CHAPTER 4

Update on Medicaid and CHIP Data for Policy Analysis and Program Accountability

Key Points

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▶ Data on Medicaid and the State Children's Health Insurance Program (CHIP) play a key role in answering policy questions that affect program enrollees, states, the federal government, health care providers, and others—and in ensuring accountability for taxpayer dollars. This chapter provides an update on efforts to improve the timeliness, quality, and availability of federal administrative data on the programs, which MACPAC first addressed in its March 2011 report to the Congress.

▶ Federal administrative data on Medicaid and CHIP are meant to provide comparable information across states, which maintain their own disparate data systems. These federal data are necessary to fully understand the programs and to make evidence-based policy decisions.

▶ Since the Commission last reported on the topic in March 2011, the Centers for Medicare & Medicaid Services (CMS) has taken steps to improve federal Medicaid and CHIP data through initiatives that include:

  ▪ MACPro, a web-based system designed to collect state plan, waiver, and other programmatic documents in a structured and consistent format;

  ▪ the Transformed Medicaid Statistical Information System (T-MSIS), a data source building on existing person-level and claims-level MSIS data submitted by states; and

  ▪ Medicaid Information Technology Architecture (MITA), which establishes national guidelines and standards for state-operated Medicaid and CHIP data systems that are funded with federal dollars.

▶ Improvements to Medicaid and CHIP data will not occur overnight, and they will require significant federal and state resource investments. MACPro and T-MSIS are scheduled for roll-out in 2013, with full implementation expected to take at least two years. MITA is an ongoing effort with states, whose data systems are at varying levels of modernization.

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In its inaugural report to the Congress, MACPAC described the key role that Medicaid and State Children's Health Insurance Program (CHIP) data play in answering policy questions that affect program enrollees, states, the federal government, health care providers, and others—and in ensuring accountability for taxpayer dollars. In that report, the Commission:

- ▶ highlighted ways in which existing federal administrative data on Medicaid and CHIP can help to answer key policy and accountability questions;

- ▶ identified major federal administrative data sources that are used for most national and cross-state analyses of Medicaid and CHIP; and

- ▶ noted areas where better data on the programs are needed (MACPAC 2011).

Consistent with MACPAC's statutory charge to review national and state-specific Medicaid and CHIP data and to submit reports and recommendations based on such reviews (§1900(b)(3) of the Social Security Act), this chapter describes recent efforts by the Centers for Medicare & Medicaid Services (CMS) to improve the timeliness, quality, and availability of federal administrative data on the programs.

The Commission strongly supports continued improvements to federal Medicaid and CHIP data, and encourages CMS to continue seeking input from states and other stakeholders as it implements its new initiatives. As the timeliness, quality, and availability of data improve, so will the ability of the Commission and others to address questions that are currently difficult to answer. For example, do enrollees receive appropriate care in both fee-for-service and managed care settings? To what extent does provider participation in Medicaid vary? Can the impact of policy changes, such as the current

increase in payment rates for certain primary care providers, be assessed in a timely manner?

Brief Overview of Federal Administrative Data on Medicaid and CHIP

In the course of administering the Medicaid and CHIP programs, states and the federal government receive and generate large amounts of data. Sources include:

- **State plan and waiver documents.** States describe a wide range of program policies—such as eligibility levels and covered benefits—in state plan and waiver documents that must be approved by CMS.

- **Eligibility information.** Individuals report information such as income, age, and other personal and family characteristics in the process of applying for coverage.

- **Claims.** Health care providers submit claims that document the services provided to enrollees, and, in turn, states (as well as managed care plans under contract with states) process payments for those claims.

- **Accounting statements.** States complete detailed quarterly accounting statements to obtain federal funds for a share of their Medicaid and CHIP costs.

State data systems

All states maintain comprehensive and detailed data on their individual Medicaid and CHIP programs, and are statutorily required to maintain a Medicaid Management Information System (MMIS) to process claims from providers and to perform a variety of information retrieval and reporting functions (§1900(r) of the Social Security Act). However, each state's MMIS reflects its own

administrative structures and processes, even when multiple states contract with the same private vendor for MMIS support. In addition, MMIS and other data are often housed in multiple systems that are fragmented within states and in formats that limit their comparability across states. Some of the issues include:

- **Unique billing codes.** Some states create state-specific billing codes for certain services. This is particularly an issue for services that are unique to Medicaid, such as long-term services and supports provided in home and community-based settings.

- **Payments not based on claims.** Not all payments to providers are processed through a state's MMIS. Examples may include: retrospective settlement amounts for providers who are paid on the basis of costs, rather than a fee schedule; supplemental payments to providers made under various statutory authorities; and payments to certain public providers who receive funding through state or local budget processes, sometimes in lieu of direct payments by the state Medicaid agency.

- **Eligibility data coming from different systems.** Although federal law requires states to operate their Medicaid programs under the authority of a single state agency, multiple state and local government entities may have responsibility for different program functions. State MMISs typically receive and store data extracts containing eligibility-related information to ensure that payments are made only for services provided to current Medicaid and CHIP enrollees. However, state eligibility systems generally operate separately and distinctly from MMISs, in part because they may be used to enroll individuals in public programs other than Medicaid and CHIP.

As acknowledged in MACPAC's March 2011 report to the Congress, states have their own data that paint a rich picture of their individual Medicaid and CHIP programs but that may not always be reflected in federal sources. Encounter data, which provide a record of the services furnished to Medicaid and CHIP enrollees in managed care plans, are one such example. Historically, these data were underreported by states (OIG 2009), and their quality and completeness at the federal level went largely unexamined (Byrd and Verdier 2011). However, all states with managed care programs obtain encounter data in some form, and many have had years of experience in using the data for a variety of purposes that include setting capitation rates for plans, calculating performance measures, and generating ad hoc reports for state agencies, legislatures, and external constituencies. The ongoing use of encounter data by states provides a continuing check on its quality at the state level, but the federal government is only now beginning to examine these data—an important change, since data that are not used tend not to improve (Byrd and Verdier 2011).

Federal administrative data systems

At the federal level, most administrative data on Medicaid and CHIP consist of information reported by states to CMS on their program policies, the characteristics and service use of their enrollees, and their program spending (Table 4-1).

These federal administrative data are critical because they are the only source that can provide a comprehensive picture of the Medicaid and CHIP programs, which cost nearly $450 billion in fiscal year (FY) 2012 and were estimated to serve about 80 million people for at least part of the year (MACPAC 2013). Unlike the data held by states, federal sources are meant to provide comparable information in a standard format,

allowing for national and cross-state examinations of program issues. In addition, researchers may link administrative and survey data sources to provide more detailed information—for example, on the health and other characteristics of program enrollees (Dodd and Gleason 2013)—than can be obtained from a single source in isolation.

In addition to serving as an important resource for program oversight by CMS and others, some general uses of the data for analytic purposes include:

▶ **Projections.** Historical data are a key source of information used in projections of future enrollment and spending, under both current law and alternative proposals, by CMS and other agencies such as the Congressional Budget Office (Truffer 2013).

▶ **Spending growth.** Data can be used to identify enrollee subgroups and services that account for a disproportionate share of program spending, and also to examine the extent to which spending is driven by increases in enrollment versus increases in spending per enrollee. This information provides a focus for cost-control policies.

▶ **Continuity of coverage.** Data can show the extent to which individuals experience churn in their Medicaid and CHIP enrollment—a consideration in analyses of access to and use of services (Czajka 2012a, 2012b).

▶ **Quality and appropriateness of care.** Claims and encounter data that provide information on service use can be used to examine receipt of recommended care, such as well-child and preventive dental visits for children (Bouchery 2012a, 2012b).

▶ **Provider participation.** Data on providers can inform efforts to examine their participation in Medicaid, as well as enrollees' access to and use of services (Baugh and Verghese 2012).

TABLE 4-1. **Key Sources of Federal Administrative Data on Medicaid and CHIP**

Source	Brief Description
Medicaid and CHIP Budget and Expenditure System (MBES/CBES)	Reports (Forms CMS-64, CMS-21, and CMS-37) detailing aggregate spending that are submitted by states to receive federal reimbursement for a share of their Medicaid and CHIP spending
Medicaid Statistical Information System (MSIS)	Demographic and enrollment-related information on each person enrolled in Medicaid and, at state option, separate CHIP programs, as well as a record of each claim paid for most services an enrollee receives
Statistical Enrollment Data System (SEDS)	Aggregate statistics on CHIP and child Medicaid enrollment
Form CMS-416	Aggregate statistics on children receiving Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services
Form CMS-372	Aggregate statistics on enrollment and spending under home and community-based services waivers
Medicaid Drug Rebate (MDR) System	Aggregate statistics on drug utilization and payments, used for calculating rebates to states from drug manufacturers
State Medicare Modernization Act (MMA) files	Monthly eligibility-related information on individuals dually enrolled in Medicaid and Medicare, used for Medicare Part D purposes
State plan documents	Documents that describe a state's Medicaid and CHIP policies under regular state plan (i.e., non-waiver) rules
Waiver documents	Documents that describe a state's Medicaid and CHIP waiver programs, including those operating under Section 1115, 1915(b), and 1915(c) authorities
Medicaid Managed Care Data Collection System (MMCDCS)	Aggregate statistics on managed care enrollment, along with basic descriptive information on each managed care plan and program within a state
CHIP Annual Report Template System (CARTS)	Information on CHIP programs, such as policies on eligibility and cost sharing, as well as performance measures regarding receipt of care

Note: For more information on each of these data sources, see MACPAC's March 2011 report to the Congress.

▶ **Program characteristics.** Qualitative information on service delivery and payment mechanisms, such as capitated managed care, provide important context when examining spending and utilization across states.

▶ **Program integrity.** CMS is exploring how to make better use of federal data sources for

purposes of identifying billing and utilization patterns that indicate potential fraud and abuse in Medicaid and CHIP. (See Chapter 5 on program integrity.)

Recent Federal Efforts to Improve Data Timeliness, Quality, and Availability

As outlined in MACPAC's March 2011 report to the Congress, Medicaid and CHIP data are collected from states at different times, in different formats, for different purposes. States report some information on their programs more than once, while gaps remain that limit the usefulness of various data sources. In its report, the Commission noted a number of areas where better federal administrative data on Medicaid and CHIP were needed and provided examples of how improvements in these data could allow for better analysis of policy and program accountability issues. These areas included:

▶ the ability to understand service use among managed care enrollees, children eligible for Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefits, and children in separate CHIP programs;

▶ the timeliness and consistency of various data sources; and

▶ the availability of information on state program policies.

At the time of MACPAC's March 2011 report to the Congress, CMS had established a Medicaid and CHIP Business Information Solutions (MACBIS) Council to oversee a transformation of the agency's data strategy and environment (Plewes 2010, Thompson 2010). As part of this effort, the Council commissioned a review of existing Medicaid and CHIP data sources and their uses (Borden et al. 2010). CMS had also released a plan for modernizing its computer and data systems (CMS 2010a). The Commission noted that CMS activities to inventory its existing data sources provided a valuable starting point for addressing both redundancies and gaps in the information reported by states, and encouraged the agency to

continue its development of a strategic plan for Medicaid and CHIP data.

In a February 2013 presentation to the Commission, CMS highlighted two major initiatives aimed at improving Medicaid and CHIP data that are scheduled for roll-out in 2013, with full implementation to follow in coming years (Boughn 2013). The first is MACPro, a web-based system designed to collect state plan, waiver, and other programmatic documents in a structured and consistent format. The second is the Transformed Medicaid Statistical Information System (T-MSIS), which builds on existing person-level and claims-level MSIS data submitted by states. CMS is also using its ongoing Medicaid Information Technology Architecture (MITA) initiative to establish national guidelines and standards for state-operated Medicaid and CHIP data systems that are funded with federal dollars (CMS 2013a). The following sections describe these initiatives, provide information on their anticipated improvements to Medicaid and CHIP data, and highlight areas where additional attention may be warranted. Although not discussed here in detail, CMS has also been providing technical assistance to states and their contractors on a variety of issues such as managed care encounter data, separate CHIP program data, and individuals dually eligible for Medicare and Medicaid (CMS 2013c, Camillo 2012, Byrd and Verdier 2011).

MACPro

MACPro is a web-based system under development at CMS to collect state plan, waiver, and other programmatic documents in a structured and consistent format (Boughn 2013). Capturing information in this manner has been cited as a critical need for CMS (Borden et al. 2010). With the exception of certain waivers related to home and community-based services and managed care, current Medicaid and CHIP program data

are largely submitted, reviewed, and approved in paper or electronic formats that cannot be easily summarized or linked with other data sources.

In 2013, CMS expects that MACPro will be used for the submission of state plan amendments (SPAs) related to the eligibility and benefit package provisions of the Patient Protection and Affordable Care Act (ACA, P.L. 111-148, as amended). CMS expects to roll out additional components of the system on a two-year schedule. During this time, the agency will maintain its existing processes for state plan and waiver approvals alongside MACPro.

As previously noted by the Commission, modernizing the data systems that collect programmatic information on Medicaid and CHIP would be beneficial for several reasons. The federal government could strengthen its program oversight by providing consistent and comprehensive information on state activities for use by CMS and other agency staff. Second, states could more easily learn about the policy choices made by others as they consider their own program changes. In addition, analysts could better identify the range of policies in place across states as they relate to the number of people who are covered by Medicaid and CHIP, the services they use, and the amount spent on those services—and use this information to identify possible best practices or program improvements.

As pieces of the system are implemented over the next two years, the Commission encourages CMS to make the information collected in MACPro publicly available in a timely and transparent manner. The Commission also encourages CMS to ensure that existing information be made more readily available during the transition to MACPro. For example, prior to making the entirety of state plans available on the CMS website using MACPro, the agency could compile links to the location of this information on state websites or

post scanned electronic versions of the hard-copy documents that it now maintains at its regional offices. Historically, CMS has been inconsistent in its efforts to keep the SPAs and waiver documents on its website complete and up to date.

In a 2010 letter to state Medicaid directors describing its process for reviewing SPAs, CMS acknowledged that the submission of a SPA may sometimes lead to the identification of existing state plan provisions that appear to be contrary to federal statute, regulations, or established guidance (CMS 2010b). In such cases, the potentially non-compliant state plan provisions must also be reviewed and resolved. For states, one area of concern about MACPro may be that the process of converting existing state plan documents could lead to an increase in the number of state plan provisions that are questioned by CMS and potentially reopened for consideration, some of which may have been approved under a previous administration's statutory or regulatory interpretation.

T-MSIS

MSIS is a data source compiled by CMS from detailed demographic, enrollment, and claims information reported by all states since FY 1999. Currently, states must submit five MSIS files every quarter: one containing eligibility-related information on each person enrolled in Medicaid—and optionally CHIP—and four containing information on paid claims for inpatient hospital services, institutional long-term care, drugs, and all other services. T-MSIS will expand the data to include three additional files with information on providers, third-party payers, and managed care plans.

The expanded system will also include changes to address several concerns about current MSIS data (Boughn 2013):

▶ **Timeliness.** T-MSIS will move states from quarterly to monthly data submissions and will replace manual reviews of the data with automated quality checks that provide states with real-time feedback.

▶ **Reliability.** Data reliability will be addressed in a number of ways, but a key component will be an up-front mapping effort that requires states to document their source data and processes for populating each of the nearly 800 data elements in T-MSIS (CMS 2013a). Assuring consistency of this mapping across states will be a significant challenge.

▶ **Completeness.** CMS will be working with states to ensure that existing requirements for managed care encounter data are met, along with new requirements for the reporting of provider and other data. However, the extent to which states currently collect and use these data for their own purposes will affect their T-MSIS submissions.

In its March 2011 report to the Congress, the Commission identified how data improvements of the sort currently contemplated for T-MSIS would be beneficial. For example:

▶ CMS could reduce reporting burdens by directly calculating certain measures reported elsewhere by states. These might include EPSDT statistics reported for children on the CMS-416, as well as certain child and adult quality measures that would otherwise be voluntarily reported by states (HHS 2012a, 2012b).

▶ Encounter data could be used to make national and cross-state comparisons of the care received by Medicaid and CHIP enrollees whose benefits are delivered through fee-for-service versus managed care systems, which some states already do on an individual basis (Ku et al. 2009, Thomson Medstat 2006). Although these data are currently reported by

many states, their quality and completeness vary (Borck et al. 2013, Byrd and Dodd 2012, Byrd et al. 2012, Dodd et al. 2012, Nysenbaum et al. 2012).

▶ Complete enrollment and claims data for separate CHIP enrollees could be used to help CMS and states understand the effectiveness of enrollment strategies like express lane eligibility, program transitions, and payment variation by state (Camillo 2012).

▶ Results from the measurement and monitoring of enrollees' service use could be used to better target outreach efforts for individuals most in need of services.

▶ More timely data would give administrators and legislators a clearer picture of the programs as they operate now—rather than as they did two or three years ago. The availability of current data may be particularly important for program integrity efforts such as the identification of potential fraud and abuse by providers and enrollees. (See Chapter 5 on program integrity.)

An initial version of T-MSIS was tested as a pilot in 12 states beginning in 2011 (Gorman 2012). CMS made changes to the data dictionary as part of the pilot process and anticipates that full implementation of T-MSIS may take up to two years, with some states beginning to submit the data in 2013.

CMS has recently added the submission of T-MSIS data as a condition on approvals for states that receive enhanced federal match for significant upgrades to their data systems (see discussion of MITA below), as well as for certain eligibility-related activities (CMS 2013b). However, as with the current MSIS, T-MSIS will not serve as the basis for calculating federal reimbursement to states—a use that could provide the most powerful incentive for states to submit high-quality data in a timely manner. To the extent that T-MSIS data are used for statistical reporting rather than federal

funding purposes, states may continue to view T-MSIS data as a low priority relative to the many competing pressures they face. As noted in the MITA discussion below, the spending amounts reported in today's MSIS data are not always consistent with those reported in the CMS-64 data that are used to calculate federal matching funds.

T-MSIS will require a significant investment of resources at the state level, both in the initial stages of mapping data from multiple systems into the federally required format and in the ongoing maintenance and submission of the data. States may have a number of concerns about T-MSIS implementation:

- **Staff resources.** Given the many activities related to ACA implementation currently under way, a small number of state staff may be responsible for implementing a wide range of systems changes other than those related to T-MSIS. In addition, many states' current MSIS submissions are extracted from legacy systems using coding that is not well understood. In some cases, T-MSIS will not be a modification of an existing process, but a completely new development effort.

- **Data mapping.** Data mapping may be particularly challenging for states contracting with several managed care plans or in cases where Medicaid services are coordinated and paid through a different state agency, such as the department of mental health. It may be difficult for a state to coordinate the collection and validate the quality and consistency of data coming from the other agencies or managed care plans. States may also have to update the data maps periodically, if they make changes to their MMIS systems or contract with new managed care plans.

- **Unavailable data.** States have some concerns about the level of completeness that may be required in T-MSIS. States may be missing

certain data elements, or, even if they are collecting information for a particular data element, it may be that not all records have a valid value within that field. None of the T-MSIS pilot states were able to provide all of the data elements required for T-MSIS, leading CMS to indicate that it will need to identify items with a low submission or population rate and assess how this will impact the ability to analyze the data (Gorman 2012).

- **Continued duplication.** While T-MSIS will provide more robust analytic capabilities for CMS, states have some concerns that it may not provide all of the necessary information to eliminate additional data requests for other CMS activities, such as the Payment Error Rate Measurement (PERM) program for Medicaid and CHIP.

Some activities related to the collection and submission of T-MSIS data may be eligible for enhanced federal matching funds. Among other purposes, states may be able to use the enhanced federal funds to improve and standardize Medicaid and CHIP data for T-MSIS. This includes improving encounter data, which would also help states with their managed care oversight and monitoring capabilities. However, even with the availability of enhanced federal matching funds, states may still struggle to finance their share of these and other Medicaid and CHIP costs.

MITA

MITA is a CMS initiative to establish national guidelines and standards for state-operated Medicaid and CHIP data systems that are funded with federal dollars. As noted earlier, each state is required to have an MMIS that processes claims from providers and performs a variety of other functions. Historically, MMISs were primarily designed to serve as financial and accounting systems for provider payments. As additional

Medicaid functions (such as managed care oversight, clinical support, data analysis, fraud management, non-emergency transportation coordination, and prior authorization) became automated, some were added as separate systems while others were added into the MMIS. Some of these fragmented systems had difficulty communicating, lost information in the process of exchanging data, and could not provide a consolidated overview of all provider and beneficiary activity.

MITA efforts are intended to ensure the use of standard data definitions and processes so that disparate state systems can operate together as a virtual MMIS, and so that federal data reported by states is comparable. Toward that goal, CMS has developed a framework for the standardization and interoperability of state data systems (CMS 2012).

Enhanced federal funding is available for MMIS upgrades (at a 90 percent match) or the operation of a federally certified MMIS (at a 75 percent match). To receive this enhanced funding, states are required to submit advance planning documents (APDs) that describe how their systems will meet MITA goals and objectives. These goals currently include the submission of T-MSIS data, which has been added as a condition for obtaining APD approval from CMS (CMS 2013a).

MACPAC's March 2011 report to the Congress cited a lack of consistency in state-reported information on Medicaid and CHIP as an ongoing issue that limits the usefulness of federal data for analytic and oversight purposes. A prominent example arises in comparisons of the spending amounts reported in CMS-64 data (which are used by states to obtain federal matching funds) and MSIS data (which are used for statistical and research purposes). Even after adjusting for differences in scope and design (such as the treatment of drug rebates and administrative costs), the MSIS generally produce lower

spending figures than the CMS-64 (GAO 2012). Structural differences will always exist between these data sources. However, as part of its MITA efforts, CMS could include an examination of inconsistencies that remain unexplained.

As noted by states, the challenges associated with MITA include organizational resistance when collaborating across state agencies, a need to modernize both their technology and business processes, and the long time-frame required to implement programs—often through changing political administrations (NASCIO 2008). However, there is recognition that improving the use of information technology is a way for states to cut costs, increase productivity, and concentrate efforts where they are most needed (NGA 2012).

Looking Forward

Consistent with previous reporting by the Commission, CMS is taking a number of steps to improve the timeliness, quality, and availability of federal administrative data on the Medicaid and CHIP programs. The Commission supports these efforts and encourages the agency to continue seeking input from states and other stakeholders. Adequate staffing, funding, and support at both the federal and state levels will be critical to ensuring that the best possible information is collected on Medicaid and CHIP and that it is disseminated in an efficient manner—for example, by making use of technology that allows users to generate key indicators and summary reports with minimal need to sift through large volumes of raw data. Given that plans to modernize the agency's Medicaid and CHIP data systems currently rely on a patchwork of program integrity, quality measurement, health information technology, and CHIP reauthorization funds (CMS 2013a), the Commission urges CMS to assess whether its available resources will be sufficient for this purpose.

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