

**Department of Health and Human Services**

**OFFICE OF  
INSPECTOR GENERAL**

**EARLY OUTCOMES SHOW  
LIMITED PROGRESS FOR THE  
TRANSFORMED MEDICAID  
STATISTICAL INFORMATION  
SYSTEM**



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**EXECUTIVE SUMMARY: Early Outcomes Show Limited Progress for the Transformed Medicaid Statistical Information System  
OEI-05-12-00610**

**WHY WE DID THIS STUDY**

In response to a Congressional request, the Office of the Inspector General (OIG) agreed to determine the status of national Transformed Medicaid Statistical Information System (T-MSIS) implementation and determine whether early outcomes indicate that T-MSIS data will be complete, accurate, and timely upon national implementation. T-MSIS is designed to be a detailed national database of Medicaid and Children's Health Insurance Program information to cover a broad range of user needs, including program integrity. T-MSIS is a continuation of the Centers for Medicare & Medicaid Services' (CMS) past attempts to improve the current nationally available Medicaid data after OIG and others found that the current data were not complete, accurate, or timely.

**HOW WE DID THIS STUDY**

To complete this early implementation review, we analyzed project schedules, meeting minutes, and milestone achievements from 12 States that volunteered to work with CMS on the planning and development of T-MSIS. These States were in a position to be some of the first States to implement T-MSIS. We also analyzed CMS's T-MSIS documentation regarding States' ability to report complete and accurate T-MSIS data. Finally, we conducted structured interviews with CMS staff.

**WHAT WE FOUND**

Overall, as of January 2013, CMS and the 12 volunteer States had made some progress in implementing T-MSIS. However, most other States had not started implementing T-MSIS; and they reported varied timeframes for when they plan to begin. CMS has not established a deadline for when national T-MSIS data will be available.

Further, early T-MSIS implementation outcomes raised questions about the completeness and accuracy of T-MSIS data upon national implementation. None of the 12 volunteer States can make all T-MSIS data elements available. Further, both CMS and the 12 States expressed concerns about the accuracy of the data they could provide upon implementation.

**WHAT WE RECOMMEND**

Although CMS and 12 volunteer States have made some progress with T-MSIS, it remains unclear whether T-MSIS will result in complete, accurate, and timely national Medicaid program integrity data upon implementation. We recommend that CMS, to help create a fully functional T-MSIS: (1) establish a deadline for when national T-MSIS data will be available; (2) ensure that States submit required T-MSIS data; and (3) ensure

that T-MSIS data are complete, accurate, and timely upon T-MSIS implementation. CMS concurred with our recommendations.

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## OBJECTIVES

1. To determine the status of the Centers for Medicare & Medicaid Services' (CMS) national implementation of the Transformed Medicaid Statistical Information System (T-MSIS).
2. To determine the extent to which the early implementation outcomes and States' and CMS's experiences implementing T-MSIS indicate that T-MSIS may result in complete, accurate, and timely national Medicaid program integrity data.

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## BACKGROUND

This early implementation review responds to a Congressional request that the Office of Inspector General (OIG) review T-MSIS to determine whether CMS's plans, milestones, metrics, goals, and data elements meet the needs of entities conducting program integrity activities. In response to the request, OIG agreed to determine the status of national T-MSIS implementation and determine whether early outcomes indicate that T-MSIS data will be complete, accurate, and timely upon national implementation.

Previous OIG work found problems with national Medicaid data and recommended that CMS improve the quality of data.<sup>1</sup> T-MSIS is CMS's solution to the known problems in the current nationally available Medicaid data.<sup>2</sup>

### Medicaid Data Reporting Requirements

States are mandated to report fee-for-service claims and individual encounter data for managed care enrollees to CMS. The Patient Protection and Affordable Care Act (ACA) added a requirement that States report elements that the Secretary deems necessary for program integrity, oversight, and administration. The Medicaid Statistical Information System (MSIS) is the mechanism by which CMS requires States to report these data.<sup>3</sup> CMS requires States to report MSIS data quarterly.<sup>4</sup>

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<sup>1</sup> OIG, *Early Assessment of Audit Medicaid Integrity Contractors*, OEI-05-10-00210, March 2012; OIG, *MSIS Data Usefulness for Detecting Fraud, Waste, and Abuse*, OEI-04-07-00240, August 2009; and OIG, *Medicaid Managed Care Encounter Data: Collection and Use*, OEI-07-06-00540, May 2009.

<sup>2</sup> OIG, *Early Assessment of Audit Medicaid Integrity Contractors*.

<sup>3</sup> Social Security Act (SSA) § 1903(r)(1)(F) as added by the Balanced Budget Act of 1997, P.L. 105-33 § 4753(a)(1), and amended by the ACA, P.L. 111-148 § 6504, to include data elements the Secretary determines are necessary for program integrity, oversight, and administration.

<sup>4</sup> CMS, *State Medicaid Manual*, Pub. No. 45, § 2700.2.

CMS's statutory enforcement mechanisms for data reporting requirements vary. CMS may withhold Federal matching payments for the use, maintenance, or modification of automated data systems from States that fail to report required data.<sup>5</sup> For managed care enrollees, CMS may withhold Federal matching payments for medical assistance to those individuals when States fail to report required data.<sup>6</sup>

### **Medicaid Statistical Information System**

MSIS is an extract of States' Medicaid Management Information Systems (MMIS) and contains claims information from all 50 States and the District of Columbia (hereinafter referred to as States).<sup>7</sup>

MSIS is composed of 5 data files and approximately 400 data elements. There is an eligibility file and there are four claims files (inpatient, long-term-care, pharmacy, and other).

CMS intended MSIS as a detailed national database of Medicaid program information to cover a broad range of user needs.<sup>8</sup> The database is used for analytical research, program integrity, planning, budgeting, and policy analyses associated with Medicaid. MSIS is the only nationwide Medicaid eligibility and claims database.

### **Difficulties Using MSIS for National Medicaid Program Integrity**

In previous reports, OIG identified problems with missing or outdated MSIS data that make it an inadequate tool for national Medicaid program integrity data analysis strategies. OIG found that MSIS did not have all data elements necessary for conducting national Medicaid program integrity activities.<sup>9</sup> Approximately half of a consolidated set of program integrity data elements identified by CMS and other Federal agencies were not collected from States for MSIS.<sup>10</sup> Also, MSIS data were outdated.<sup>11</sup> OIG found that it took an average of 1.5 years to release MSIS data publicly from fiscal year (FY) 2004 to FY 2006; significant time was lost because States' initial MSIS data submissions were late.<sup>12</sup>

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<sup>5</sup> SSA § 1903(r)(1)(F).

<sup>6</sup> SSA § 1903(i)(25), added by the ACA, P.L. 111-148 § 6402 (c).

<sup>7</sup> Each State has its own unique MMIS. States use MMIS to process claims and monitor use of services.

<sup>8</sup> CMS, *MSIS Medicaid Statistical Information System*. Accessed at <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Data-and-Systems/MSIS/Medicaid-Statistical-Information-System.html> on April 3, 2013. See *MSIS Procedures*, as well.

<sup>9</sup> OIG, *MSIS Data Usefulness for Detecting Fraud, Waste, and Abuse*.

<sup>10</sup> *Ibid.*

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

Further, OIG identified MSIS accuracy concerns. In a series of reports, OIG found that inaccurate MSIS data hindered the early results of Medicaid integrity contractors.<sup>13</sup> Specifically, States invalidated more than one-third of sampled potential overpayments identified by Medicaid integrity contractors mainly because MSIS data were missing or inaccurate.<sup>14</sup> Additionally, 81 percent of Medicaid integrity contractor audits reviewed by OIG either did not, or were unlikely to, identify overpayments; in nearly half of these audits, MSIS data were missing or inaccurate.<sup>15</sup>

In addition, OIG found that the lack of complete, accurate, and timely national Medicaid data is also a barrier to CMS's own program integrity data initiatives, such as the Medicare-Medicaid Data Match Program (Medi-Medi) and the Integrated Data Repository (IDR).<sup>16</sup> Specifically, CMS does not use MSIS data for the Medi-Medi program.<sup>17</sup> Instead, CMS's contractors work with participating States to collect data directly from each State's Medicaid program. Additionally, CMS intends for the IDR to provide a central repository for Medicare and Medicaid data.<sup>18</sup> However, CMS has not integrated MSIS data into the IDR. The OIG report notes that according to CMS Medicare program integrity staff, MSIS data in their current form are not appropriate to include in the IDR because the data are specific to each State and lack many of the standardized data elements needed for program integrity work.<sup>19</sup>

Finally, in 2012, CMS testified that MSIS was not an effective data source for national Medicaid program integrity activities.<sup>20</sup> CMS further stated

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<sup>13</sup> OIG, *Early Assessment of Audit Medicaid Integrity Contractors*; OIG, *Early Assessment of Review Medicaid Integrity Contractors*, OEI-05-10-00200, February 2012.

<sup>14</sup> OIG, *Early Assessment of Review Medicaid Integrity Contractors*.

<sup>15</sup> OIG, *Early Assessment of Audit Medicaid Integrity Contractors*.

<sup>16</sup> OIG, *The Medicare-Medicaid (Medi-Medi) Data Match Program*, OEI-09-08-00370, April 2012.

<sup>17</sup> CMS established the Medi-Medi program in 2001 as a way to identify improper billing patterns by matching Medicare and Medicaid claims information for providers and beneficiaries. Section 6034 of the Deficit Reduction Act added section 1893 of the SSA, which permanently established the Medi-Medi program at section 1893(g), P.L. 109-171 § 6034.

<sup>18</sup> CMS established the IDR in 2006 as a central repository for Medicare and Medicaid data. It is intended to help CMS program integrity staff and contractors (including Medi-Medi contractors) prevent and detect improper payments across the Medicare and Medicaid programs. Accessed at <http://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/IDR/index.html> on March 5, 2013.

<sup>19</sup> OIG, *The Medicare-Medicaid (Medi-Medi) Data Match Program*. CMS indicated that the IDR would not contain Medicaid claims data until at least 2015.

<sup>20</sup> Peter Budetti, M.D., J.D., *Program Integrity Efforts in the Medicare and Medicaid Programs*, Testimony before the United State House Committee on Oversight and Government Reform, Subcommittee on Government Organization, Efficiency, and Financial Management, June 7, 2012.

that it was taking steps to create a more comprehensive information management strategy for Medicaid, the Children's Health Insurance Program (CHIP), and State health systems.<sup>21</sup> This included making improvements to MSIS.

### **Transformed Medicaid Statistical Information System**

CMS's efforts to improve MSIS will result in a new national Medicaid dataset called T-MSIS. Among CMS's goals for T-MSIS are improving the completeness, accuracy, and timeliness of the data. CMS also intends for T-MSIS to be a way to limit the number of data requests States receive from CMS. To accomplish these goals, CMS is working with contractors to implement T-MSIS.

T-MSIS is a continuation of CMS's multiple past attempts to improve MSIS. In 2009, CMS conducted a pilot project for a national Medicaid database entitled MSIS Plus.<sup>22</sup> CMS followed this with another pilot project for a database entitled MSIS Redesign in 2011.<sup>23</sup> CMS's goals for both of these databases were to create a more complete, accurate, and timely national Medicaid dataset and to limit data requests to States.<sup>24</sup>

*T-MSIS pilot project.* CMS conducted a pilot project between March 2011 and June 2012 to inform the development of T-MSIS. The pilot project, which incorporated lessons learned from the two previous attempts to improve MSIS, had two objectives: (1) identify the data elements required by all stakeholders and (2) identify a technical platform and environment able to accommodate T-MSIS and run stakeholder analytics.

At the conclusion of the pilot project, CMS determined that it identified appropriate T-MSIS data elements. Internal CMS stakeholders confirmed that T-MSIS data elements were those that they need from States to conduct business functions and analysis, including national Medicaid program integrity activities.<sup>25</sup> In addition, many data elements new to

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<sup>21</sup> Ibid.

<sup>22</sup> Robb Miller & Yohannes Birre (CMS), *MSISPLUS Pilot Project*, presentation at MMIS Conference, Chicago, IL, August 19, 2009. Accessed at [http://www.mmisconference.org/MMIS2009\\_Presentations\\_PDFs/Wednesday/The%20Future%20of%20MSIS/Wednesday\\_MSIS\\_Birre.pdf](http://www.mmisconference.org/MMIS2009_Presentations_PDFs/Wednesday/The%20Future%20of%20MSIS/Wednesday_MSIS_Birre.pdf) on March 29, 2013.

<sup>23</sup> Federal IT Dashboard, *MSIS Redesign*. Accessed at <http://www.itdashboard.gov/print/investment/project-summary/284> on March 5, 2013.

<sup>24</sup> Robb Miller & Yohannes Birre, *MSISPLUS Pilot Project*; Ibid.

<sup>25</sup> Internal stakeholders include multiple divisions within CMS that may use T-MSIS data in the future: Center for Program Integrity, Center for Medicare & Medicaid Innovation, Financial Management Group, CHIP, Division of Pharmacy, and Center for Clinical Standards and Quality.

T-MSIS address MSIS program integrity gaps identified by external stakeholders, such as OIG.<sup>26</sup>

CMS also determined how to best construct a data platform to meet the data collection and analytic needs of CMS's internal stakeholders.

*T-MSIS Data.* There are approximately 1,000 data elements in T-MSIS, an expansion of the approximately 400 data elements collected in MSIS.<sup>27</sup> In general, CMS created T-MSIS data elements that responded to gaps in MSIS data identified by OIG and other stakeholders.

CMS organized T-MSIS into eight files. T-MSIS files include eligibility, third-party liability, managed care plan information, provider, and four claims files (inpatient, long-term-care, outpatient, and pharmacy).

CMS plans to make T-MSIS data files available approximately 60 days after the month in which the claims were processed.<sup>28</sup> States will have 1 month to submit T-MSIS data files (e.g., States will have until the end of February to submit January data). CMS plans to upload files to a data platform within 1 month of receiving States' T-MSIS data files.

### **National T-MSIS Implementation**

CMS has taken steps to establish the groundwork for States to begin implementing T-MSIS. CMS completed a number of activities to design T-MSIS so that States could begin implementing it. These activities include clarifying data elements, identifying critical data elements, completing some preliminary activities with States, and releasing data quality rules to States. See Figure 1 for a timeline of these activities.

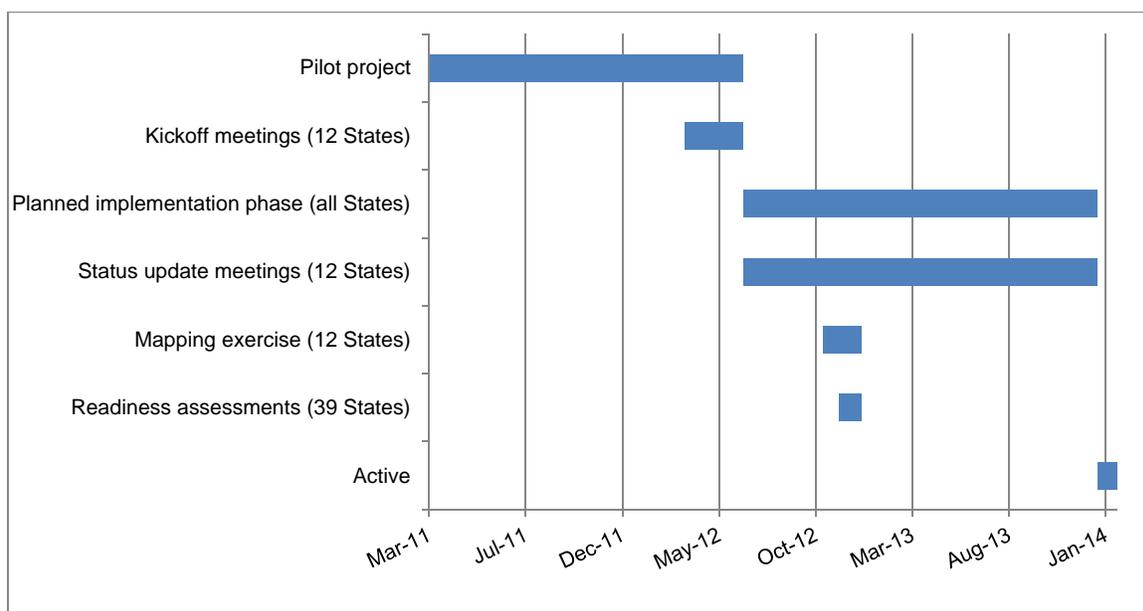
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<sup>26</sup> OIG, *MSIS Data Usefulness for Detecting Fraud, Waste, and Abuse*.

<sup>27</sup> Jim Gorman (CMS), *T-MSIS Pilot Overview*, panel presentation at Medicaid Enterprise Systems Conference, Boston, MA, August 20, 2012. Accessed at [http://www.mesconference.org/wp-content/uploads/2012/08/Monday\\_TMSIS\\_Gorman.pdf](http://www.mesconference.org/wp-content/uploads/2012/08/Monday_TMSIS_Gorman.pdf) on June 12, 2013.

<sup>28</sup> CMS, *T-MSIS Implementation Tool Kit*, version 2.0, § 1.4, March 12, 2013.

**Figure 1: Timeline of T-MSIS Activities**



Source: OIG analysis of CMS documents and structured interviews, 2013.

*Clarifying data elements and definitions.* CMS published the T-MSIS data elements and definitions in a data dictionary.<sup>29</sup> The data dictionary defines the data elements States must submit to CMS for T-MSIS. Along with indicating new data elements for T-MSIS, the data dictionary changed some of the definitions for data elements that States had been submitting as part of MSIS to clarify the information CMS wants States to submit. For example, one MSIS data element is “national provider ID.” CMS instructed the State on which provider identification number to submit for each claim file in the definition. CMS changed this data element in T-MSIS to 10 data elements to reflect the different possible provider IDs.<sup>30</sup>

*Identifying critical data elements.* Following the pilot project, CMS assessed which T-MSIS data elements would be critical to support Medicaid and CHIP business needs, including meetings with internal stakeholders. As a result, CMS identified a subset of T-MSIS data elements as critical for business needs. Internal stakeholders identified the majority of T-MSIS data elements as critical. For example, the Center for

<sup>29</sup> CMS has released three T-MSIS data dictionaries. CMS released the first dictionary in February 2012, the second in February 2013, and the third in April 2013.

<sup>30</sup> The 10 T-MSIS data elements are: admitting provider national provider identifier (NPI) number, billing provider NPI, dispensing prescription drug provider NPI, health home provider NPI, operating provider NPI, prescribing provider NPI, referring provider NPI, servicing provider NPI, under direction of provider NPI, and under supervision of provider NPI.

Program Integrity identified more than two-thirds of T-MSIS data elements as critical.<sup>31</sup>

*Involving States.* CMS partnered with 12 States (hereinafter referred to as volunteer States) that volunteered to work with CMS on the planning and development of T-MSIS. These States were in a position to be some of the first States to implement T-MSIS. CMS plans to phase in the remaining States in 2013.<sup>32</sup>

CMS outlined 23 milestones to assist States in implementing T-MSIS. These milestones fall into four general stages: (1) planning, (2) design, (3) development, and (4) testing. CMS estimated that it would take States an average of 9 months to complete these milestones and implement T-MSIS.<sup>33</sup> See Appendix A for a full list of these milestones.<sup>34</sup>

Additionally, CMS held a series of meetings with volunteer States between April and December 2012. These meetings focused on volunteer States' progress in implementing T-MSIS, including discussion of any challenges they may face and possible solutions or strategies to overcome them.

In November and December 2012, CMS's contractor worked with volunteer States to complete a data mapping exercise (hereinafter referred to as data matching exercise).<sup>35</sup> This exercise consisted of volunteer States' verbally confirming whether they could provide data that matched the T-MSIS data elements in the February 2012 T-MSIS data dictionary. The purpose of this exercise was to assess the status of the data dictionary and to identify any needed clarifications. This exercise informed the development of subsequent data dictionaries.

Lastly, in December 2012, CMS conducted readiness assessments with the remaining States. CMS inquired about their readiness to begin implementing T-MSIS.

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<sup>31</sup> CMS's Center for Program Integrity, which conducts national Medicaid program integrity activities, is one of the internal stakeholders. See footnote 25.

<sup>32</sup> The volunteer States include Arizona, Arkansas, California, Michigan, Minnesota, New Jersey, New Mexico, North Carolina, Oregon, Tennessee, Texas, and Washington. These States represent approximately 40 percent of the Nation's Medicaid expenditures. Jim Gorman (CMS), *T-MSIS Pilot Overview*; OIG analysis of data from <http://kff.org/state-category/medicaid-chip/>, accessed on November 21, 2012.

<sup>33</sup> CMS, *Guidance for Automated Data Systems Requirements and Data Elements Necessary for Program Integrity, Program Oversight, and Administration*, Version 1.0. Provided to OIG on August 15, 2012.

<sup>34</sup> According to CMS staff, States are not required to complete all milestones. Additionally, States may not need to complete all milestones in order. See Appendix A for more details.

<sup>35</sup> CMS retained a contractor to assist with T-MSIS implementation.

*Releasing data quality rules.* CMS released data quality rules that addressed formatting T-MSIS data to all States on April 30, 2013. CMS expects States to apply these rules prior to submitting their T-MSIS data to CMS. These rules address some data standardization concerns that made MSIS data unusable for many national data analysis strategies (e.g., some States submit five-digit ZIP Codes to MSIS while other States submit nine-digit ZIP Codes).

*T-MSIS Guidance.* CMS released a State Medicaid Director Letter on August 23, 2013.<sup>36</sup> This letter provided an update to States on CMS's ongoing effort to improve Medicaid data through T-MSIS.<sup>37</sup>

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## METHODOLOGY

This early implementation review determines the status of T-MSIS implementation as of January 2013. It also assesses the early outcomes from 12 States.

### Scope

Our review focused primarily on the progress CMS and the 12 volunteer States had made.

Our review also used the early outcomes from the 12 volunteer States to determine whether T-MSIS will provide complete and accurate national Medicaid program integrity data upon national implementation. We did not assess the timeliness of T-MSIS data submissions. Because the 12 volunteer States were not submitting T-MSIS data at the time of our review, we could not determine States' ability to report T-MSIS data a month after claims were processed or the ability of CMS to release T-MSIS data a month after receiving the data.

Additionally, we did not assess individual State data elements or States' capacity to modify their data to comply with T-MSIS requirements. Further, we did not assess the quality of States' data or the usefulness of those data in conducting State program integrity activities.

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<sup>36</sup> CMS, State Medicaid Director Letter, August 23, 2013, (SMD# 13-004). Accessed at <http://www.medicaid.gov/Federal-Policy-Guidance/Downloads/SMD-13-004.pdf> on September 3, 2013.

<sup>37</sup> Included in this update was a change to CMS's implementation deadline. In the letter, CMS stated its goal is to have all States submitting monthly T-MSIS data by July 1, 2014. This change was made after OIG completed its analysis and has no effect on the findings of this report.

## Data Sources

*Document Request.* We requested from CMS all documents related to the status of T-MSIS implementation and CMS's plans for national implementation. Primarily, these documents included:

- meeting minutes between CMS and volunteer States (occurred between April and December 2012),
- project schedules and status updates (as of January 2013),
- State readiness assessment notes (occurred primarily in December 2012),
- T-MSIS data dictionaries, and
- *T-MSIS Implementation Tool Kit*.

See Appendix B for a detailed description of these documents. We received documents from CMS through April 2013.

*Data Matching Exercise.* CMS's contractor conducted a data matching exercise with each volunteer State. During this exercise, volunteer States verbally informed the contractor whether each T-MSIS data element that was in CMS's original February 2012 data dictionary was available in its data systems. The contractor entered the results of this exercise into a spreadsheet. CMS provided the results spreadsheet to OIG.

The exercise reviewed 769 data elements. This is fewer than the approximately 1,000 data elements that CMS expects T-MSIS to have upon completion. At the time of our data collection, CMS was still determining the final data elements. For example, during the exercise, CMS identified 29 of the 769 data elements for removal.

*Structured Interviews.* Between November 2012 and January 2013 we conducted multiple structured interviews with CMS officials and CMS's contractor responsible for designing and implementing T-MSIS. We asked about the progress toward national T-MSIS implementation and CMS's plans.

## Determining the Status of T-MSIS Implementation

To determine the status of T-MSIS implementation as of January 2013, we analyzed project schedules, meeting minutes, and information gathered during structured interviews with CMS and CMS's contractor. We reviewed project schedules and meeting minutes to identify the volunteer States' progress on completing the milestones. We used the milestone checklist from the *T-MSIS Implementation Tool Kit* to identify the milestones that CMS laid out for States. We reviewed the meeting minutes and information gathered during structured interviews to identify

steps CMS took to implement T-MSIS and move forward with additional States. We also reviewed the meeting minutes and information from structured interviews for indications of which milestones States had completed.

### **Determining Early Outcomes From Volunteer States**

We determine early outcomes from volunteer States for two issues: completeness and accuracy.

*Completeness.* We analyzed 740 data elements in the data matching exercise results spreadsheet to determine early outcomes from the volunteer States. We excluded the 29 data elements that CMS identified for removal. Specifically, we reviewed volunteer States' responses for indications of their ability to make T-MSIS data elements available to CMS.

We calculated the percentage of all data elements in three categories for all volunteer States. The three categories we created to reflect volunteer State responses to T-MSIS data element availability were: (1) match available, (2) match available but data may have gaps, and (3) match not available. See Appendix C for a definition of each category. We completed this calculation for each T-MSIS file and each volunteer State. Further, we calculated how many and what percentage of all T-MSIS data elements all volunteer States had available.

We repeated these calculations for two subsets of T-MSIS data elements: (1) data elements deemed critical by CMS entities conducting program integrity work and (2) data elements that were included in MSIS.

*Accuracy.* We analyzed the data matching exercise results spreadsheet and information from interviews with CMS to determine whether volunteer States' early outcomes indicated potential accuracy concerns. We analyzed the spreadsheet and information from interviews with CMS to determine the extent to which early outcomes indicated that: (1) data will reflect T-MSIS data dictionary definitions and (2) source data may be inaccurate.

We analyzed notes in the spreadsheet in which CMS, CMS's contractor, or volunteer States indicated potential accuracy concerns. When possible, we counted instances in which such notes indicated accuracy concerns and calculated the percentage of data elements with accuracy concerns.

### **Limitations**

This study reports on CMS's plans for national implementation of T-MSIS, as well as the status and outcomes of national implementation as of January 2013. OIG recognizes that the status of implementation and

even CMS's plans may have changed by the time OIG releases this report. Further, given the early nature of national implementation, we were unable to assess the States' ability to submit complete, accurate, and timely data. Rather, we used the volunteer States' early implementation outcomes as indicators for what CMS and the remaining States might encounter during implementation.

At the time of our data collection, the data matching exercise was the best available proxy for the data that volunteer States had available. Because the exercise covered 740 of the 1,000 data elements in T-MSIS, it is a strong indicator of States' ability to provide the T-MSIS data elements. However, the data elements in the exercise were not the final version of T-MSIS data elements that CMS will ask States to submit. Subsequent to this exercise, CMS made definitional changes and refined record layouts in an updated data dictionary. This means that States' ability to submit the final data elements may differ from our results. In addition, the data from the exercise are self-reported State data. We did not verify whether States could actually provide the data that they reported they could.

We could not calculate a percentage for all types of accuracy concerns mentioned by CMS and States. When we could confidently interpret a comment on the data matching exercise results spreadsheet as a potential accuracy concern, we counted it and calculated a percentage. In other instances, when we could not confidently interpret a comment as a potential accuracy concern, we relayed the nature of the concern.

### **Standards**

This study was conducted in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

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## FINDINGS

### **Twelve Volunteer States Made Some Progress Implementing T-MSIS; However, Most Other States Had Not Started**

As of January 2013, the 12 volunteer States had made progress toward T-MSIS implementation, but most of the remaining States had not started. The volunteer States completed, on average, 7 of the 23 T-MSIS milestones in the 6 months from when implementation began in July 2012. Seventeen additional States indicated that they were ready to start implementation in 2013. The remaining 22 States did not have a timeframe for starting implementation.

#### ***While volunteer States made some progress, they may exceed the estimated implementation time***

As of January 2013, all volunteer States had completed some of the T-MSIS implementation milestones but no volunteer State had completed all of them.

Volunteer States made the most progress in the first stage, planning. All volunteer States completed or partially completed the seven milestones associated with this stage. However, only five volunteer States completed all of the milestones associated with this stage.

No volunteer States completed the other three stages—design, development, and testing. Further, four volunteer States have not started working on milestones associated with development and testing. Table 1 is a broad overview of the progress that volunteer States made in the four stages. For a complete breakdown of volunteer States' progress by individual implementation milestone, see Appendix D.

**Table 1: Volunteer States' Progress Toward T-MSIS Implementation Milestones**

Milestone Stages	Completed	Partially Completed	Not Started
1. Planning (7 milestones)	5	7	0
2. Design (6 milestones)	0	12	0
3. Development (3 milestones)	0	8	4
4. Testing (7 milestones)	0	7	5

Source: OIG analysis of T-MSIS project schedules and volunteer State status updates, 2013.

Volunteer States experienced some delays that may have hindered their progress, including delays finalizing contracts to assist with T-MSIS implementation. Securing contracts is part of identifying T-MSIS project resources, which is a stage 1 milestone, but delays in contracts also affect

States' ability to complete other milestones, such as mapping their data elements to the T-MSIS data elements. Five volunteer States indicated that they faced delays of this nature.

Volunteer States also faced delays because CMS did not release needed information when it initially expected. For instance, CMS initially expected that it would release the revised T-MSIS data dictionary in September or October 2012. In fact, CMS did not release the revision until February 2013, delaying volunteer States' ability to re-map their data elements to T-MSIS data elements. Further, CMS did not release the data quality rules until April 2013. Volunteer States need these rules to develop and test data verification/business rules and to validate successfully the eight T-MSIS data files.

Possibly because of these delays volunteer States completed fewer milestones, on average, than would be expected at this point in CMS's estimated 9-month completion timeframe. Volunteer States worked on milestones for at least 6 months by the time of our data collection, but were able to complete only between 3 and 13 of them, mainly in the planning phase. To stay on schedule to complete the milestones within the estimated 9-month completion time, States would have to complete the design, development, and testing of T-MSIS in 3 months.

The remaining 39 States may not face the same challenges that volunteer States faced. CMS's experiences with the volunteer States may enable it to work with the remaining States to avoid similar challenges and thus have fewer delays. In addition, CMS has released the data quality rules, so the remaining States will not have to wait for those as they begin implementing T-MSIS. However, the remaining States may still experience delays, such as those related to finalizing contracts or challenges unique to their States.

***The remaining 39 States reported varied timeframes for when they can begin implementing T-MSIS***

As of the December 2012 readiness assessments, 17 of the remaining 39 States indicated to CMS that they anticipate being ready to begin implementing T-MSIS in 2013. The final 22 States did not indicate when they could begin implementing T-MSIS.<sup>38</sup> These States listed various reasons for their hesitation, including lack of information about T-MSIS and competing demands for State resources.

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<sup>38</sup> Included in the group of 22 States that did not have a timeline for T-MSIS implementation are 4 States for which OIG did not receive records of their readiness assessments. These States are Iowa, Missouri, New Hampshire, and Wyoming.

## **CMS Has Not Established a Deadline for When National T-MSIS Data Will Be Available**

CMS does not have a specific timeframe for when it will begin to rely on T-MSIS as the sole national Medicaid dataset. Further, CMS does not have a timeline for switching completely from the use of MSIS data to T-MSIS data. Instead, the switch from MSIS to T-MSIS will happen over time on a State-by-State basis. CMS staff indicated that each State will switch from MSIS to T-MSIS only after it demonstrates operational readiness to implement T-MSIS and successfully transmits T-MSIS data.

Additionally, CMS has not clearly defined when it expects all States to complete T-MSIS implementation. In August 2012, CMS staff stated that the goal was for all States to submit T-MSIS data as of January 1, 2014. In anticipation of that goal, CMS indicated that its goal was to be ready to accept data from States by that date. However, later, in 2013, CMS staff indicated that CMS modified its expectation for States by saying that all States should be either working on T-MSIS or committed to working on T-MSIS by January 1, 2014. CMS added terms and conditions on funding secured through an APD to reflect this shift. CMS staff indicated that States that are not submitting T-MSIS data by January 1, 2014 must develop a work plan to submit T-MSIS data as soon as possible.

What steps CMS might take to enforce any deadline is unclear. When States asked whether there was flexibility in meeting the January 2014 deadline or whether there were penalties for not doing so, CMS staff informed States that they were uncertain whether CMS would impose any penalties and what those penalties might be. CMS's ability to enforce a deadline is a concern because 8 of the 39 remaining States asked CMS about the January 2014 deadline during the readiness assessments; 3 States asked specifically about potential penalties for not meeting the deadline.

## **Volunteer States Indicated That Their Data Systems Did Not Have All T-MSIS Data Elements**

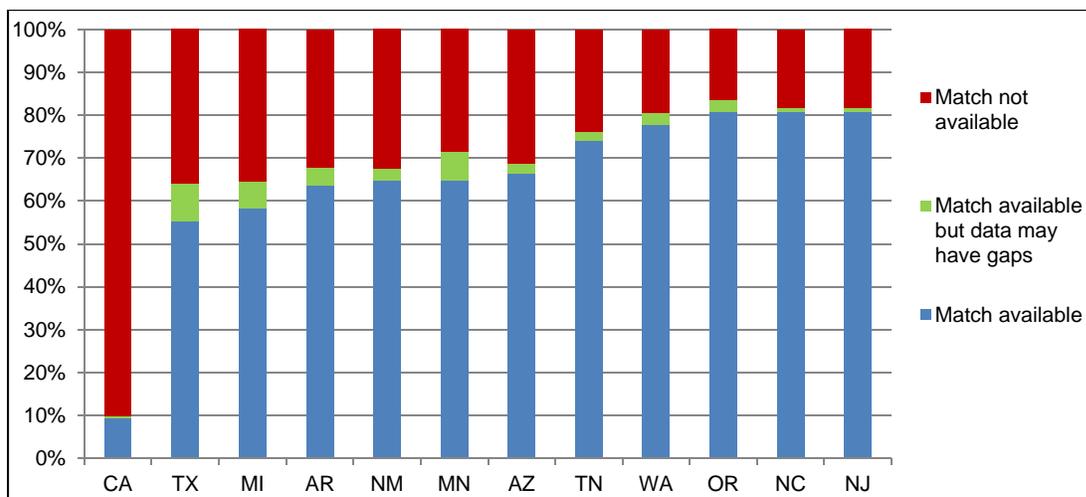
Upon implementation, T-MSIS will likely not contain all data elements across all volunteer States for two primary reasons. First, volunteer States indicated that they do not have data available for all T-MSIS data elements in their State data systems. Second, CMS's T-MSIS processes allow States to submit a subset of T-MSIS data elements.

### ***Volunteer States do not have complete T-MSIS data available***

Results from the data matching exercise indicated that no volunteer State could make all of the 740 data elements available for T-MSIS. In other words, States indicated that their data systems do not capture data that could match every T-MSIS data element.

Volunteer States’ reported mixed abilities to make data available for T-MSIS data elements. Data availability ranged from 9 percent of data elements to 81 percent; 11 of the 12 volunteer States reported data available for more than 50 percent of the data elements. Data for the remaining data elements were either not currently available or available with indications of gaps in the data.<sup>39</sup> T-MSIS data element availability by volunteer State is represented in Figure 2. To see each volunteer States’ data element availability by file, see Appendix E.

**Figure 2: T-MSIS Data Availability by Volunteer State**



Source: OIG analysis of data matching exercise results spreadsheet, 2013.

CMS faces similar challenges with data availability for T-MSIS data elements deemed critical for program integrity activities by the Center for Program Integrity as it does for T-MSIS data elements as a whole. The percentage of data elements that were critical for program integrity was similar to the overall percentage of available T-MSIS data elements. Specifically, States’ individual abilities to make data available for critical program integrity data elements ranged from 9 percent to 84 percent; 11 of the volunteer States reported at least 50 percent of these critical T-MSIS elements as available. This similarity is unsurprising because the Center for Program Integrity deemed two-thirds of the data elements as critical for conducting national Medicaid program integrity activities.

States also indicated that data for T-MSIS data elements that were also required as part of MSIS may not be available. Data for T-MSIS data elements that were also in MSIS (28 percent of T-MSIS data elements)

<sup>39</sup> Examples of gaps in data include: notes saying that a volunteer State had certain data available only for fee-for-service claims or notes indicating that a volunteer State had only a subset of the values that CMS requested for T-MSIS data elements. Data that are not available are composed of all data elements for which volunteer States did not clearly have matches available.

were slightly more available than T-MSIS data elements overall. Availability of these elements ranged from 13 percent to 87 percent; 11 volunteer States reported at least 50 percent availability.

A small percentage of the same T-MSIS data elements are available across all volunteer States. Approximately 4 percent (27 data elements) of T-MSIS data elements are available from all volunteer States. The percentage of data elements available from volunteer States increased to 25 percent when we excluded California from our analysis. The results of California's data matching exercise indicated an unusually high percentage of T-MSIS data elements for which matches were not available.<sup>40</sup> For a list of the 27 data elements that all volunteer States can provide, see Appendix F.

***Upon implementation, CMS will accept, as complete, the data volunteer States have available***

CMS will create an individualized control file for each volunteer State. These files will specify the T-MSIS data elements that each volunteer State reports it is able to provide upon implementation. These files will be created after States submit formal mapping documents to CMS and CMS reviews the results for completeness.<sup>41</sup> States will need to justify their reasons for not providing specific data elements and provide an action plan to obtain the missing data elements. CMS will use each volunteer States' individualized files to determine whether their data submissions are complete.

Modifications to volunteer States' initial individualized control files after implementation depend on the State. In some cases, the initial individualized files will represent a subset of T-MSIS that encompasses all of the data elements a State will be required to submit. For example, Arkansas does not use managed care plans for its managed care program, so it does not have the data elements requested in the T-MSIS managed care plan information file, nor would CMS expect Arkansas to submit those data. In other cases, CMS will alter States' initial individualized control file to include additional data elements as the States expand the number of data elements they are able to provide.

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<sup>40</sup> Specifically, California indicated that 81 percent of elements were "TBD" (i.e., to be determined). California indicated that mapping its data to the T-MSIS data elements would involve reviewing 24 internal data sources.

<sup>41</sup> States' mapping documents indicate, in writing, which data elements available in their State systems map to the T-MSIS data elements in the April 2013 data dictionary.

## **CMS and Volunteer States Reported Concerns About the Accuracy of T-MSIS Data**

CMS and volunteer States raised concerns about States' ability to submit accurate T-MSIS data. CMS, CMS's contractor, and volunteer States raised two types of concerns during the T-MSIS data matching exercise about whether the T-MSIS data submitted by States will be accurate. The first concern is that data from States may not reflect the definition of the T-MSIS data element in question. For example, while CMS requests that States report the data element for birth weight in grams, some States indicated that they would report birth weight in pounds. The second concern is that State source data may be inaccurate. For example, in some cases, State agencies other than the States' Medicaid agencies collect and store the data necessary for T-MSIS. Some volunteer States indicated concerns that they cannot guarantee the accuracy of data collected and stored by these other State agencies.

CMS and its contractor described three reasons why T-MSIS data may not reflect the data element definitions: (1) different derivation methods may cause inconsistent data reporting, (2) T-MSIS data element definitions may be unclear, and (3) States may submit data that do not match the data element definitions.

CMS questioned whether volunteer States' derivation methods when pulling or deriving T-MSIS data elements from sources outside MMIS would lead to inconsistent data reporting across volunteer States. For example, CMS expressed concerns over whether the data elements indicating an individual's disability status were derived consistently across States because States may use and store disability codes in different ways. CMS had this concern for 19 percent of T-MSIS data elements.

Additionally, CMS's contractor expressed concerns about whether CMS clearly defined some data elements. Some data element definitions lacked specificity that could lead to the submission of inaccurate data. For example, CMS's contractor noted that the definition for "billing location" needed clarification. CMS's contractor explained that volunteer States were unsure whether this data element asks for the location of where a service was performed or where the physician's main business office is located.<sup>42</sup>

CMS's contractor also raised concerns that States may submit data that do not match CMS data element definitions. CMS's contractor noted that many volunteer States collect data concerning beneficiary ethnicity and

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<sup>42</sup> Not all medical services are provided at the physician's main business address; many physicians perform services in both an office setting and a hospital setting.

financial assistance through State agencies other than the State Medicaid agencies. These other State agencies may not code the data according to T-MSIS data element definitions.

Volunteer States also expressed potential accuracy concerns for a small percentage of data elements. Volunteer States' comments indicated potential accuracy concerns related to their ability to submit data that reflected the data element definitions and the accuracy of their source data. Potential accuracy concerns ranged by State between 2 percent and 9 percent of data elements for which they had matches available. For a breakdown of available data elements with potential accuracy concerns by State, see Table 2.

**Table 2: Available T-MSIS Data Elements with Potential Accuracy Concerns Identified by Volunteer State**

States	Number Available	Number of Accuracy Concerns	Percentage With Accuracy Concerns
AR	470	18	4%
AZ	491	15	3%
CA	69	5	7%
MI	432	18	4%
MN	479	43	9%
NC	598	33	6%
NJ	598	13	2%
NM	479	15	3%
OR	597	11	2%
TN	547	27	5%
TX	409	24	6%
WA	575	42	7%

Source: OIG analysis of data matching exercise results spreadsheet, 2013.

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## CONCLUSION AND RECOMMENDATIONS

Although CMS and 12 volunteer States have made some progress with T-MSIS, early T-MSIS implementation outcomes raised questions about the completeness and accuracy of T-MSIS data upon national implementation. Creating and obtaining a national Medicaid dataset is a complex endeavor given the structure of the Medicaid program. To that end, CMS has planned and designed a dataset that appears to address various stakeholder data needs and concerns, including the planned collection of data elements important for national Medicaid program integrity strategies. However, early evidence raises concerns about volunteer States' abilities to submit complete and accurate T-MSIS data; only 25 percent of T-MSIS data elements from the February 2012 data dictionary were available from all volunteer States.<sup>43</sup> Additionally, limited implementation progress has delayed CMS's and States' abilities to test monthly submission requirements.

The early outcomes of volunteer States' efforts to implement T-MSIS may also provide insight into the remaining 39 States' abilities to implement T-MSIS. Specifically, the remaining States may also not have all T-MSIS data elements available in their data systems. Further, many of the potential accuracy issues identified by CMS and volunteer States may also exist in the remaining States' T-MSIS data.

Complete, accurate, and timely national Medicaid data are essential to help protect the integrity of Medicaid. CMS has multiple program integrity projects underway that require T-MSIS data to be fully functional. Additionally, OIG and other external stakeholders could more effectively protect Medicaid with complete, accurate, and timely national Medicaid data.

The earlier T-MSIS is fully functional, the earlier CMS and others can support States by using advanced data analytics nationally to monitor Medicaid to prevent fraud, waste, and abuse. To help create a fully functional T-MSIS, we make the following recommendations to CMS.

### **CMS Should Establish a Deadline for When National T-MSIS Data Will Be Available**

CMS should provide a deadline so that stakeholders know when to expect data that is of sufficient completeness and quality that it can be effectively used for program integrity activities. CMS should provide a deadline by which all States need to be submitting complete T-MSIS data. As part of its effort to establish a deadline, CMS should provide a clear and

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<sup>43</sup> Excluding California.

transparent timeline for the rest of the implementation process so that States know what is expected of them. The timeline should clearly identify when the remaining States must begin working on T-MSIS.

To communicate a deadline and timeline to States and stakeholders, CMS could issue a State Medicaid Director letter or other policy guidance. This letter or guidance could document what the deadline is for State implementation and what is required of States as they implement T-MSIS, as well as communicate to stakeholders when T-MSIS will be complete and usable for national Medicaid activities, including program integrity.

To be more transparent about the status of T-MSIS implementation, CMS could provide periodic updates to stakeholders. This could be accomplished in numerous ways, such as a regularly updated Web site or regular status updates sent to stakeholders. Updates should include a status of each State's T-MSIS implementation.

### **CMS Should Ensure That States Submit Required T-MSIS Data**

CMS should clearly state that T-MSIS is required. If States fail to begin submitting T-MSIS data by the implementation deadline, CMS should use its enforcement mechanisms to compel States to begin submitting required T-MSIS data. CMS has two statutory enforcement mechanisms (i.e., withhold matching payments for data systems or withhold matching payments for medical assistance for managed care enrollees) that could be used if States do not begin submitting T-MSIS data by the deadline.

CMS may also want to seek legislative authority to employ alternative tools to compel State participation, such as interim sanctions for States that do not implement T-MSIS by the deadline. Alternatively, CMS could seek legislative authority to encourage State participation through an incentive program.

This recommendation builds on a past OIG recommendation that CMS enforce the Federal requirements that States submit managed care encounter data.<sup>44</sup> CMS responded that it intended to review statutory and regulatory authorities to determine areas in which it could strengthen the reporting of managed care encounter data.

### **CMS Should Ensure That T-MSIS Data Are Complete, Accurate, and Timely Upon T-MSIS Implementation**

CMS should ensure that the submitted T-MSIS data are complete, accurate, and timely. The lack of complete, accurate, and timely MSIS data prevented it from being used effectively to protect the integrity of

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<sup>44</sup> OIG, *Medicaid Managed Care Encounter Data: Collection and Use*.

Medicaid. CMS should work to ensure that these problems are not repeated in T-MSIS.

CMS could establish standards for the completeness, accuracy, and timeliness of T-MSIS data that States should meet once they have implemented T-MSIS. These standards should establish specific expectations for the completeness, accuracy, and timeliness of the data. Establishing specific standards would allow CMS and other oversight bodies to hold States accountable for the quality and timeliness of their T-MSIS data.

To enforce these standards, CMS could use existing accountability tools. Or CMS could seek legislative action for new tools that would compel States to submit data that are complete, accurate, and timely.

CMS could work with States to ensure the submission of complete, accurate, and timely data. For example, to improve the completeness of T-MSIS data, CMS could work with States to identify ways that States could collect information that they currently do not collect that is needed to meet T-MSIS data requirements. To improve the accuracy of T-MSIS data, CMS could create standard derivation methods for States to use to ensure uniformly derived data elements.

OIG has previously made a recommendation to CMS to improve the quality of nationally available Medicaid data so that better data are available for program integrity efforts. Specifically, OIG recommended that CMS improve the quality of data that program integrity contractors can access for conducting data analysis.<sup>45</sup> CMS responded that it intended to develop improved data systems for Medicaid program integrity and that T-MSIS was the chosen system.

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<sup>45</sup> OIG, *Early Assessment of Review Medicaid Integrity Contractors*.

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## AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

CMS concurred with our recommendations and provided details about ongoing activities in support of our recommendations. OIG acknowledges CMS's already planned activities and encourages CMS to take the additional steps necessary to fulfill our recommendations and to ensure that T-MSIS is successful.

For the first recommendation, CMS indicated that it is engaged in informing key internal stakeholders of when to expect data in the T-MSIS format. CMS also stated that it is working to issue a State Medicaid Director Letter that it believes will reinforce the importance of meeting the T-MSIS compliance date. One week after providing comments to this report, CMS issued this letter and provided a deadline for when "all States are expected to demonstrate operational readiness to submit T-MSIS files, transition to T-MSIS, and submit timely T-MSIS data."<sup>46</sup> OIG reiterates that our recommendation is that CMS should establish a deadline for when T-MSIS data that is complete, accurate, and timely will be available. This deadline may be different than a compliance deadline when States are capable of sending data to CMS in T-MSIS format. In addition, OIG encourages CMS to think broadly about T-MSIS stakeholders. A number of external stakeholders who conduct program integrity work could benefit from better quality national Medicaid data. They should also be updated as to the progress of T-MSIS and informed as to when T-MSIS data will be available.

For the second recommendation, CMS believes that using the existing statutory enforcement mechanisms is an effective way to ensure timely T-MSIS data. OIG encourages CMS to include information about its intent to use the statutory enforcement mechanisms to enforce T-MSIS deadlines in any T-MSIS guidance provided to States. The State Medicaid Director Letter did not address T-MSIS enforcement mechanisms.

For the third recommendation, CMS stated that it is working to create a set of data quality rules to govern T-MSIS data submission. CMS also plans to monitor States' progress to ensure improved data reporting when T-MSIS data are not available at implementation. OIG encourages CMS to hold States accountable to the data quality rules.

Having access to complete, accurate, and timely national Medicaid program integrity data is critically important. OIG will continue to

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<sup>46</sup> CMS, State Medicaid Director Letter.

monitor T-MSIS beyond the early implementation phase to determine whether the identified vulnerabilities have been addressed.

We did not make any changes to the report based on CMS's comments. For the full text of CMS's comments, see Appendix G.

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## APPENDIX A

### Implementation Milestones

The Centers for Medicare & Medicaid Services (CMS) created the implementation milestones for States as a “high-level list of major milestones that States should consider within their schedule for successful implementation.”<sup>47</sup>

States may not have to complete all of the milestones. In fact, States may not need to complete at least 2 of the 23 milestones. Specifically, not all States will need to complete milestones 5 and 6 (stage 1). Some States may not have to complete milestone 5—submitting an advanced planning document (APD) to CMS—because they may not require financial assistance to implement the Transformed Medicaid Statistical Information System (T-MSIS).<sup>48</sup> Some States may not need to complete milestone 6—hardware and software procurement completed—if they plan to use existing hardware and software.

Additionally, CMS staff explained that States might not need to complete the milestones in order. For example, States may test their ability to send a sample of data to CMS (milestone 19) prior to completely mapping their State data elements to T-MSIS data elements (milestone 9).

#### Planning

1. T-MSIS on-boarding/orientations completed
2. T-MSIS State-level project approvals obtained
3. T-MSIS detailed project schedule developed
4. T-MSIS project team identified
5. APD submitted to CMS
6. Hardware and software procurement completed
7. T-MSIS project planning activities completed

#### Design

8. Data dictionary/data file/business rules review completed
9. Data mapping for all eight files completed and base lined with CMS

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<sup>47</sup> CMS, *T-MSIS Implementation Tool Kit*, version 2.0, § 3.4, March 12, 2013.

<sup>48</sup> CMS requires States to submit APDs when they request financial assistance to make changes to their Medicaid Management Information Systems. See 42 CFR § 433.112. States use the APD to outline any changes they are making, the rationale for them, and their expected costs.

10. Software development life cycle (SDLC) T-MSIS requirements phase completed
11. Operational structure of data files defined
12. Extract validation and format design defined
13. SDLC T-MSIS design phase completed

#### Development

14. Data extraction process developed and tested (if applicable)
15. Data verification/business rules developed and tested
16. SDLC T-MSIS development phase completed

#### Testing

17. End-to-end data verification test planning complete – at State level
18. SDLC end-to-end integration testing complete – at State level
19. Successful transmission of test data to CMS
20. Successful transmission of data file (all four claims files, eligibility, provider, managed care, third-party liability)
21. Successful validation of all data files (all four claims files, eligibility, provider, managed care, third-party liability) per business rules
22. Production readiness approved by CMS (email to State)
23. Submission of first set of monthly production file

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## APPENDIX B

### Description of Documents Reviewed

<u>Meeting minutes:</u>	Records of status update meetings that occurred between the Centers for Medicare & Medicaid Services (CMS), its contractor, and the volunteer States.
<u>Project schedules and status updates:</u>	CMS records of initial schedules for the Transformed Medicaid Statistical Information System (T-MSIS) implementation and the status of implementation activities in the volunteer States.
<u>State Readiness Assessment Notes:</u>	Records of CMS's readiness assessment calls with the remaining 39 States to determine their ability to implement T-MSIS.
<u>T-MSIS Data Dictionaries:</u>	Documents containing the names, definitions, and format for T-MSIS data elements.
<u>T-MSIS Implementation Tool Kit:</u>	Roadmap for States to follow as they continue, or begin, implementing T-MSIS. Developed from CMS's experience with the volunteer States, it contains milestones, guidance, and best practices. CMS expected to release this to all States in May 2013.

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## APPENDIX C

### Definitions of Office of Inspector General Completeness Categories

#### Match Available:

Available: Volunteer State indicated that it has this data element.

Derivable: Volunteer State indicated that it could obtain the data element by performing a calculation, pulling from another file, or creating a crosswalk between existing data. For example, if a volunteer State indicated that a data element was stored in a different data system and required a crosswalk to fulfill the Transformed Medicaid Statistical Information System (T-MSIS) definition and format, we considered the data element derived.

#### Match Available But Data May Have Gaps:

Partially available: Volunteer State indicated that it may not have all of the information requested in the T-MSIS data dictionary definition. For example, if a volunteer State indicated that it could provide a certain data element for only fee-for-service claims, we considered the data element to be partially available.

#### Match Not Available:

Not available: Volunteer State indicated that it did not have the requested data element.

To be determined: Volunteer State indicated that the requested data element was “TBD” or that it was still working to determine whether the requested data element was available.

Unknown: We could not determine the availability of the data element using information from the data matching exercise results spreadsheet, or the volunteer State did not provide a response to the requested data element.

Not applicable: Volunteer State indicated that a data element does not apply to it. For example, Arkansas has a limited managed care program and indicated that almost all

of the data elements in the managed care file were not applicable.<sup>49</sup>

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<sup>49</sup> Arkansas operates its Medicaid program through a primary care case management program. This means that providers are reimbursed on a fee-for-service basis for treatment and that the State does not have managed care plan information. Very few of the managed care plan information file data elements apply to Arkansas's managed care program.

## APPENDIX D

### Progress Toward Milestones

**Table D-1: Individual States' Progress Toward T-MSIS\* Milestones**

Milestone	Arkansas	Arizona	California	Michigan	Minnesota	North Carolina	New Jersey	New Mexico	Oregon	Tennessee	Texas	Washington
1. T-MSIS onboarding/orientations completed	Y	Y	Y	P	Y	Y	Y	Y	Y	Y	Y	Y
2. T-MSIS State-Level project approvals obtained	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	Y
3. T-MSIS detailed project schedule developed	Y	Y	U	U	Y	U	Y	Y	Y	Y	U	Y
4. T-MSIS project team identified	Y	Y	Y	Y	P	Y	Y	Y	Y	Y	Y	Y
5. Advanced planning document submitted to CMS**	P	Y	X	N	P	Y	Y	X	Y	Y	Y	X
6. Hardware and software procurement completed	P	Y	Y	X	N	U	X	X	P	Y	X	Y
7. T-MSIS project planning activities completed	P	Y	U	P	P	U	Y	Y	P	Y	U	Y
8. Data dictionary/data file/business rules review completed	P	P	P	P	P	P	P	P	U	U	P	U
9. Data mapping for all eight files completed and base lined with CMS	P	Y	P	P	P	P	P	Y	U	U	P	U

\*T-MSIS = Transformed Medicaid Statistical Information System; \*\*CMS = Centers for Medicare & Medicaid Services

Note: Y = Completed milestone; P = Milestone in progress; X = Milestone not necessary; U = Progress unknown by Office of Inspector General (OIG); N = Milestone not complete.

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**Table D-1: Individual States' Progress Toward T-MSIS Milestones,  
continued**

Milestone	Arkansas	Arizona	California	Michigan	Minnesota	North Carolina	New Jersey	New Mexico	Oregon	Tennessee	Texas	Washington
10. Software Development Life Cycle (SDLC) T-MSIS requirements phase completed	N	P	P	P	N	N	P	P	P	P	N	P
11. Operational structure of data files defined	N	P	P	P	N	N	P	P	P	P	N	P
12. Extract validation and format design defined	N	N	N	P	N	N	P	P	P	P	N	P
13. SDLC T-MSIS design phase completed	N	Y	P	P	N	N	P	Y	P	Y	N	Y
14. Data extraction process developed and tested ( If applicable)	N	P	P	P	N	N	P	P	P	Y	N	Y
15. Data verification/business rules developed and tested	N	U	U	P	N	N	P	P	P	P	N	P
16. SDLC T-MSIS development phase completed	N	P	P	P	N	N	P	P	P	P	N	P
17. End-to-end data verification test planning complete - at State level	N	N	N	P	N	N	P	P	P	P	N	P
18. SDLC end-to-end integration testing complete - at State level	N	N	N	P	N	N	P	P	P	P	N	P

Note: Y = Completed milestone; P = Milestone in progress; X = Milestone not necessary; U = Progress unknown by Office of Inspector General (OIG); N = Milestone not complete.

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**Table D-1: Individual States' Progress Toward T-MSIS Milestones,  
continued**

Milestone	Arkansas	Arizona	California	Michigan	Minnesota	North Carolina	New Jersey	New Mexico	Oregon	Tennessee	Texas	Washington
19. Successful transmission of test data to CMS	N	Y	N	Y	N	N	Y	Y	Y	Y	N	Y
20. Successful transmission of data file (all four claims files, eligibility, provider, managed care, third-party liability)	N	N	N	P	N	N	P	P	P	Y	N	Y
21. Successful validation of all data files (all four claims files, eligibility, provider, managed care, third-party liability) per business rules	N	N	N	U	N	N	P	P	P	P	N	P
22. Production readiness approved by CMS (email to State)	N	N	N	N	N	N	P	N	N	N	N	U
23. Submission of first set of monthly production file	N	N	N	N	N	N	P	N	N	N	N	N

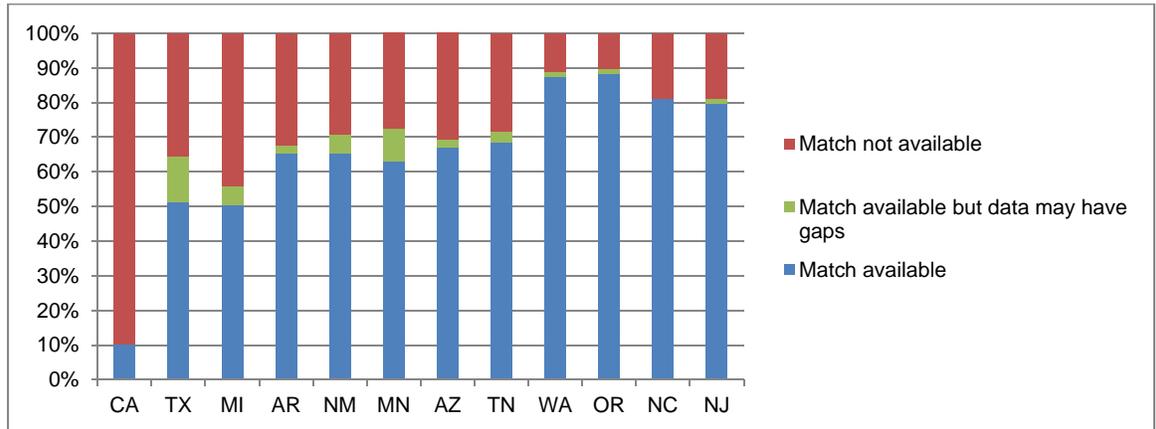
Source: OIG analysis of T-MSIS project schedules and volunteer State updates, 2013.

Note: Y = Completed milestone; P = Milestone in progress; X = Milestone not necessary; U = Progress unknown by Office of Inspector General (OIG); N = Milestone not complete.

## APPENDIX E

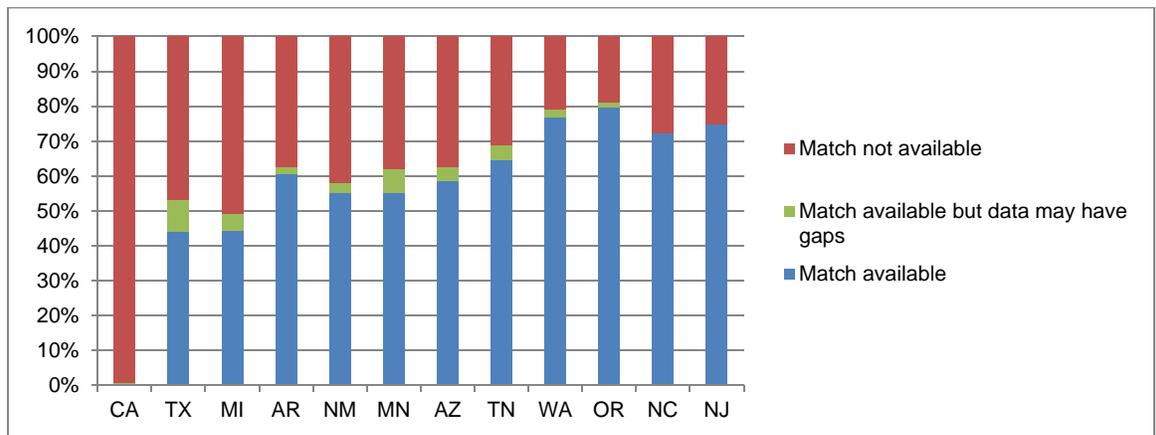
### Availability of Transformed Medicaid Statistical Information System Data Elements by File for All Volunteer States

**Table E-1: Availability of Inpatient Claim File, by State**



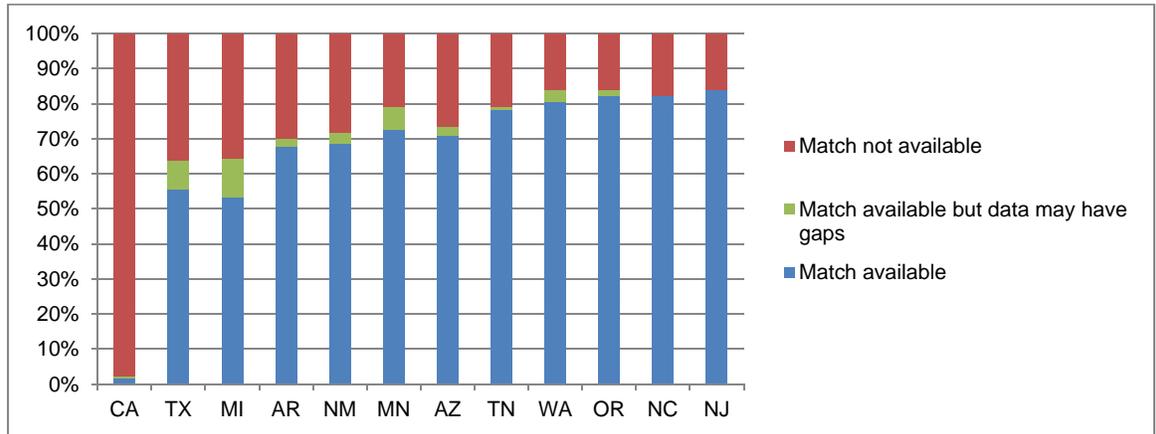
Source: Office of Inspector General (OIG) analysis of data matching exercise results spreadsheet, 2013.

**Table E-2: Availability of Long-Term-Care Claim File, by State**



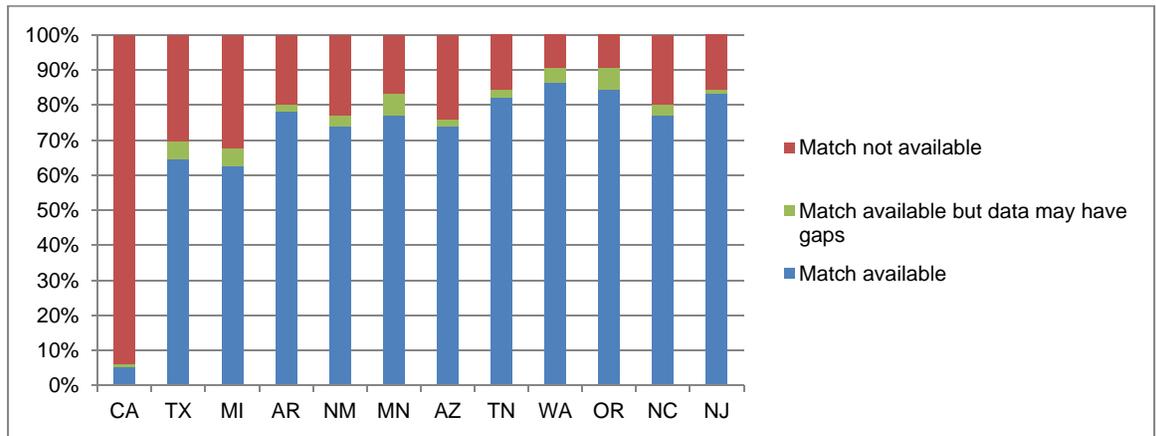
Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-3: Availability of Outpatient Claim File, by State**



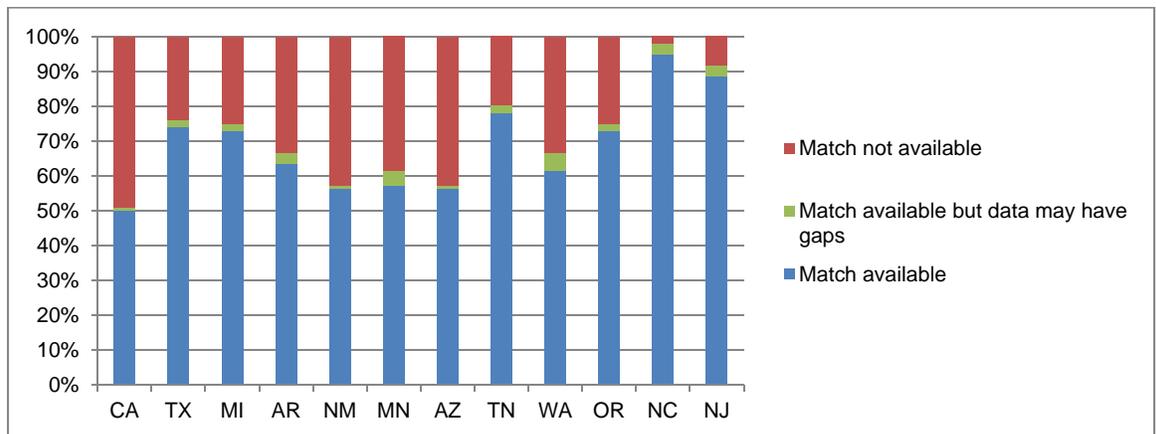
Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-4: Availability of Pharmacy Claim File, by State**



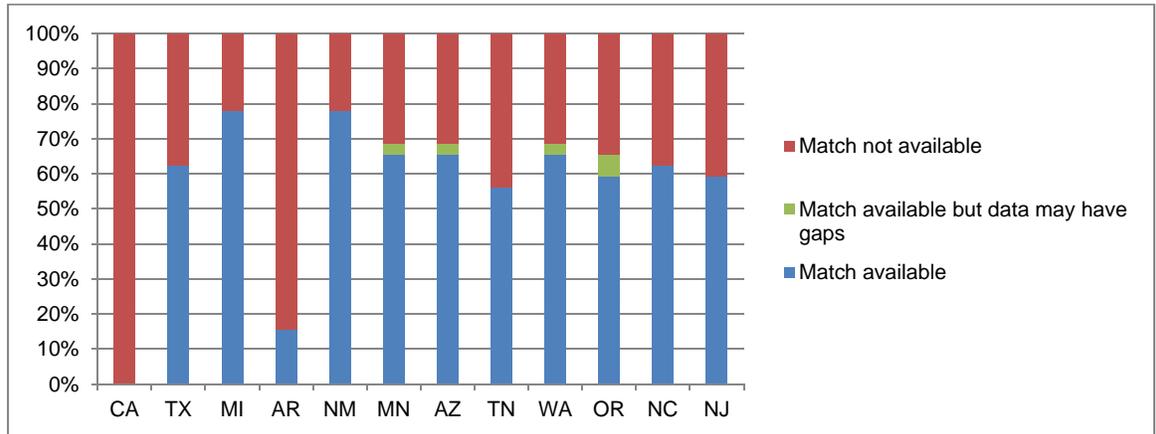
Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-5: Availability of Eligibility File, by State**



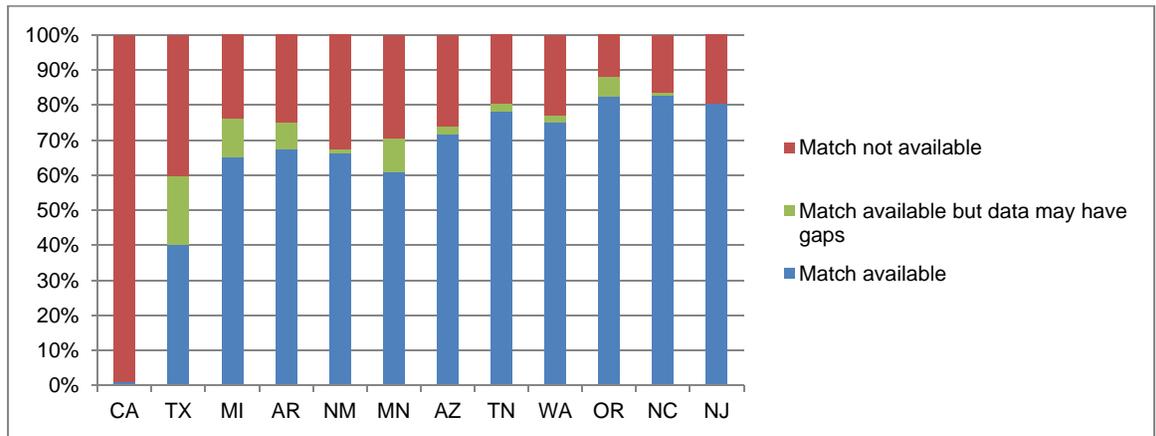
Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-6: Availability of Managed Care File, by State**



Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-7: Availability of Provider File, by State**



Source: OIG analysis of data matching exercise results spreadsheet, 2013.

**Table E-8: Availability of Third-Party Liability File, by State**



Source: OIG analysis of data matching exercise results spreadsheet, 2013.

## APPENDIX F

### Transformed Medicaid Statistical Information System (T-MSIS) Data Elements Available in All Volunteer States

**Table F-1: T-MSIS Data Elements That All Volunteer States Reported as Match Available**

<b>T-MSIS File</b>	<b>Data element</b>
Claim: Inpatient	Revenue units
Claim: Pharmacy	Medicaid Statistical Information System (MSIS) identification number
Claim: Pharmacy	Prescription fill date
Claim: Pharmacy	Prescription number
Eligibility	Basis of eligibility code
Eligibility	Children's Health Insurance Program code
Eligibility	County code
Eligibility	County name
Eligibility	Date of birth
Eligibility	Days of eligibility
Eligibility	Eligible ZIP Code
Eligibility	Eligibility status end date
Eligibility	Eligibility status start date
Eligibility	Federal fiscal year month
Eligibility	First name
Eligibility	Health insurance coverage
Eligibility	Last name
Eligibility	Maintenance assistance status
Eligibility	Managed care plan enrollment end dates
Eligibility	Managed care plan enrollment start dates
Eligibility	Middle initial
Eligibility	MSIS case number
Eligibility	Restricted benefits code
Eligibility	Sex
Eligibility	Social Security Number
Eligibility	State

**Table F-1: T-MSIS Data Elements That All Volunteer States Reported as Match Available, *continued***

T-MSIS File	Data element
Eligibility	ZIP Code <sup>50</sup>

Source: Office of Inspector General analysis of data matching exercise results spreadsheet, 2013.

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<sup>50</sup> In the data matching exercise results spreadsheet, this data element was indicated as duplicative. Notes in the spreadsheet indicate that it was to be removed from the February 2013 data dictionary.

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## APPENDIX G

### Agency Comments

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Medicare & Medicaid Services

*Administrator*  
Washington, DC 20201

**DATE:** AUG 15 2013

**TO:** Daniel R. Levinson  
Inspector General

**FROM:** Marilyn Tavenner */SI/*  
Administrator

**SUBJECT:** Office of Inspector General (OIG) Draft Report: "Early Outcomes Show Limited Progress for the Transformed Medicaid Statistical Information System" (OEI-05-12-00610)

The Centers for Medicare & Medicaid Services (CMS) appreciates the opportunity to review and comment on the above-referenced draft report. CMS concurs with all recommendations and is actively engaged in tasks to address these recommendations as part of the normal course of project activities. Please review additional details below relating to the recommendations, which have been broken out by topic area to more succinctly address the recommendation areas.

#### **OIG Recommendation 1**

The OIG recommends that CMS Should Establish a Deadline for When National T-MSIS Data Will Be Available.

*CMS should provide a deadline so that stakeholders know when to expect data that is of sufficient completeness and quality that it can be effectively used for program integrity activities. CMS should provide a deadline by which all States need to be submitting complete T-MSIS data. As part of its effort to establish a deadline, CMS should provide a clear and transparent timeline for the rest of the implementation process so that States know what is expected of them. The timeline should clearly identify when the remaining States must begin working on T-MSIS.*

#### **CMS Response**

We concur. CMS is actively engaged in informing key stakeholders via CMS senior leadership data councils of when to expect Medicaid and Children's Health Insurance Program (CHIP) operational data in the Transformed Medicaid Statistical Information System (T-MSIS) format. Standardized reports reflecting critical milestones in T-MSIS implementation activities are distributed and reviewed by said councils. In addition, all of the states have been instructed to add a series of critical milestones that are to be integrated into their internal project work plans.

CMS is requesting updates to these milestones on a bi-weekly basis. These milestones will be loaded to a CMS dashboard accessible to the stakeholder community via the web to reflect state progress towards implementation. Lastly, CMS will shortly be providing states with CMS critical milestones that are relevant for states to align in their projects, i.e., timeframes for state file processing within the CMS environment.

The Medicaid and CHIP Business Information and Solutions (MACBIS) Council provides executive leadership for developing and implementing a comprehensive information management and data strategy for Medicaid and CHIP programs. This Council provides a review and approval process and executive oversight of the Medicaid and CHIP enterprise data management practices including data quality, integration, administration, architecture, and storage/warehousing. Council members represent the full complement of leadership from key stakeholders requiring Medicaid and CHIP data. T-MSIS progress is communicated monthly and relevant stakeholder requests related to T-MSIS are addressed.

*To communicate a deadline and timeline to States and stakeholders, CMS could issue a State Medicaid Director letter or other policy guidance. This letter or guidance could document what the deadline is for State implementation and what is required of States as they implement T-MSIS, as well as communicate to stakeholders when T-MSIS will be complete and usable for national Medicaid activities, including program integrity.*

**CMS Response**

We concur, and are working to issue a State Medicaid Director Letter. CMS believes that this letter will re-enforce the importance of meeting the T-MSIS compliance date.

*To be more transparent about the status of T-MSIS implementation, CMS could provide periodic updates to stakeholders. This could be accomplished in numerous ways, such as a regularly updated Web site or regular status updates sent to stakeholders. Updates should include a status of each State's T-MSIS implementation.*

**CMS Response**

We concur. See first response. In addition, as states implement T-MSIS, CMS expects to provide operational status reports to the stakeholder community that address the accuracy, timeliness, and completeness for more informed analysis by users on data received. By design, we intend to store operational metadata that will be relevant to the complete picture of a state's reported data, i.e., reportable elements at the state, current errors with records submitted, evaluation of completeness of data such as encounter reporting, etc.

**OIG Recommendation 2**

The OIG recommends that CMS Should Ensure That States Submit Required T-MSIS Data.

*CMS should clearly state that T-MSIS is required. If States fail to begin submitting T-MSIS data by the implementation deadline, CMS should use its enforcement mechanisms to compel States to begin submitting required T-MSIS data. CMS has two statutory enforcement mechanisms (i.e., withhold matching payments for data systems or withhold matching payments for medical assistance for managed care enrollees) that could be used if States do not begin submitting T-MSIS data by the deadline.*

**CMS Response**

We concur. CMS believes that utilizing enforcement mechanisms including the examples above are effective ways to ensure timely, robust Medicaid and CHIP operational data be submitted by its state partners. However, we do want to stress that other collaborative mechanisms are also effective and already included in T-MSIS efforts. Examples include:

- Partnering with states to support T-MSIS project initiatives through assignment of dedicated CMS technical assistance resources who are actively engaged with the assigned state and pro-actively monitor state progress
- Creation of a State T-MSIS Consulting Workgroup consisting of a subset of states to inform guidance, process improvement, inform project decisions, and resolve key project issues
- Transparency of status and issues via reports published
- (Future consideration) – participation in data quality improvement teams - strengthening analytics for informed decisions and oversight

*CMS may also want to seek legislative authority to employ alternative tools to compel State participation, such as interim sanctions for States that do not implement T-MSIS by the deadline. Alternatively, CMS could seek legislative authority to encourage State participation through an incentive program. This recommendation builds on a past OIG recommendation that CMS enforce the Federal requirements that States submit managed care encounter data. CMS responded that it intended to review statutory and regulatory authorities to determine areas in which it could strengthen the reporting of managed care encounter data.*

**CMS Response**

We concur. Section 1903(r) of the Social Security Act requires that all states with Medicaid programs have approved mechanized claims processing and information retrieval systems that are compatible with claims processing and information retrieval systems used in the administration of title XVIII of the Act. Section 4753 of the Balanced Budget Act of 1997 (Public Law 105-33) specifically states that compatibility requirements will include: 1) a uniform identification coding system for providers, other payees, and beneficiaries under titles

XVIII and XIX; 2) provisions for liaison between states and carriers and intermediaries with agreements under title XVIII to facilitate timely exchange of appropriate data; and 3) provisions for exchange of data between the states and the Secretary with respect to persons sanctioned under titles XVIII or XIX. Also, section 4753 of the Balanced Budget Act of 1997 requires that, effective for claims filed on or after January 1, 1999, the Medicaid Statistical Information System (MSIS) will provide electronic transmission of claims data in the format specified by the Secretary and consistent with the MSIS including detailed individual enrollee encounter data and other information that the Secretary may find necessary. The claims data format for MSIS electronic transmission is specified in the State Medicaid Manual, Part 2, §2700 as may be updated by the Secretary from time to time.

The CMS will shortly require the states to begin monthly submission of data using the T-MSIS format. Data submissions will be expected to meet quality validation routines for acceptance within 30 days of the reporting month. MSIS formats will no longer be accepted as part of this transition.

Should any state fail to maintain and produce all federally required program management data and information, including the required T-MSIS, eligibility, provider, and managed care encounter data, in accordance with requirements in the State Medicaid Manual Part 11 and approved Advanced Planning Documents, Federal Financial Participation may be suspended or disallowed as provided for in federal regulations at 42 CFR 433 Subpart C, and 45 CFR Part 95.

The CMS will also explore the inclusion of the legislative authority provided in Provision 6504 of the Patient Protection and Affordable Care Act in its guidance to states regarding T-MSIS conformity.

### **OIG Recommendation 3**

The OIG recommends that CMS Should Ensure That T-MSIS Data Are Complete, Accurate, and Timely Upon T-MSIS Implementation.

*CMS should ensure that the submitted T-MSIS data are complete, accurate, and timely. The lack of complete, accurate, and timely MSIS data prevented it from being used effectively to protect the integrity of Medicaid. CMS should work to ensure that these problems are not repeated in T-MSIS.*

*CMS could establish standards for the completeness, accuracy, and timeliness of T-MSIS data that States should meet once they have implemented T-MSIS. These standards should establish specific expectations for the completeness, accuracy, and timeliness of the data. Establishing specific standards would allow CMS and other oversight bodies to hold States accountable for the quality and timeliness of their T-MSIS data.*

**CMS Response**

We concur. CMS is actively working to create a robust set of business rules to govern the submission of Medicaid and CHIP operational data in the T-MSIS format. CMS acknowledged quality issues with MSIS data submission when it began exploring the T-MSIS solution. CMS recognizes that the program issues apparent in MSIS cannot be repeated in its successor.

With T-MSIS, CMS will move away from the “error threshold” approach to input file acceptance and will instead implement robust, record-level, field-by-field editing of the input data. An edit failure will trigger a record rejection (not file rejection), and the record will be returned to the state – along with an explanation for the rejection – for investigation, correction and resubmission. CMS will monitor the timeliness and completeness of the states’ error correction efforts and work with the states (using enforcement mechanisms if necessary) to improve these efforts.

In addition to enhanced front-end editing, CMS is planning to implement a continuous quality improvement process whereby we will compare data interrelationships, state-to-state comparisons of significant metrics, state-to-self trending, etc. in order to identify outlier data and potential anomalies. These findings will then be shared with the states, who will be asked to explain unexpected variances and correct/resubmit data if necessary. CMS also plans to catalog these findings and explanations, and make them readily available to authorized data users so that they can evaluate the impact of the anomalies on their specific data analyses. Metadata about the processing of states data will be available to the end user to assist in drawing accurate conclusions to analyses performed.

A critical component of the T-MSIS data quality initiative is the source-to-target mapping exercise that each state (with CMS) is performing as an early step in the T-MSIS implementation project. Based on the results of this analysis, a control file will be built for each state and utilized upon receipt at the federal platform via system edits to verify that each state is reporting all mutually agreed upon elements. The output from this exercise will be to understand and document where the T-MSIS data originates, what transformations are performed along the way, and problems states foresee in compiling accurate, complete, and timely T-MSIS data. As part of this exercise, states will be expected to provide an outline of action steps and a timeline for completion for those data elements that the state cannot report initially and need to perform systems changes in order to produce.

Our desire would be to share status dashboards for transparency purposes that bring data quality to the forefront.

*To enforce these standards, CMS could use existing accountability tools. Or CMS could seek legislative action for new tools that would compel States to submit data that are complete, accurate, and timely.*

**CMS Response**

We concur. Ideally, CMS would like to exercise collaborative mechanisms to promote state accountability for data submission compliance. In addition to responses above, the ability for states to have accessibility to national level data could re-enforce and promote state's desire to provide strong data for their respective analytic needs to drive program decisions through data. However, CMS will explore options to dis-incentivize incomplete data submission should that be a required tactic.

*CMS could work with States to ensure the submission of complete, accurate, and timely data. For example, to improve the completeness of T-MSIS data, CMS could work with States to identify ways that States could collect information that they currently do not collect that is needed to meet T-MSIS data requirements. To improve the accuracy of T-MSIS data, CMS could create standard derivation methods for States to use to ensure uniformly derived data elements.*

**CMS Response**

We concur. Technical assistance contracts supporting improvements in managed care data collection and T-MSIS implementation have already been exercised. In addition, support has been supplemented by dedicated CMS liaisons to states and CMS assistance mechanisms including:

- State collaboration support site
- T-MSIS implementation toolkit
- Project documentation including data and processing requirements, data submission operational readiness criteria, etc.

As stated above, CMS will leverage the source to target mapping documents for state requirements of data to be reported in T-MSIS submissions. For data that is unavailable, states will be expected to provide an outline of the action steps and a timeline for when this data will be available for submission. CMS intends to monitor states action plans to ensure states are progressing to improved data reporting over time where data is not available on initial implementation. CMS intends to share reports to the stakeholder community on state progress towards robust reporting.

As part of the quality improvement program, CMS will consider evaluation of standard deviation methods for states to use to ensure uniformly derived data elements. Future releases of T-MSIS may also include implementation of data standards to improve data collection methods and reduce risks in quality from derived data.

*OIG has previously made a recommendation to CMS to improve the quality of nationally available Medicaid data so that better data are available for program integrity efforts. Specifically, OIG recommended that CMS improve the quality of data that program integrity contractors can access for conducting data analysis. CMS responded that it intended to develop improved data systems for Medicaid program integrity and that T-MSIS was the chosen system.*

**CMS Response**

We concur. CMS is working towards a single enterprise data analytic platform for Medicaid and CHIP (MACBIS), where T-MSIS is a subset of the solution strategy that will ultimately service the end user community with tools, data labs, data integration across programs, and analytic programs. We are also working closely with CMS' Center for Program Integrity through our stakeholder councils to ensure that our efforts service early needs of this organization.

The CMS appreciates the effort that went into this draft report and looks forward to working with OIG on this and other issues.

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## ACKNOWLEDGMENTS

This report was prepared under the direction of Ann Maxwell, Regional Inspector General for Evaluation and Inspections in the Chicago regional office, and Thomas Komaniecki, Deputy Regional Inspector General.

Nicole Hrycyk served as the team leader for this study, and Carolyn Pichert served as the lead analyst. Other Office of Evaluation and Inspections staff from the Chicago regional office who conducted the study include Emily Rowe and Cassie Yarbrough. Central office staff who provided support include Kevin Farber and Kevin Manley.

# Office of Inspector General

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