 (-14)	11.1 (-13)	1.9 (-33)
AZ	25.0	7.1	3.3	10.8	1.3	21.5 (-14)	6.4 (-10)	2.7 (-17)	8.9 (-18)	3.5 (-7)
RI	13.8	5.3	2.4	5.0	2.9	12.2 (-12)	4.6 (-13)	2.3 (-6)	4.6 (-8)	0.7 (-34)
TN	24.1	7.2	3.8	12.3	0.4	21.5 (-11)	6.1 (-16)	3.2 (-14)	11.6 (-5)	0.6 (-28)
NY	18.7	4.3	3.0	11.1	0.4	16.9 (-10)	4.1 (-5)	2.8 (-7)	9.7 (-12)	0.3 (-6)
FL	15.1	3.8	1.6	9.3	0.1	14.0 (-8)	3.5 (-8)	1.5 (-5)	8.6 (-7)	0.3 (-23)
OR	18.8	6.4	3.1	8.9	0.5	18.2 (-3)	5.3 (-17)	3.2 (4)	9.3 (5)	0.4 (-16)
CT	14.7	2.8	2.5	8.1	0.4	14.2 (-3)	2.6 (-9)	2.5 (2)	7.8 (-3)	1.2 (-2)
MN	27.1	5.8	5.2	14.0	1.2	27.7 (2)	6.1 (5)	5.5 (7)	14.4 (3)	1.7 (-19)
NM	19.4	6.1	3.4	9.3	2.1	19.9 (3)	5.3 (-13)	3.7 (9)	10.2 (10)	0.7 (2)
WA	25.9	6.2	2.9	16.4	0.2	26.7 (3)	5.3 (-14)	3.2 (10)	17.7 (8)	0.3 (-8)
MI	24.4	6.6	3.5	13.1	0.7	25.9 (6)	6.5 (-2)	4.0 (15)	14.1 (7)	1.3 (8)
VA	22.6	6.9	3.0	12.1	0.3	25.2 (12)	7.1 (3)	3.8 (25)	13.8 (14)	0.5 (-14)
IL	12.6	3.5	1.1	7.9	0.5	14.9 (18)	3.6 (4)	1.2 (8)	10.0 (27)	0.1 (-5)
NE	17.3	6.0	3.5	7.6	1.1	20.8 (20)	6.2 (3)	4.3 (23)	10.1 (32)	0.3 (20)
GA	23.4	7.6	3.6	11.8	0.8	28.1 (20)	7.1 (-7)	4.3 (19)	16.2 (37)	0.5 (34)
KY	28.1	8.9	3.2	15.6	0.8	34.9 (24)	10.8 (20)	3.5 (9)	20.3 (31)	0.3 (-26)
IN	16.5	4.3	3.3	8.4	0.6	22.9 (39)	4.7 (11)	5.5 (66)	12.2 (45)	0.5 (-7)
TX	31.7	9.1	3.8	18.0	0.4	56.4 (78)	14.9 (64)	5.8 (53)	34.8 (94)	0.8 (-2)

Source: GAO analysis of Medicaid Analytic eXtract data for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. Partial-year beneficiaries are defined as those enrolled in a comprehensive managed care plan in calendar year 2010 for a period of less than 12 months. We weighted our results by the number of months each beneficiary was enrolled in comprehensive managed care in calendar year 2010 to account for beneficiaries who may have been enrolled for only part of the year. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and

excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest tenth except for the other professional services category. The percent difference for each state was calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Table 5: Child Professional Service Utilization in Selected States, 2010

State	Total managed care services	Service categories (percent of total managed care services)			
		Evaluation and management	Procedural	Ancillary	Other professional
IL	6	2 (35)	2 (29)	2 (36)	0.0 (1)
RI	8	4 (45)	3 (32)	1 (18)	0.4 (5)
FL	8	3 (38)	2 (30)	2 (29)	0.3 (4)
NE	9	4 (42)	3 (34)	2 (22)	0.2 (2)
CT	9	3 (33)	2 (28)	3 (29)	1.0 (11)
WA	9	3 (37)	3 (29)	3 (32)	0.2 (2)
OR	10	4 (39)	4 (41)	2 (17)	0.3 (3)
VA	10	4 (39)	3 (33)	3 (25)	0.2 (2)
NY	11	4 (34)	4 (32)	4 (32)	0.1 (1)
IN	11	5 (43)	3 (30)	3 (25)	0.2 (2)
NM	11	4 (37)	4 (37)	2 (18)	0.9 (8)
AZ	12	4 (33)	3 (25)	2 (20)	2.5 (21)
GA	12	5 (45)	4 (34)	2 (20)	0.2 (1)
DE	12	5 (39)	5 (39)	2 (18)	0.5 (4)
MI	13	4 (34)	4 (34)	3 (27)	0.6 (5)
TN	13	4 (35)	4 (35)	3 (26)	0.5 (4)
KY	13	5 (38)	4 (33)	4 (27)	0.2 (2)
TX	15	6 (37)	6 (41)	3 (19)	0.5 (3)
MN	16	5 (29)	6 (36)	4 (23)	1.8 (12)
Median	11	4	4	3	0.3

Source: GAO analysis of Medicaid Analytic eXtract data for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest whole number except for the other professional services category. The percentages of total services in each state attributable to specific service categories were calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Table 6: Child Professional Service Utilization in Selected States, Partial-Year Beneficiaries Compared with Full-Year Beneficiaries, 2010

	Full-year beneficiaries					Partial-year beneficiaries (percent difference)				
State	Total managed care services	Evaluation and management	Procedural	Ancillary	Other professional	Total managed care services	Evaluation and management	Procedural	Ancillary	Other professional
AZ	11.8	3.9	2.9	2.4	2.7	11.3 (-5)	3.9 (1)	3.2 (11)	2.2 (-7)	1.94 (-27)
TX	15.1	5.5	6.0	3.0	0.6	15.7 (4)	5.9 (7)	6.5 (9)	2.8 (-7)	0.44 (-30)
RI	7.9	3.5	2.5	1.5	0.4	8.2 (4)	3.7 (7)	2.7 (7)	1.4 (-6)	0.39 (-3)
TN	12.6	4.4	4.4	3.4	0.5	13.2 (5)	5.0 (16)	4.7 (7)	3.2 (-7)	0.32 (-37)
NY	10.8	3.6	3.4	3.7	0.1	11.5 (6)	4.2 (15)	4.0 (19)	3.1 (-15)	0.14 (3)
MN	15.0	4.2	5.4	3.5	1.9	16.0 (7)	4.7 (14)	5.9 (8)	3.5 (1)	1.82 (-3)
DE	11.8	4.5	4.5	2.2	0.5	12.6 (7)	5.1 (12)	4.9 (8)	2.1 (-5)	0.49 (-2)
KY	12.5	4.6	4.1	3.6	0.2	13.6 (9)	5.5 (20)	4.5 (11)	3.4 (-6)	0.18 (-15)
MI	12.0	4.1	4.0	3.4	0.6	13.5 (12)	4.7 (16)	4.7 (17)	3.5 (4)	0.61 (1)
FL	7.6	2.9	2.1	2.2	0.3	8.7 (15)	3.2 (11)	2.7 (28)	2.5 (11)	0.27 (-18)
IN	10.5	4.3	3.2	2.7	0.2	12.0 (15)	5.3 (23)	3.6 (13)	2.9 (5)	0.22 (2)
CT	8.5	2.7	2.3	2.6	0.9	9.8 (15)	3.6 (35)	2.7 (17)	2.3 (-12)	1.16 (26)
OR	9.1	3.5	3.7	1.6	0.3	10.5 (16)	4.2 (22)	4.4 (20)	1.6 (0)	0.27 (-19)
WA	8.7	3.3	2.5	2.8	0.2	10.5 (20)	3.8 (15)	3.2 (29)	3.4 (20)	0.18 (4)
GA	10.7	4.7	3.5	2.3	0.1	13.1 (22)	6.0 (26)	4.6 (30)	2.4 (5)	0.15 (1)
VA	9.5	3.8	3.0	2.6	0.2	11.8 (24)	4.7 (24)	4.3 (44)	2.6 (2)	0.23 (-5)
NM	10.7	3.9	3.8	2.1	0.9	14.1 (32)	5.3 (35)	5.6 (50)	2.1 (1)	1.03 (15)
NE	7.3	3.1	2.4	1.6	0.2	9.6 (33)	4.0 (30)	3.4 (38)	2.1 (32)	0.21 (22)
IL	5.3	1.9	1.5	1.9	0.0	7.7 (44)	2.6 (35)	2.2 (44)	2.9 (55)	0.05 (29)

Source: GAO analysis of Medicaid Analytic eXtract data for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. Partial-year beneficiaries are defined as those enrolled in a comprehensive managed care plan in calendar year 2010 for a period of less than 12 months. We weighted our results by the number of months each beneficiary was enrolled in comprehensive managed care in calendar year 2010 to account for beneficiaries who may have been enrolled for only part of the year. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid. We focused our analysis on professional services and

excluded dental and behavioral health services and any services paid on a fee-for-service basis. Evaluation and management services include services such as office visits and emergency room and critical care services. Procedural services include services such as surgery and ophthalmology. Ancillary services include services such as pathology and lab services, and anesthesiology. Other professional services include services such as oxygen therapy, hospital-mandated on-call service, and other services that are not otherwise classified in the categories above. See appendix I for more information. For the percentage of partial-year beneficiaries by state, see appendix III. Numbers are rounded to the nearest tenth except for the other professional services category. The percent difference for each state was calculated based on unrounded data. A detailed, interactive display of the data used to support our findings is available at http://www.gao.gov/products/GAO-15-481.

Appendix III: Percentage of Partial-Year Beneficiaries in Selected States in 2010

State	Adults	Children
Arizona	45%	37%
Connecticut	42	35
Delaware	66	58
Florida	79	61
Georgia	82	62
Illinois	61	52
Indiana	68	50
Kentucky	76	49
Michigan	67	51
Minnesota	76	71
Nebraska	88	77
New Mexico	46	35
New York	51	43
Oregon	71	56
Rhode Island	55	47
Tennessee	48	32
Texas	97	72
Virginia	73	52
Washington	79	45

Source: GAO analysis of Medicaid Analytic eXtract data for calendar year 2010. | GAO-15-481

Notes: Beneficiaries included in our analysis were eligible to receive full Medicaid benefits and were enrolled in a comprehensive managed care plan in at least one month during calendar year 2010. We excluded beneficiaries who were enrolled in a comprehensive managed care plan if during the calendar year of our analysis they had other sources of health coverage in addition to Medicaid.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, William Black, Assistant Director; Christine Brudevold, Assistant Director; Ramsey Asaly; Stella Chiang; Greg Dybalski; Sandra George; Drew Long; Jessica Morris; and Vikki Porter made key contributions to this report.