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SUBJECT: Memorandum Report: "MSIS Data Usefulness for Detecting Fraud, Waste, and Abuse," OEI-04-07-00240

This report provides information about the Medicaid Statistical Information System (MSIS) data from fiscal years (FY) 2004 to 2006. Specifically, it provides information on: (1) the length of time that the States and the Centers for Medicare & Medicaid Services (CMS) took to submit and release the MSIS data; (2) CMS disclosure and documentation of the accuracy of MSIS data; and (3) the extent to which the MSIS captured information for detecting fraud, waste, and abuse.

We found that, on average, FYs 2004–2006 MSIS data took an average of over 1½ years after the initial State data submission before CMS released them to the public. This timeframe included an average of 6 months that States took to submit the MSIS files in a CMS-acceptable format and averages of 4 and 9 months for CMS to validate and release the files to the public, respectively. In addition, CMS did not fully disclose or document information about the accuracy of the MSIS data. Finally, as of June 2009, the MSIS had not captured many data elements that can assist in fraud, waste, and abuse detection.[1]

Timely, accurate, and comprehensive MSIS data can be used to meet the Health Care Fraud Prevention and Enforcement Action Team (HEAT) objectives.[2] In May 2009, HHS and the Department of Justice established HEAT as an interagency effort to combat health care fraud.[3]

[1] The Office of Inspector General (OIG) conference call with CMS, June 2009.

[2] Department of Health and Human Services (HHS). "Breaking News: Medicare Fraud Strike Force Operations Lead to Charges Against 32 Doctors and Health Care Executives for More Than $16 Million in Alleged False Billing in Houston." Available online at http://www.hhs.gov/stopmedicarefraud/. Accessed on June 19, 2009.

[3] HHS. "Attorney General Holder and HHS Secretary Sebelius Announce New Interagency Health Care Fraud Prevention and Enforcement Action Team." Available online at http://www.hhs.gov/news/press/2009pres/05/20090520a.html. Accessed on June 19, 2009.

HEAT includes a focus on expanding data usage to more effectively identify and prevent Medicaid fraud.

BACKGROUND

In 1965, Title XIX of the Social Security Act established Medicaid to provide certain basic services to categorically and medically needy populations.[4] Medicaid programs are jointly funded by Federal and State governments but solely administered by States pursuant to Federal statutes, regulations, and policies. CMS oversees State Medicaid programs and ensures that State-submitted expenditures for Federal reimbursement are appropriate. In FY 2006, Medicaid covered over 57 million beneficiaries at a cost of over $308 billion.[5] [6] The Federal share of this cost was approximately $174 billion.[7]

Medicaid Statistical Information System

CMS maintains the MSIS database, the only nationwide Medicaid eligibility and claims information source. In FY 1984, MSIS was approved as a voluntary State reporting option of beneficiary-level Medicaid fee-for-service claims data in an electronic format.[8] This option permitted States to forego data submission via a paper (i.e., hardcopy) format. The Balanced Budget Act of 1997 mandated MSIS-program participation from the 50 States and the District of Columbia (hereinafter referred to as States) for Medicaid claims filed on or after January 1, 1999.[9] To improve the timeliness of the MSIS files' release, CMS encourages States to submit their files electronically.[10] As of July 2009, 34 States were sending their MSIS files electronically.[11]

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[4] 42 U.S.C. §§ 1396-1396v, Social Security Act, §§ 1901-1936.

[5] "MSIS State Summary Data Mart," 2006 Unique Eligibilities Count. Available online at http://msis.cms.hhs.gov/. Accessed on December 1, 2008.

[6] CMS, Office of the Actuary, National Health Statistics Group, Health Expenditure Data, Table 11: Expenditures for Health Services and Supplies Under Public Programs, by Type of Expenditure and Program: Calendar Year 2006. Available online at http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf. Accessed on December 1, 2008.

[7] Ibid.

[8] The MSIS reporting option was part of the annual State submission of the Statistical Report on Medical Care: Eligibles, Recipients, Payments and Services (HCFA-2082), started in FY 1972. As of FY 1997, the MSIS data can be provided in one of two ways: (1) the annual submission of the hardcopy 1984 version, or (2) quarterly fixed electronic format of Medicaid eligibility and claims. States that successfully comply with all MSIS requirements and submit data for a full fiscal year can receive a waiver from submitting the hardcopy HCFA-2082. CMS technical comments on OIG's draft memorandum report, August 2009.

[9] 42 U.S.C. § 1396b(r). In addition to requiring fee-for-service data, the Balanced Budget Act of 1997 mandated the electronic transmission of individual enrollee encounter data. Encounter data provide details about services provided to Medicaid beneficiaries enrolled in managed care.

[10] States are encouraged to submit their files via Electronic File Transmission (EFT) instead of cartridges or tape. This results in faster transmission and retransmission of the MSIS data. The EFT is identified in the MSIS Tape Specification and Data Dictionary, Release 3. Available online at http://www.cms.hhs.gov/MSIS. Accessed on August 11, 2009.

[11] CMS technical comments on OIG's draft memorandum report, August 2009.

The MSIS system of records notice indicates that CMS collects MSIS data from States "to establish an accurate, current, and comprehensive database containing standardized enrollment, eligibility, and paid claims of Medicaid beneficiaries to be used for the administration of Medicaid at the Federal level."[12] The system of records also notes that CMS collects MSIS data to "produce statistical reports, support Medicaid-related research, and assist in the detection of fraud and abuse in the Medicare and Medicaid programs."[13] According to CMS, the MSIS is also used for health care research and evaluation activities, program utilization and expenditure forecasts, policy alternatives analysis, congressional inquiry responses, and other health-related database matches.[14]

The MSIS timeliness, reliability, and comprehensiveness are further important because the data is also used as an information source for other CMS databases, such as the MSIS State Summary Data Mart, the MSIS Drug Utilization Data Mart, the Medicaid Analytical Extract, the Enterprise Cross-Reference Database, and the Medicaid Integrity Group (MIG) Data Engine. See Appendix A for descriptions of these databases

CMS Efforts To Use MSIS Data for Detecting Medicaid Fraud, Waste, and Abuse

The Deficit Reduction Act of 2005 (DRA) included several provisions to reduce Medicaid fraud, waste, and abuse. For example, it created a new Medicaid Integrity Program and appropriated $100 million over 2 years for CMS to implement the program. The DRA appropriated an annual budget of $75 million for the program's continued operations postimplementation.[15]

To oversee the Medicaid Integrity Program planning and implementation, CMS created the Medicaid Integrity Program Advisory Committee.[16] The committee identified Medicaid data collection, including MSIS data, as key to the Medicaid Integrity Program's success.[17]

The Medicaid Integrity Group. In 2006, CMS established MIG, as part of the Center for Medicaid and State Operations (CMSO), to implement DRA's Medicaid Integrity Program and

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[12] 71 Fed. Reg. 65527 (Nov. 8, 2006). The Privacy Act of 1974 (Privacy Act); (5 U.S.C. § 552a) required agencies to publish in the Federal Register a notice of the existence and character of a "system of records," such as MSIS. The Privacy Act defines a "system of records" as "a group of any records under the control of any agency from which information is retrieved by the name of the individual or by some identifying number, symbol, or other identifying particular assigned to the individual."

[13] System of Records No. 09-70-0541. 71 Fed. Reg. 65527 (Nov. 8, 2006). This system of records states that MSIS will also be used to combat "waste." Available online at http://www.cms.hhs.gov/PrivacyActSystemofRecords/downloads/0541.pdf. Accessed on December 1, 2008.

[14] CMS, MSIS Overview. Available online at http://www.cms.hhs.gov/MSIS/. Accessed on December 1, 2008.

[15] DRA, section 6034(a) (codified at 42 U.S.C. § 1396u-6).

[16] The Medicaid Integrity Program Advisory Committee is made up of State Medicaid Directors; State Program Integrity Directors; Medicaid Fraud Control Unit Directors representing 16 States; as well as representatives of the Federal Bureau of Investigation, HHS OIG, and CMS regional offices. Source: CMS, Comprehensive Medicaid Integrity Plan, June 2008. Available online at http://www.cms.hhs.gov/DeficitReductionAct/Downloads/FY08CMIP.pdf. Accessed on December 1, 2008.

[17] CMS, Comprehensive Medicaid Integrity Plan (CMIP), August 2007. Available online at http://www.cms.hhs.gov/DeficitReductionAct/Downloads/CMIP2007.pdf. Accessed on December 1, 2008.

carry out CMS's national strategy to combat Medicaid fraud, waste, and abuse.[18] CMSO and its contractors seek to identify improper payments and coordinate integrity efforts with various State and local entities.[19]

In 2007, MIG began soliciting input from other CMS components, Department of Justice, and OIG officials involved in Medicaid fraud detection to identify useful data elements for Medicaid fraud, waste, and abuse detection (hereinafter referred to as MIG-identified data elements) and identified 182 such data elements. Not all of these data elements are currently captured in the MSIS database.

Additionally, a Medicaid Data Integration Workgroup has also been established. This workgroup consists of consultants from a number of entities including: CMSO, the CMS Office of Financial Management, the CMS Office of Information Services (OIS), OIG, and several States. To address multiple business functions across CMS, the workgroup recently recommended adding approximately 96 more variables to the 182 MIG-identified data elements (bringing the total to 278).

In 2008, CMS established a new system of records titled, "Medicaid Integrity Program System."[20] The primary purpose of this system is to "establish an accurate, current, and comprehensive database containing standardized enrollment, eligibility, and paid claims of Medicaid beneficiaries to assist in the detection of fraud, waste, and abuse."[21] This system, commonly referred to as the MIG Data Engine, became operational in November 2008 and is using MSIS data to support MIG's activities.[22] According to CMS officials, this system has resulted in the identification, or probable identification, of substantial overpayments.[23]

MSIS File Submission and Data Validation Processes

CMS requires States to submit one Medicaid-eligibility and four claims data files to CMS quarterly.[24] [25] CMS then tests the files to ensure that the data pass quality review. The MSIS files that pass quality review are posted to the production database on CMS's mainframe computer and are considered validated MSIS data.

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[18] CMS, CMIP, July 2006. Available online at http://www.cms.hhs.gov/DeficitReductionAct/Downloads/CMIP Initial July 2006.pdf. Accessed on December 1, 2008.

[19] Ibid.

[20] System of Records No. 09-70-0599. 73 Fed. Reg. 11638 (Mar. 4, 2008). CMS's Medicaid Integrity Program established the new system of records.

[21] Ibid.

[22] CMS technical comments on OIG's draft memorandum report, August 2009.

[23] Ibid.

[24] "The State Participation Procedures Manual." Available online at http://www.cms.hhs.gov/MSIS. Accessed on December 1, 2008.

[25] The four types of MSIS claims files are inpatient services, long term care, prescription drug, and "other" claims.

The MSIS files that do not pass quality review are returned to States for correction and resubmission. CMS does not limit the number of times States may resubmit corrected MSIS data or specify the amount of time States have to make corrections and resubmit the revised data. After all five files successfully pass quality reviews, CMS releases the data to most public users.[26] The processes of MSIS file submission and data validation occur in three phases: initial submission, quality review, and final release.

Initial submission. The initial submission phase starts at the end of each quarter and ends when CMS receives and successfully copies a properly formatted MSIS file to its mainframe computer for quality review.

File submission schedules and formatting requirements are defined in the MSIS Tape Specification and Data Dictionary (MSIS Data Dictionary).[27] States must submit their four Medicaid claims files to CMS within 45 days after the end of each quarter.[28] However, CMS allows States to submit their Medicaid eligibility file up to 3½ months after the end of each quarter.[29] If the files are formatted improperly, CMS rejects the submission. States must then resubmit properly formatted files before the next phase may begin.

Quality review. The quality review phase starts when CMS copies a properly formatted State file to its mainframe computer. This phase ends when the file passes data validation edits and distributional checks defined in the MSIS Data Dictionary maintained on CMS's public Web site.

Data validation edits occur when the MSIS Data Validation computer program compares the Medicaid data within each file to formatting rules and permitted error rates (i.e., error tolerances) established in the MSIS Data Dictionary.[30] If a file's errors exceed the established error tolerances, CMS rejects the file and returns it to the State for correction and resubmission.

CMS's MSIS Data Validation program produces error reports that show the number and types of errors identified. CMS shares the error reports with States to facilitate underlying data-problem identification and correction.

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[26] According to CMS officials, MIG receives and uses MSIS data prior to the quality review. CMS technical comments on OIG's draft memorandum report, August 2009.

[27] CMS. The MSIS Tape Specification and Data Dictionary, Release 2, version 5. Available online at http://www.cms.hhs.gov/MSIS. Accessed on February 6, 2009.

[28] The "State Participation Procedures Manual." Available online at http://www.cms.hhs.gov/MSIS. Accessed on December 1, 2008.

[29] Ibid.

[30] The MSIS Data Validation program is a system of mainframe computer applications that copy, edit, and track files throughout the MSIS file submission and data validation process. These applications include the initial submission formatting checks, quality review data validation edits, as well as the final release data-posting routines. The MSIS Data Validation program does not control or track distributional checks performed by CMS's data quality contractor, Mathematica Policy Research, Inc. (Mathematica).

Default error tolerances are defined in the MSIS Data Dictionary. However, not all State MSIS files are subject to the default error tolerances. CMS periodically adjusts individual State error tolerances to allow particular files or sets of files to pass data validation tests. For example, CMS may adjust MSIS error tolerances when a State's data systems are unable to accommodate MSIS file formats or when unique State coding issues trigger false errors.

When the data files pass data validation edits, CMS forwards the data to its data quality contractor, Mathematica, to conduct distributional checks.[31] These checks reveal data irregularities by comparing mathematical averages, ranges, frequency distributions, and payment totals to expected outcomes. For example, Mathematica's distributional checks may analyze MSIS claims files to calculate a State's average Medicaid payment for a specific item or service and compare it to the average payment from a previous quarter to identify significant or unexpected changes. Mathematica also compares the MSIS data to other CMS sources such as State waiver programs.[32]

CMS allows Mathematica to work directly with States to research and correct data irregularities (i.e., anomalies). For example, Mathematica found that a State submitted an MSIS eligibility file with all records marked as "dual-eligible" (i.e., Medicaid beneficiaries who are also eligible for Medicare benefits). Mathematica worked with the State and determined that this was a programming error that required State correction and file resubmission.

Anomalies that are not caused by errors in the underlying data are documented and disclosed to MSIS data users in the MSIS "State Anomalies/Issues Report" maintained on CMS's public Web site.[33] For example, Mathematica identified a dramatic increase in the total number of Medicaid-eligible beneficiaries reported in a State's quarterly eligibility file. However, changes in the State's eligibility rules justified the increase, which was then documented in the MSIS "State Anomalies/Issues Report."

Final release. The final release phase starts when Mathematica notifies CMS that a file has passed quality review and ends when CMS posts the validated MSIS data in the file to a production database on its mainframe computer. In general, most public MSIS data users do not have access to MSIS data until CMS posts the validated data to its production database.[34]

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[31] CMS. Active Projects Report 2008 Edition, Project Number 500-00-0047/04, MSIS Expansion and Data Quality Support. Available online at http://www.cms.hhs.gov/ActiveProjectReports/05_APR_2008_Edition.asp. Accessed on December 1, 2008.

[32] CMS technical comments on OIG's draft memorandum report, August 2009.

[33] CMS. MSIS "State Anomalies/Issues Report." Available online at http://www.cms.hhs.gov/MedicaidDataSourcesGenInfo/Downloads/anomalies.pdf. Accessed on December 1, 2008.

[34] According to CMS officials, MIG uses these files for preliminary analysis before they are validated. Some internal users, e.g., OIG, have direct mainframe access to validated MSIS files. Some external users, e.g., the Congressional Budget Office, have established data use agreements with CMS in which they receive predefined extracts of validated MSIS files.

CMS officials stated that most MSIS data users require complete sets (i.e., one Medicaid eligible file and four Medicaid claims files) of quarterly MSIS data for analysis. Therefore, CMS does not typically post MSIS files to its production database until all five files have cleared quality review.

Related Work

In May 2009, OIG released a report that assessed the extent to which CMS accepts MSIS submissions without encounter data.[35] Encounter data are the primary record of Medicaid services provided to beneficiaries enrolled in capitated Medicaid managed care. In a February 2002 report, the Government Accountability Office (GAO) recommended that CMS analyze MSIS data to detect potentially improper Medicaid payments.[36] GAO's June 2006 follow-up report reiterated this recommendation because it found that CMS had not included MSIS data in its Medicaid oversight activities.[37]

METHODOLOGY

Scope

To assess the usefulness of MSIS data for detecting fraud, waste, and abuse, we determined:

- the average length of time MSIS FYs 2004–2006 files were in each phase of file submission and data validation processes, as of June 2007, before release to the public;
- the extent to which CMS disclosed and documented information about the accuracy of MSIS data as of June 2007;[38] and
- the extent to which, as of September 2008, MSIS contained data elements useful for fraud, waste, and abuse detection.

Data Sources

We reviewed the following documents to understand the MSIS program's Federal and State requirements:

- DRA
- "State Participation Procedures Manual"
- MSIS Data Dictionary
- MSIS "Data Anomalies/Issues Report"

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[35] "Medicaid Managed Care Encounter Data: Collection and Use," OEI-07-06-00540.

[36] "Medicaid Financial Management: Better Oversight of State Claims for Federal Reimbursement Needed," GAO-02-300, February 2002. Available online at http://www.gao.gov/new.items/d02300.pdf. Accessed on December 1, 2008.

[37] "Medicaid Financial Management: Steps Taken to Improve Federal Oversight But Other Actions Needed to Sustain Efforts," GAO-06-705, June 2006. Available online at http://www.gao.gov/new.items/d06705.pdf. Accessed on December 1, 2008.

[38] CMS extracted processing data from the MSIS Data Validation program for our review in June 2007.

We used data from the following sources to assess MSIS data usefulness for fraud, waste, and abuse detection:

- CMS's MSIS Data Validation program;
- Mathematica's MSIS Data Quality Review Status Reporting Database; and
- MIG's compilation of data elements that can assist in Medicaid fraud, waste, and abuse detection.

Data Collection and Analysis
We interviewed officials from CMSO, OIS, and Mathematica to gather information about the MSIS file submission and data validation processes. We also interviewed MIG officials to gather information about the extent to which they compiled data elements that can be useful for Medicaid fraud, waste, and abuse detection.

Determining MSIS file processing times. To determine the number of days during which MSIS files spent in each phase of the file submission and data validation processes (initial submission, quality review, and final release), we analyzed the processing dates of 3,060 State FYs 2004–2006 quarterly MSIS files as of June 2007.[39] As of that date, CMS had validated and released 54 percent (1,655 of 3,060) of the files. We obtained processing dates from CMS's MSIS Data Validation program and Mathematica's Data Quality Review Status Reporting Database.

- For the initial submission phase, we counted the number of days from the end of the quarter to the first time CMS successfully copied a State's MSIS file submission to its mainframe computer.

- For the quality review phase, we counted the number of days from the end of the initial submission phase to the date when Mathematica reported that the MSIS data completed distributional checks.

- For the final release phase, we counted the number of days from the end of the quality review phase to the date when CMS posted validated MSIS data to the production database on its mainframe computer.

For the 1,655 MSIS files that completed all phases of the MSIS file submission and data validation processes as of June 2007, we calculated, by file type, the average, median, minimum, and maximum days during which they were in each phase.

[39] Each quarter, CMS requires States to submit one eligibility file and four claims files of MSIS data. For FYs 2004–2006, CMS required the 51 States to submit a total of 3,060 quarterly MSIS files (3 years x 51 States x 4 quarters x 5 files = 3,060 required MSIS files).

We also counted, by file type, the number of initial submission files that States did not submit by the established due dates and 6 months (180 days) after CMS's due dates. We then counted, by file type, the number of States that submitted at least one file after CMS's due dates and 6 months after CMS's due dates.

For claims files, we calculated CMS's due date as 45 days from the end of the quarter and the 6-month-late date as 225 (45 + 180) days from the end of the quarter. For eligibility files, we based our analysis on the more conservative delayed MSIS eligibility file submission requirement (up to 105 days).[40] We calculated CMS's eligibility file due dates as 105 days from the end of the quarter and the 6-month-late mark as 285 (105 + 180) days from the end of the quarter.

We also determined the number of State file submissions, including the initial submission, required for MSIS data to clear the data validation process quality review phase. We counted the number of times that States resubmitted MSIS files before Mathematica reported to CMS that the data completed distributional checks and then added one for the initial submission. For example, MSIS files that completed the quality review phase without correction required one State file submission (zero resubmission plus one initial file submission).

Assessing CMS's disclosure and documentation of MSIS data accuracy. To assess the extent to which CMS disclosed and documented the accuracy of MSIS error tolerance adjustments, we determined the number of CMS data validation adjustments that increased error tolerances above default levels documented in the MSIS Data Dictionary. To do so, we reviewed 9,639 error tolerance adjustment records that CMS programmers extracted from the MSIS Data Validation program as of June 2007. We first eliminated 7,197 adjustments (75 percent) that had no effect on the MSIS Data Validation program's error tolerance levels (inactive adjustments).[41] The remaining 2,442 adjustments (25 percent) increased error tolerances to levels above or equal to those programmed into MSIS Data Validation software (active adjustments). Of the 2,442 active adjustments, we reviewed 1,528 adjustments (63 percent) that increased the error tolerance levels above defaults documented in the MSIS Data Dictionary. We did not review 914 active adjustments that set the error tolerances at levels equal to the defaults documented in the MSIS Data Dictionary. See Appendix B for a breakdown of inactive and active error tolerance adjustments as of June 22, 2007.

To assess the extent of the 1,528 error tolerance adjustments that we reviewed, we determined the earliest and latest adjustment dates, counted the number of adjustments, and calculated the percentage of total adjustments per year. We also counted the number of States and MSIS data

[40] According to the "MSIS State Participation Procedures Manual," States may submit MSIS quarterly eligibility files on a regular or delayed submission schedule 45 days or 3½ months from the end of the quarter, respectively. For our review, we define 3½ months as 105 days. Available online at http://www.cms.hhs.gov/MSIS/. Accessed on August 7, 2009.

[41] These inactive adjustments included adjustments to MSIS files of U.S. territories, data elements not subjected to data validation tests, unused MSIS data elements, and invalid MSIS file type/data element combinations.

elements affected by the 1,528 active error tolerance adjustments. Finally, we counted the number of States and MSIS data elements for which CMS increased the data validation error tolerance levels to 100 percent. Error tolerance levels set to 100 percent allow an unknown number of errors to be present in the data when it passes quality review.

To assess controls over error tolerance adjustments, we asked CMS for justification and approval documentation related to the 1,528 error tolerance adjustments reviewed. To determine whether MSIS data users had access to information about error tolerance adjustments, we searched the MSIS Data Dictionary and the MSIS "State Anomalies/Issues Report" for references of these 1,528 error tolerance adjustments.

Assessing data elements contained in MSIS. To determine the extent to which MSIS data contained information that can assist in Medicaid fraud, waste, and abuse detection, we compared existing MSIS data elements, as of September 2008, to those that MIG identified as assisting in fraud, waste, and abuse detection.

First, we consolidated similar data elements from the 182 individual data elements that MIG identified into 100 data elements.[42] Second, we sorted the 100 consolidated data elements into four categories: (1) Service Provider Identifiers; (2) Procedure, Product, and Service Descriptions; (3) Billing Information; and (4) Beneficiary and Eligibility Information. Third, we consolidated similar data elements from MSIS's 255 individual data elements into 85 data elements.[43] [44] Finally, to identify equivalent data elements, we compared the 100 consolidated data elements that MIG identified, to the 85 consolidated MSIS data elements.[45] MIG officials reviewed and concurred with our data consolidation and comparison approaches. See Appendix C for comparisons of data elements consolidated from their listing and the MSIS Data Dictionary.

Limitations

We did not verify the accuracy of the MSIS data files or evaluate controls over Mathematica's distributional checks.

We did not review the accuracy of existing differences in the actual and reported MSIS file error tolerances because CMS periodically adjusts individual State error tolerances to allow particular files or sets of files to pass data validation tests. For example, CMS may adjust MSIS error

[42] For example, MIG collects the "amount billed—per item" and "total billed or charged amount—total claim" for both institutional and medical Medicaid claims. We consolidated these four data elements into a single "amount billed" data element.

[43] For example, each of the four MSIS claim files (i.e., inpatient, long term care, prescription drug, and "other") include an "amount charged" data element. We consolidated these four data elements into a single "amount charged" data element.

[44] For this analysis we used the MSIS File Specification and Data Dictionary, Release 3 effective February 15, 2009, because it provided the most current listing of MSIS data elements.

[45] For example, we considered the "amount billed" MIG data element to be equivalent to the "amount charged" MSIS data element.

tolerances when a State's data systems are unable to accommodate MSIS file formats or when unique State coding issues trigger false errors. We report only on the extent to which CMS was able to provide documentation to support the rationale for making changes to the error tolerances.

We based our analysis on the extent to which, as of September 2008, MSIS captured data elements that MIG identified as those that can assist in Medicaid fraud, waste, and abuse detection. Although not comprehensive or specifically required by statute, MIG, other CMS components, Department of Justice, and OIG identified these data elements as useful to detect fraud, waste, and abuse.

Standards

We conducted this study in accordance with the "Quality Standards for Inspections" approved by the Council of the Inspectors General on Integrity and Efficiency.

RESULTS

MSIS Data From FYs 2004–2006 Took an Average of 1½ Years After the Initial State Data Submission Before CMS Released Them to the Public

As of June 22, 2007, 54 percent (1,655 of 3,060) of the FYs 2004–2006 MSIS files that we reviewed had completed all phases of CMS's file submission and data validation processes. These files took on average over 1½ years (595 days) to complete all phases of the processes and before their release to the public. On average, States took over 6 months (187 days) to submit files in a CMS-acceptable format. Once States submitted files in acceptable formats, CMS took over 4 months (127 days) to validate and an additional 9 months (281 days) to release the files to the public.[46]

The remaining 46 percent (1,405 of 3,060) of MSIS files that had not completed file submission and data validation at the time of our review were in various phases of the processes. States had not submitted 10 percent of these MSIS files. See Appendix D for the file submission and data validation status of all 3,060 MSIS files that we reviewed by year.

Table 1 provides, by file type, the average number of days spent in each phase for the 1,655 MSIS files that completed the file submission and data validation processes. See Appendix E for the average, median, minimum, and maximum days during which MSIS files spent in each of these phases.

[46] According to CMS officials, MIG utilizes MSIS data that have not been validated to conduct preliminary fraud, waste, and abuse analysis. CMS technical comments on OIG's draft memorandum report, August 2009.

Table 1: Average Days That MSIS Files Spent in Each Phase of the MSIS File Submission and Data Validation Processes

MSIS File Type	Number of Files	Number of Days			
		Initial Submission	Quality Review	Final Release	Overall Processing
Eligibility	331	195	287	113	595
Claims	1,324	185	87	323	595
All Files	**1,655**	**187**	**127**	**281**	**595**

Averages equal the mean processing days of the 1,655 FYs 2004–2006 MSIS files reviewed.
Source: OIG analysis of the file submission and data validation status of FYs 2004–2006 MSIS files as of June 2007.

States submitted nearly two-thirds of the initial MSIS file submissions after the CMS due dates. Of the files that had completed initial file submission and data validation, States submitted 63 percent (1,041 of 1,655) after the CMS due dates. All but two States submitted at least one initial MSIS file submission after the due dates. Of those, 32 States submitted 31 percent (513 of 1,655) of the initial MSIS file submissions over 6 months after the due dates.

Table 2 provides the number of initial MSIS State file submissions reviewed that occurred after the due dates and the number of States submitting those files.

Table 2: Initial File Submissions That Occurred After the CMS Due Dates

MSIS File Type	Files Reviewed	Submissions Received After the CMS Due Dates			Submissions Received Over 6 Months After the CMS Due Dates *		
		Files	Percentage **	States	Files	Percentage **	States
Eligibility	331	192	58%	44	95	29%	27
Claims	1,324	849	64%	48	418	32%	31
All	**1,655**	**1,041**	**63%**	**49**	**513**	**31%**	**32**

* This group is a subset of all submissions received after the due dates.
** Percentages pertain to aggregate characteristics of MSIS file types and will not sum to 100 percent.
Source: OIG analysis of the file submission and data validation status of FYs 2004–2006 MSIS files as of June 2007.

MSIS files requiring State correction and resubmission took more than five times longer to clear quality review than those that did not require correction and resubmission. Twenty-six percent (431 of 1,655) of the State MSIS file submissions required correction and resubmission to clear CMS quality review. Each State had at least one file that required correction and resubmission.

When MSIS files did not require correction and resubmission, quality review took on average 2 months (63 days). When MSIS files required State correction and resubmission, the quality review took on average 10 months (310 days), more than five times longer.

A greater percentage of eligibility files than claims files required correction and resubmission to complete quality review. Over 50 percent (176 of 331) of eligibility files from 48 States required

correction and resubmission to complete quality review. In contrast, less than 20 percent of claims files (255 of 1,324) from 46 States required correction and resubmission to complete quality review.

CMS officials reported that midyear changes in State eligibility requirements often require States to correct and resubmit the MSIS eligibility files from previous quarters. As a result, MSIS eligibility files generally took longer to complete quality review than the claims files. On average, the 176 eligibility files requiring correction and resubmission took over a year (400 days) to complete quality review. The 255 claims files requiring correction and resubmission completed quality review, on average, in just over 8 months (247 days). In contrast, on average, eligibility files not requiring correction and resubmission completed quality review in just over 5 months (160 days), and claims files not requiring State correction and resubmission completed quality review in just over 1½ months (49 days).

Table 3 provides the number of days that the MSIS files we reviewed spent in quality review. This table compares files that required correction and resubmission to those that did not.

Table 3: Number of Days That State MSIS File Submissions Spent in Quality Review

MSIS File Type	Files Reviewed	State MSIS Files Requiring Correction and Resubmission				State MSIS Files Not Requiring Correction and Resubmission			
		Files	Percentage *	States	Average Days **	Files	Percentage *	States	Average Days **
Eligibility	331	176	53%	48	400	155	47%	38	160
Claims	1,324	255	19%	46	247	1,069	81%	49	49
All	**1,655**	**431**	**26%**	**51**	**310**	**1,224**	**74%**	**51**	**63**

* Percentages pertain to aggregate characteristics of MSIS file types and will not sum to 100 percent.

** Average days required to clear the quality review phase of the MSIS file submission and data validation process.

Source: OIG analysis of the file submission and data validation status of FYs 2004–2006 MSIS files as of June 2007.

CMS held validated claims files nearly three times longer than validated eligibility files, before releasing them to the public. Although MSIS claims files often completed quality review before eligibility files, CMS did not release the validated MSIS files until all five of the State's quarterly file submissions (four claims files and one eligibility file) completed quality review. CMS held validated MSIS files for over 9 months (281 days), on average, before releasing the data to the public. These delays occurred because CMS was waiting for the companion files to complete quality review before releasing all five related claims and eligibility files simultaneously to the public. The final release phase accounted for nearly half (47 percent) of the average time MSIS files spent in all phases of file submission and data validation

processes.[47] However, users do not always need access to all five validated MSIS files to identify potentially fraudulent trends.[48]

CMS held validated MSIS eligibility files for nearly 4 months (113 days) on average before releasing the data to the public while waiting for companion files to complete quality review. In contrast, CMS held validated MSIS claims files for nearly 11 months (323 days) on average, nearly three times longer, for the same reason.

CMS Did Not Fully Disclose or Document Information About the Accuracy of MSIS Data

CMS released MSIS data to the public without disclosing or documenting individual State adjustments to the error tolerances in either the MSIS Data Dictionary or MSIS "Data Anomalies/Issues Report." The MSIS Data Dictionary reflects only the established national error tolerance levels, and the "Data Anomalies/Issues Report" reflects only quality review results, not State-level error tolerance level changes from the National level.

As of June 2007, 63 percent (1,528 of 2,442) of CMS's active data validation error tolerance adjustments increased the error tolerances to values greater than published defaults. The 1,528 adjustments involved 75 percent (191 of 255) of all MSIS data elements and affected at least one MSIS file submission from each State. CMS periodically adjusts individual State error tolerances to allow particular files or sets of files to pass data validation tests (e.g., when State's data systems are unable to accommodate MSIS file formats, or unique State coding issues trigger false errors). However, it did not document and/or disclose information about the accuracy of adjusting these error tolerances to a value greater than published defaults.

CMS did not fully or accurately disclose error tolerance adjustments and resulting error rates to MSIS data users. Neither the MSIS Data Dictionary nor the MSIS "Data Anomalies/Issues Report" fully discloses changes made to individual State MSIS error tolerance levels. The MSIS Data Dictionary describes error tolerances as defaults and indicates that adjustments are "based on special State circumstances." However, CMS did not identify any of the State-specific error tolerance adjustments in the MSIS Data Dictionary.

The MSIS "Data Anomalies/Issues Report" referenced 4 of the 1,528 active error tolerance adjustments that increased the error tolerances to values greater than published defaults. However, one of the four references did not disclose the adjusted error tolerance level and two of the four references disclosed incorrect adjusted error tolerance levels. In addition, the MSIS "Data Anomalies/Issues Report" posted to CMS's Web site was over 3 years old at the time of

[47] The 281 days during which CMS held validated MSIS files is nearly half (47 percent) of the 595 days it took CMS on average to validate and release for public use the 1,655 FYs 2004–2006 MSIS files reviewed.

[48] Users can utilize the unique MSIS beneficiary identification numbers contained in the MSIS claims files to identify potentially fraudulent Medicaid billing patterns. If necessary, users can also utilize prior quarter's validated MSIS eligibility file for the preliminary identification of these beneficiaries.

our review.[49] Furthermore, CMS did not publicize error rates resulting from undisclosed error tolerance adjustments. For example, CMS did not post error reports to its public Web site.

CMS did not document the justification and approval of error tolerance adjustments. CMS could not provide documentation for the justification and approval of the 1,528 active error tolerance adjustments that increased the error tolerances to values greater than published defaults. Just over half of these error tolerance increases (765 of 1,528) had been in place for over 7 years. According to CMS officials, States are notified of error tolerance adjustments, but the justification and approval of individual adjustments are not logged or documented. See Appendix F for the number of undocumented error tolerance adjustments CMS made per year.

Twenty-nine percent of CMS's undocumented error tolerance adjustments increased MSIS data validation error tolerances to 100 percent. Twenty-nine percent (446 of 1,528) of CMS's undocumented error tolerance adjustments we reviewed increased the default error tolerance from 5 percent or less to 100 percent. These undocumented error tolerance adjustments allowed the affected State MSIS files to clear quality review with an unknown number of errors. The 446 adjustments occurred between April 1999 and May 2007, involved 72 MSIS data elements, and affected at least one MSIS file submission from all States.

For example, between August 1999 and December 2003, CMS made 17 adjustments affecting 13 States to increase the MSIS "Diagnosis-Code-Principal" data element error tolerance level from 5 percent to 100 percent.[50] See Appendix G for the date CMS adjusted the MSIS "Diagnosis-Code-Principal" data element error tolerance in each of the 13 States.

MSIS Did Not Capture Many of the Data Elements That Can Assist in Fraud, Waste, and Abuse Detection

There are no requirements for MSIS to contain specific data elements. However, MSIS does not currently capture a number of data elements that can assist in fraud, waste, and abuse detection. For example, MSIS does not include all data elements that MIG has identified as assisting in fraud, waste, and abuse detection.

MSIS did not capture almost half of the consolidated data elements we reviewed that MIG identified as useful for fraud, waste, and abuse detection. The consolidated MSIS data elements did not capture 46 percent (46 of 100) of the consolidated data elements reviewed that MIG identified as useful for fraud, waste, and abuse detection.[51] Data elements were missing in all four categories that we developed for our review:

[49] As of October 1, 2008, the MSIS "Data Anomalies/Issues Report" linked to CMS's MSIS Data public Web site was dated September 5, 2005. Available online at http://www.cms.hhs.gov/MedicaidDataSourcesGenInfo/02_MSISData.asp. Accessed on December 1, 2008.

[50] The MSIS Diagnosis-Code-Principal data element contains the code for the principal diagnosis on the claim. Principal diagnosis is the condition chiefly responsible for a patient's admission.

[51] We compared 85 MSIS data elements consolidated from the MSIS Data Dictionary to 100 data elements consolidated from MIG's list of 182 data elements. MIG identified these data elements in collaboration with other CMS components.

- Service Provider Identifiers
- Procedure, Product, and Service Descriptions
- Billing Information
- Beneficiary and Eligibility Information

See Appendix C for comparisons of the consolidated data elements MIG identified as assisting in fraud, waste, and abuse detection to the consolidated MSIS data elements in each of these four categories.

MSIS did not capture over half of the consolidated Medicaid Service Provider Identifier data elements reviewed. MSIS did not capture 55 percent (11 of 20) of the Medicaid Service Provider Identifier data elements we consolidated from the list of data elements that MIG identified as assisting in fraud, waste, and abuse detection. For example, MSIS did not capture the referring provider's identification number. The referring provider is the physician who ordered the medical procedure, product, or service. Without the referring provider identification number, fraud analysts cannot use MSIS data to assess whether a qualified physician submitted the order as required to receive certain medical benefits. In a 2002 report, OIG used referring provider identification numbers to estimate that Medicare paid $61 million for improperly documented services in 1999.[52]

MSIS did not capture almost half of the consolidated Medicaid Procedure, Product, and Service Description data elements reviewed. MSIS did not capture 48 percent (16 of 33) of the Medicaid Procedure, Product, and Service Description data elements we consolidated from the list of data elements that MIG identified as assisting in fraud, waste, and abuse detection. For example, MSIS did not capture data elements that specify the tooth number, quadrant, or surface subject for dental procedures. Without these details, fraud analysts would have difficulty using MSIS data to detect fraudulent Medicaid claims for duplicate or medically unnecessary dental procedures. Because MSIS did not include the necessary data elements, OIG obtained Medicaid data from individual States for its 2007 report that incorrect information about the tooth surface subject to dental procedures contributed to an estimated $12 million in improper Medicaid payments in 2003.[53]

MSIS did not capture over one-third of the consolidated Medicaid Billing Information data elements reviewed. MSIS did not capture 42 percent (15 of 36) of the Medicaid Billing Information data elements we consolidated from the list of data elements that MIG identified as assisting in fraud, waste, and abuse detection. For example, MSIS did not capture dispensing fee payment information. Without details regarding fees paid, fraud analysts cannot use MSIS data to assess whether the total amounts claimed and reimbursed contain inappropriate fees. For example, in a 2008 report, OIG analyzed data obtained directly from States to determine that

[52] "Durable Medical Equipment Ordered With Surrogate Physician Identification Numbers," OEI-03-01-00270.
[53] "Improper Payments for Dental Services," OEI-04-04-00210.

Medicaid dispensing fee reimbursement rates were about $2 higher than the average Medicare Part D dispensing fee.[54]

MSIS did not capture over one-third of the consolidated Medicaid Beneficiary and Eligibility Information data elements reviewed. MSIS does not capture 36 percent (4 of 11) of the Medicaid Beneficiary and Eligibility Information data elements we consolidated from the list of data elements that MIG identified as useful for fraud, waste, and abuse detection. Three of the four missing data elements were for the beneficiary's name (i.e., first, middle, and last name). Absence of beneficiary names may hinder analysts' ability to reliably match Medicaid claims data to other data sources for fraud, waste, and abuse data analysis and detection. Specifically, according to CMS, the link between data sources would be more reliable if MSIS captured the beneficiary's name.[55]

CONCLUSION

MSIS is the only source of nationwide Medicaid claims and beneficiary eligibility information. CMS collects MSIS data directly from States to, among other things, assist in detecting fraud, waste, and abuse in the Medicaid program. Timely, accurate, and comprehensive MSIS data can contribute to more effective health care fraud, waste, and abuse identification and prevention.

We determined that during FYs 2004–2006, MSIS data were an average of 1½ years old when it was released to all users. In addition, CMS did not fully disclose or document information about the accuracy of MSIS data. Furthermore, MSIS did not capture many of the data elements that can assist in fraud, waste, and abuse detection.

Our results indicate opportunities for States and CMS to reduce the timeframes for file submission and validation, respectively. Furthermore, there are opportunities for CMS to improve the documentation and disclosure of error tolerance adjustments; and expand current State Medicaid data collection and reporting to further assist in fraud, waste, and abuse detection.

This report is being issued directly in final form because it contains no recommendations. If you have comments or questions about this report, please provide them within 60 days. Please refer to report number OEI-04-07-00240 in all correspondence.

[54] "Review of the Relationship Between Medicare Part D Payments to Local, Community Pharmacies and the Pharmacies' Drug Acquisition Costs," A-06-07-00107.

[55] For example, CMS's Enterprise Cross-Reference Database matches identification information from three independent data sources: (1) Medicare's Enrollment Database, (2) the Outcome and Assessment Information Set, and (3) MSIS to identify Medicaid beneficiaries who are also eligible for Medicare benefits. The Medicare Enrollment Database and the Outcome and Assessment Information Set include the beneficiary's name; MSIS does not.

APPENDIX A

Databases Dependent on Medicaid Statistical Information System Data

Medicaid Statistical Information System (MSIS) data are used as a source of information for the following Centers for Medicare & Medicaid Services (CMS) databases:

The MSIS State Summary Data Mart: The MSIS State Summary Data Mart generates Medicaid eligibility and overall program utilization statistics. The MSIS State Summary Data Mart extracts data from both validated MSIS eligibility and claims files posted to the production database.[56] This data mart is accessible to the public via the Internet.

The MSIS Drug Utilization Data Mart: The MSIS Drug Utilization Data Mart generates Medicaid drug utilization statistics for groups of drugs. The MSIS Drug Utilization Data Mart extracts MSIS prescription drug information only from validated MSIS claims files posted to the production database. This system is not dependent upon Medicaid beneficiary information from validated MSIS eligibility files.[57] This data mart is accessible to the public via the Internet.

The Medicaid Analytical Extract: The Medicaid Analytical Extract is a set of person-level data files of Medicaid eligibility, service utilization, and payments. The database extracts data from both validated MSIS eligibility and claims files posted to the production database to convert the fiscal year-based MSIS quarterly files into calendar year files. These data are only accessible to users who enter into a data use agreement with CMS.[58]

The Enterprise Cross-Reference Database: The Enterprise Cross-Reference (ECR) Database matches identification information from three independent data sources: (1) the Medicare Enrollment Database, (2) the Outcome and Assessment Information Set, and (3) MSIS. The ECR Database identifies name, Social Security number, and gender from each system to establish linkages and identify Medicare beneficiaries who are also eligible for Medicaid benefits (dual-eligible beneficiaries). The ECR Database extracts this information from validated MSIS claims files posted to the production database. These data are not accessible to the public.[59]

The Medicaid Integrity Group Data Engine: CMS stores the MSIS data on this system to support CMS fraud, waste, and abuse analysis efforts and assist Medicaid Integrity Group contractors perform postpayment provider audits. These data are not accessible to the public.[60]

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[56] CMS, MSIS State Summary Data Mart. Available online at http://msis.cms.hhs.gov/. Accessed on December 1, 2008.

[57] CMS, MSIS Drug Utilization Data Mart. Available online at http://msis.cms.hhs.gov/drugmart.htm. Accessed on December 1, 2008.

[58] CMS, Medicaid Analytical Extract Web site. Available online at http://www.cms.hhs.gov/MedicaidDataSourcesGenInfo. Accessed on December 1, 2008.

[59] CMS, "Enterprise Cross-Reference User Guide," January 2007.

[60] CMS technical comments on OIG's draft memorandum report, August 2009.

APPENDIX B

Characteristics of Medicaid Statistical Information System Error Tolerance Adjustments

Medicaid Statistical Information System Data Validation Error Tolerance Adjustments as of June 2007	Number of Adjustments
Inactive Error Tolerance Adjustments	
Adjustments to invalid Medicaid Statistical Information System (MSIS) file type/data element combinations (e.g., adjustments to "Age" data elements that do not exist in MSIS claims files)	3,470
Adjustments to data elements not subjected to data validation tests (e.g., systemically generated and header data elements)	1,759
Adjustments that change error tolerances to levels already established by programmed defaults	1,204
Adjustments to unused data elements	693
Adjustments to U.S. Territory MSIS files not currently collected by the Centers for Medicare & Medicaid Services	71
Inactive Error Tolerance Adjustments	**7,197**
Percentage of Total	75%
Active Error Tolerance Adjustments	
Adjustments that change programmed defaults to error tolerance levels documented in the MSIS Data Dictionary	914
Adjustments that increase programmed defaults above error tolerance levels documented in the MSIS Data Dictionary (1,528 of 2,442 = 63% of Total Active Adjustments)	1,528
Active Error Tolerance Adjustments	**2,442**
Percentage of Total	25%
Total Inactive and Active Error Tolerance Adjustments	**9,639**

APPENDIX C

Comparison of Medicaid Data Elements

The following tables compare 100 data elements we consolidated from a list of 182 data elements the Medicaid Integrity Group (MIG) identified, in collaboration with other components in the Centers for Medicare & Medicaid Services (CMS), Department of Justice, and Office of Inspector General (OIG) officials, as useful for Medicaid fraud, waste, and abuse analysis (hereinafter referred to as MIG-identified data elements) to 85 similar data elements we consolidated from 255 Medicaid Statistical Information System (MSIS) data elements. Blank MSIS data element fields indicate that MSIS does not contain similar data elements. We grouped the consolidated data elements into four categories that we developed for our review:

- Service Provider Identifiers
- Procedure, Product, and Service Descriptions
- Billing Information
- Beneficiary and Eligibility Information

Table C-1: Comparison of MIG and MSIS Medicaid Service Provider Identifier Data Elements

MIG Data Elements		MSIS Data Elements	
01	Provider Billing Name		
02	Provider Business Employer Identification (ID) Number		
03	Provider Business Entity		
04	Provider Business Owner Name		
05	Provider Business State		
06	Provider Business Street Address		
07	Provider Business Town/City		
08	Provider Business/Practice Name		
09	Provider Category	01	Provider-Taxonomy
10	Provider ID – Admitting	02	Provider-ID-Number-Servicing
11	Provider ID – Billing	03	Provider-ID-Number-Billing
12	Provider ID – Prescriber	04	Provider-ID-Number-Servicing
13	Provider ID - Prescriber Drug Enforcement Agency ID	05	Provider-ID-Number-Servicing
14	Provider ID – Referring		
15	Provider ID – Servicing	06	Provider-ID-Number-Servicing
16	Provider ID	07	National-Provider-ID
17	Provider License/Certification Number		
18	Provider Servicing Flag		
19	Provider Specialty	08	Specialty-Code
20	Provider Type	09	Provider-Taxonomy

Source: OIG comparison of data elements described in the CMS MSIS Data Dictionary, Release 3, effective February 15, 2009, to data elements MIG identified as useful for Medicaid fraud, waste, and abuse data analysis and detection as of September 2008.

Table C-2: Comparison of MIG and MSIS Medicaid Procedure, Product, and Service Description Data Elements

MIG Data Elements		MSIS Data Elements	
01	Admission Date	01	Admission-Date
02	Admission Diagnosis Code	02	Diagnosis-Code
03	Brand Necessary Drug Indicator		
04	Diagnosis Code	03	Diagnosis-Code
05	Diagnostic Related Group (DRG) Code	04	DRG
06	Discharge Hour		
07	DRG Allowed Charge/DRG Rate		
08	DRG Allowed Charge Source	05	DRG Indicator
09	DRG Code Description		
10	Drug Name		
11	Drug Type (Brand/Generic)		
12	Explanation of Benefit Code		
13	National Drug Code	06	National-Drug-Code
14	Nursing Facility Indicator	07	Nursing-Facility-Days
15	Package Size of Drug Dispensed		
16	Patient Discharge Code	08	Patient-Status
17	Per Diem Rate		
18	Place of Service	09	Place-of-Service
19	Prescription Dispensed Date		
20	Prescription Written Date	10	Date-Prescribed
21	Procedure (Proc) Code	11	Proc-Code
22	Procedure Code Description		
23	Procedure Code Modifier	12	Proc-Code-Mod
24	Service End Date	13	Ending-Date-of-Service
25	Service Start Date	14	Beginning-Date-of-Service
26	Surgery Date	15	Proc-Date-Principal
27	Therapeutic Class of Drug		
28	Tooth Number		
29	Tooth Quadrant		
30	Tooth Surface		
31	Type of Admission		
32	Type of Bill	16	Type-of-Claim
33	Type of Facility	17	Place-of-Service

Source: OIG comparison of data elements described in CMS's MSIS Data Dictionary, Release 3, effective February 15, 2009, to data elements MIG identified as useful for Medicaid fraud, waste, and abuse data analysis and detection as of September 2008.

Table C-3: Comparison of MIG and MSIS Medicaid Billing Information Data Elements			
MIG Data Elements		**MSIS Data Elements**	
01	Amount Billed	01	Amount-Charged
02	Amount of Timed Anesthesia Units Billed	02	Service-Code-Mod
03	Amount Paid	03	Medicaid-Paid-Amount
04	Amount Paid by Other Insurance	04	Other-Third-Party-Payment
05	Amount Paid for DRG Outlier Payments		
06	Average Wholesale Price of Prescription		
07	Control Number of Claim	05	Internal-Control-Number-Original
08	Control Number Per Item	06	Line-Number-Original
09	Date Paid	07	Date-of-Payment-Adjudication
10	Dispense Fee Paid		
11	Drug Price Paid by System		
12	Drug Strength		
13	Final Paid Claim Indicator		
14	Manual Override/Forced Claim Indicator		
15	Medicare Allowed Amount	08	Medicare-Coinsurance-Payment
16	Medicare Coinsurance Computed	09	Medicare-Coinsurance-Payment
17	Medicare Coinsurance Reported	10	Medicare-Coinsurance-Payment
18	Medicare Covered Drug Indicator		
19	Medicare Crossover Amount Paid	11	Medicare-Coinsurance-Payment
20	Medicare Crossover Date Paid		
21	Medicare Deductible Computed	12	Medicare-Coinsurance-Payment
22	Medicare Deductible Reported	13	Medicare-Coinsurance-Payment
23	Net Claim Charge	14	Amount-Charged
24	Number of Days Not Reimbursable		
25	Number of Days Reimbursed	15	Medicaid-Covered-Inpatient-Days
26	Number of Days Supplied	16	Days-Supply
27	Number of Refills	17	New-Refill-Indicator
28	Number of Units Billed	18	Quantity-of-Service
29	Number of Units Paid	19	UB-Rev-Units
30	Prior Authorization Number		
31	Quantity Billed	20	Quantity-of-Service
32	Remittance Advice Number		
33	Revenue Code	21	UB-Revenue-Code
34	Split Claim Indicator		
35	Suspended Claim Date		
36	Total Charges Not Covered		

Source: OIG comparison of data elements described in CMS's MSIS Data Dictionary, Release 3, effective February 15, 2009, to data elements MIG identified as useful for Medicaid fraud, waste, and abuse data analysis and detection as of September 2008.

Table C-4: Comparison of MIG and MSIS Medicaid Beneficiary and Eligibility Data Elements			
MIG Data Elements		**MSIS Data Elements**	
01	Recipient County Code	01	County-Code
02	Recipient Date of Birth	02	Date-Of-Birth
03	Recipient Eligibility Code	03	Eligibility-Group
04	Recipient Eligibility Reason Code	04	Basis-of-Eligibility
05	Recipient Family/Client ID		
06	Recipient First Name		
07	Recipient ID Number	05	MSIS-ID-Number
08	Recipient Last Name		
09	Recipient Middle Name		
10	Recipient State Code	06	State-Abbreviation
11	Recipient ZIP Code	07	ZIP-Code

Source: OIG comparison of data elements described in CMS's MSIS Data Dictionary, Release 3, effective February 15, 2009, to data elements MIG identified as useful for Medicaid fraud, waste, and abuse data analysis and detection as of September 2008.

APPENDIX D

Status of Medicaid Statistical Information System Files Reviewed by Year

The table below shows the number of Medicaid Statistical Information System (MSIS) files that we reviewed (1) that had not yet been submitted by States to the Centers for Medicare & Medicaid Services (CMS), (2) that were in the CMS data validation process, and (3) that had been released by CMS as valid data.

Number of MSIS Files Reviewed in Each CMS Processing Phase by Year								
Fiscal Year	Not Submitted		In Processing		Released as Valid		Total	
2004	0		0		1,020	100%	1,020	100%
2005	40	4%	440	43%	540	53%	1,020	100%
2006*	258	25%	667	65%	95	9%	1,020	100%
2004–2006	**298**	**10%**	**1,107**	**36%**	**1,655**	**54%**	**3,060**	**100%**

* Because of rounding, the fiscal year (FY) 2006 percentages do not total 100 percent.

Source: Office of Inspector General analysis of 3,060 FYs 2004–2006 State MSIS eligibility and claims file submissions.

APPENDIX E

Days That Medicaid Statistical Information System Files Spent in Processing

Average, Median, Minimum, and Maximum Days That Validated Medicaid Statistical Information System Files Spent in All Phases of the File Submission and Data Validation Process

File Type	Files	Average Days	Median Days	Minimum Days	Maximum Days
Eligibility	331	595	572	70	1,057
Claims	1,324	595	567	70	1,095
All Files	1,655	595	567	70	1,095

N=1,655 fiscal years (FY) 2004-2006 State Medicaid Statistical Information System (MSIS) file submissions that had cleared all three phases of the file submission and data validation process as of June 2007.

Source: Office of Inspector General analysis of 3,060 FYs 2004–2006 State MSIS eligibility and claims file submissions.

APPENDIX F

Number of Undocumented Medicaid Statistical Information System Error Tolerance Adjustments by Year

Undocumented Active Medicaid Statistical Information System Data Validation Error Tolerance Adjustments From 1999 to 2007		
Year of Undocumented Adjustment	**Number of Undocumented Adjustments**	**Percentage of Total Undocumented Adjustments**
1999	249	16%
2000	516	34%
2001	116	8%
2002	103	7%
2003	57	4%
2004	239	16%
2005	92	6%
2006	89	6%
2007	67	4%
Overall	**1,528**	**100%**

N=1,528 active adjustments that increased Medicaid Statistical Information System (MSIS) data validation error tolerances over the default levels documented in the MSIS Data Dictionary.
Because of rounding, the percentages do not total 100 percent.
Source: Office of Inspector General analysis of 9,639 error tolerance adjustments programmed into the MSIS Data Validation program in June 2007.

APPENDIX G

Dates of Medicaid Statistical Information System Error Tolerance Adjustments

The table below shows the dates when the Centers for Medicare & Medicaid Services adjusted the error tolerances of the Medicaid Statistical Information System (MSIS) Diagnosis-Code-Principal data element from 5 percent to 100 percent for 13 States. These adjustments allowed the affected MSIS files to clear quality review with an unknown number of errors.

MSIS "Diagnosis-Code-Principal" Error Tolerances Adjusted From 5 Percent to 100 Percent		
MSIS File Type	**State**	**Adjustment Date**
Inpatient Claims	DC	December 15, 2003
	GA	July 19, 2000
	LA	January 05, 2000
	NV	March 13, 2000
	ND	November 17, 1999
	OH	August 18, 1999
	SC	October 12, 1999
	SD	March 16, 2000
	TX	December 21, 2000
	WA	July 18, 2000
	WV	September 21, 1999
	WY	May 26, 2000
Other Claims	LA	January 5, 2000
	NV	March 9, 2000
	TN	February 1, 2001
	TX	December 26, 2000

Source: Office of Inspector General analysis of 9,639 error tolerance adjustments programmed into the MSIS Data Validation program in June 2007.