Abstract

The Medicaid Information Technology Architecture (MITA**)** initiative seeks to re-orient Medicaid information systems toward a more beneficiary-centered approach that can help achieve the quality goals of the Department of Health and Human Services, the Centers for Medicare & Medicaid Services (CMS), and individual States. The focus of traditional Medicaid Management Information Systems (MMIS) has been on assuring accurate claim adjudication and standardized Federal reporting. The MITA framework seeks to move the MMIS toward a greater focus on the beneficiary, integration of clinical and administrative data, support of program analysis and decision making, and an enhanced capacity for Medicaid to communicate with other programs and payers.

The higher levels of maturity described within the MITA initiative describe scenarios that can support quality improvement by providing a more comprehensive base of information on individual beneficiaries and real-time data on changes in the delivery of services in real time. This can enhance the ability of providers to reduce unnecessary testing and procedures, avoid medical errors and adverse drug events, and assure that appropriate care is delivered. When the higher levels of maturity described in MITA have been achieved, Medicaid program managers will have the ability to identify and target at-risk populations, expedite prior authorization decisions, develop quality statistics for specific providers, and benchmark provider performance to measures calculated by other payers or States.

A July 2007 report issued by the DHHS Office of Inspector General cited numerous examples of State Medicaid HIT and HIE initiatives intended to serve these aims. CMS intends to take a series of concrete actions to explore opportunities for using MITA principles to advance quality goals for Medicaid beneficiaries.

Introduction

The purpose of this paper is to provide background on the goals of CMS Medicaid quality efforts and on Medicaid information systems, particularly recent efforts to reorient these systems toward a beneficiary-centered focus guided by Medicaid Information Technology Architecture principles. The paper also considers how the MITA initiative can support quality improvement.

CMS Quality Goals

The quality vision of the Centers for Medicare & Medicaid Services is to provide the right care for every person every time. It seeks to assure that this care is safe, effective, efficient, person-centered, timely; and equitable.[1] The Center for Medicaid and State Operations (CMSO) works to realize this vision for Medicaid and the State Children's Health Insurance Program (SCHIP) through activities in five core areas:

- ***Evidenced-Based Care and Quality Measurement*** - CMS supports states in their efforts to improve performance measurement and ultimately the quality of care through the use of evidence-based measure sets that have wide acceptability in the health care industry.

- ***Value-Based Payment Methodologies*** - CMS supports states in their efforts to implement programs that promote reimbursement for quality, access efficiency, and successful outcomes.
- ***Health Information Technology (HIT)*** - CMSO encourages States to explore creative uses of HIT that contribute toward the building of new regional and national health information infrastructures.
- ***Partnerships*** – CMS works with other committed partners to help blend different perspectives and resources in the collective pursuit of common quality goals.
- ***Information Dissemination and Technical Assistance*** - CMS facilitates the sharing of promising practices, lessons learned, and innovative approaches to emerging issues through its website (http://www.cms.hhs.gov/MedicaidSCHIPQualPrac/), conferences, publications, and participation in conferences.
- ***Reduction of Healthcare Disparities*** **–** CMS works to reduce racial and ethnic health disparities in Medicaid and SCHIP through identifying contributing factors and areas of opportunity, dissemination of promising practices, and forming partnerships with various agencies, private and public sector organizations, States, and other interested groups. [2]
- Several of these core areas are reflected in Secretary Leavitt's initiative that challenges State Medicaid programs to partner in value-driven healthcare activities centering around four cornerstones:
- ***Interoperable Health Information Technology*** – States are encouraged to engage in efforts such as monitoring the activities of national standard setting bodies, working with providers toward greater utilization of electronic health records (EHR) that have been certified by national certification bodies, and participating in health information exchange (HIE).
- ***Measuring and Publishing Quality Information*** – States are encouraged to request that health plans use and publicly report measures adopted by recognized national bodies and to request that plans and External Quality Review Organizations (EQRO) participate in national quality transparency collaboratives. States are also encouraged to participate in national public-private collaborative committees or workgroups to establish and support standards in measuring or reporting quality and to become a member of the National Quality Forum.
- ***Measuring and Publishing Price Information*** – States are encouraged to make price information available to beneficiaries so that they can make more confident decisions about their health care providers and treatment options.
- ***Creating Positive Incentives for High Quality Health Care Purchasers*** – These could include provider incentives such as rewards for delivering high-value care, direct financial incentives and/or public recognition to providers who demonstrate superior performance, and incentives to encourage provider adoption on electronic health records and health information exchange. They could also target beneficiaries through consumer-directed health plans with a health savings account or high reimbursement account, beneficiary incentives for prevention and wellness, and provide beneficiaries with incentives for self-management of chronic illness.[3]

Medicaid and Health Information Technology

The Centers for Medicare & Medicaid Services recognizes the strategic importance of promoting the use of health information technology to advance quality of care and life. Released in August 2005, the CMS Quality Improvement Roadmap stresses the need for Medicare and Medicaid to use electronic health systems to support more effective quality improvement efforts.[4] A key element of the Medicaid/State Children's Health Insurance Program (SCHIP) Quality Strategy, issued in July 2006, is to help States enhance their health information infrastructure and improve the effectiveness and efficiency of health care delivery.[5]

On August 22, 2006, President George W. Bush signed an Executive Order to "ensure that health care programs administered or sponsored by the Federal government promote quality and efficient delivery of health care through the use of health IT, transparency regarding health care quality and price, and better incentives for program beneficiaries, enrollees, and providers".[6] Similarly, the Value-Driven Health Care initiative developed by Secretary Mike Leavitt commits the Department of Health and Human Services (DHHS) to partnerships intended to achieve the interoperability of health care information, the development of standards and a certification process to ensure that those standards are met, and the sharing of data to facilitate clinical and consumer decisions, as well as performance measurement.[7]

The Deficit Reduction Act of 2005 made $150 million available for CMS to award in support of State Medicaid transformation initiatives. One of the permissible uses of transformation grant funds enumerated in section 1903(z) of the Social Security Act is to foster the development of "methods for reducing patient error rates through the implementation and use of electronic health records, electronic clinical decision support tools, or e-prescribing programs". The April 27, 2007 State Medicaid Directors letter soliciting State applications for a second round of transformation grants indicated that the Secretary of DHHS also encouraged States "to apply for grant funds to develop value-driven health care initiatives including systems that provide transparency in health care that allow consumers to compare the quality and price of services so they can make informed choices among doctors and hospitals".[8]

Evolution of Medicaid Information Systems

In response to rapid growth in Medicaid spending during the early years of the program, Public Law 92-603 was enacted in 1972, requiring each State Medicaid Program to have an automated claims processing and information retrieval system that would facilitate accurate claim adjudication and standardized Federal reporting. While Federal prior approval of these Medicaid Management Information Systems (MMIS) and subsequent modifications was required for a State to claim enhanced Federal matching funds, Federal review tended to focus more on system

outputs than on architecture, to permit States flexibility in developing customized solutions to their unique operational needs.[9], [10]

This has resulted in considerable variation among States in MMIS design and specifications, which has inhibited data sharing among State Medicaid programs and between the Medicaid agency in a given State and sister agencies. [11] Moreover, as each State automated additional program functions, the new components were often not fully integrated into the MMIS and could not easily communicate with one another because of their unique architecture, data standards, and maintenance and support elements.[12] [13] Because this claims-based system lacked clinical information and had a program rather than beneficiary-centered orientation, State Medicaid personnel were also unable to obtain meaningful information on health outcomes.[14] For these various reasons, the traditional MMIS has not been well-suited for supporting quality assessment and improvement activities.

Genesis of the Medicaid Information Technology Architecture (MITA) Initiative

In its 2001 report entitled, "Crossing the Quality Chasm: A New Health System for the 21st Century", the Institute of Medicine underscored the need for clinical information systems to be redesigned in support of evidence-based practice and improved outcomes. By sharing the data generated by such systems through health information exchanges, various stakeholders and the health care system in general can become more efficient in their operations and providers are more able to deliver patient-centered care that is coordinated and coherent.[15]

Recognizing the need to modernize State Medicaid information systems, CMS, working with States and other stakeholders, launched the Medicaid Information Technology Architecture (MITA) initiative in 2002.[16] MITA is a framework of national standards for use in developing the information systems that support a State's Medicaid Enterprise. The MITA framework is separated into three architecture components: Business Architecture, Technical Architecture, and Information Architecture.

The "Business Architecture" is generated by identifying and defining everything that a State Medicaid enterprise does as "Business Processes" within eight "Business Areas":

- Business Relationship Management,
- Care Management,
- Contractor Management,
- Member Management,

- Operations Management,
- Program Integrity,
- Program Management, and
- Provider Management.

Within each of these eight "Business Areas" are "Sub-Business Areas" or "Clusters". The individual "Business Processes" are defined within these "Sub-Business Areas / Clusters".

The mission of MITA is to establish a national framework of enabling technologies and processes that supports improved administration of the Medicaid program and health care outcomes for Medicaid beneficiaries. By establishing this framework, MITA seeks to move Medicaid information systems toward a greater focus on the beneficiary, integration of clinical and administrative data, support of program analysis and decision making, and an enhanced capacity for Medicaid to communicate with other programs and payers. [17]

MITA is based on the premise that interoperability works most efficiently when planned for, and built into, system designs at a very early stage. This prevents the need for more burdensome and expensive back-end fixes that are otherwise necessary to facilitate interoperability of systems for collaborative purposes, such as data exchange.

The MITA initiative is expected to lead to the development of a universal data dictionary and standard definitions of common data elements that will facilitate communications between a State's core MMIS and any stand-alone systems that have been created for special operational purposes (i.e., interoperability).[18] Adoption of MITA principles is also expected to enable State Medicaid programs to participate in regional and, ultimately, national data exchange efforts.[19] In April 2007 CMS began asking States to conduct a self-assessment, in which they document current business areas and processes and set goals to improve these processes within the MITA framework.[20] CMS plans to work with individual States to test products that further MITA principles as they become available and disseminate model approaches taken by early adopter States.[21] CMS will also revise the MMIS advance planning document (APD) review process and criteria, which States must meet before they can receive an enhanced MMIS Federal match, to assure that State information technology (IT) changes are consistent with MITA goals and objectives. These review criteria will be developed based on input from the first States to adopt MITA principles.[22]

CMSO is in the process of adding "Quality Improvement" and "Quality Measurement" to the MITA Business Architecture in the "Program Quality Management" Sub-Business Area / Cluster in the "Program Management" Business Area. When that process has been completed, state Medicaid programs can begin to include these components in their implementation of the MITA.

Nexus Between MITA and Quality

The integration of system components and interoperability of Medicaid with non-Medicaid systems can support quality improvement in several ways. By facilitating communications among systems, MITA can provide analysts with a comprehensive base of information on beneficiaries who may rely at various times on sources of coverage other than Medicaid.[23] The greater systems efficiency made possible by interoperability also enables State Medicaid programs to become aware of changes in the delivery of services in real time.[24]

With easier access to a broader picture of a beneficiary's health status and health care experience, providers are better able to reduce unnecessary testing and procedures, avoid medical errors and adverse drug events, and assure that appropriate care is delivered. This is particularly relevant for Medicaid populations with chronic conditions, physical and behavioral comorbidities, and long term care needs.[25] MITA can help Medicaid program managers identify and target at-risk populations, develop quality statistics for specific providers, and benchmark provider performance to measures calculated by other payers or States.[26]

Health Information technology and health information exchange (HIE) can also enhance the efficiency of health insurance operations. The ability to obtain clinical information quickly can enable State Medicaid agencies to expedite prior authorization decisions and thereby assure that beneficiaries receive needed services sooner. The real-time capture of provider data through HIE can also streamline the collection of Medicaid data needed for quality monitoring and improvement purposes. Linking data from Medicaid and other public programs and private payers can facilitate more accurate and efficient population-based health surveillance activity[27] and provide Medicaid managers and providers with a more complete picture of each beneficiary's medical record (e.g., immunizations).

Consistent with the DHHS Secretary's Value-Driven Health Care initiative, MITA can help State Medicaid programs develop the tools needed to increase health care transparency, such as EHRs, electronic prescribing, and personal health records (PHRs).[28] This focus can aid State Medicaid programs in developing quality standards for comparative purposes, making quality and cost information more easily available to beneficiaries, and assessing return on investment.[29]

Examples of Current State Medicaid Initiatives

In July 2007, the DHHS Office of Inspector General issued a report entitled, "State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange". The OIG found that 12 State Medicaid agencies had implemented HIT initiatives such as claims-based electronic health records, electronic prescribing, remote disease monitoring, and personal health records. Twenty-five State Medicaid agencies were involved in planning and developing statewide HIE networks. In the context of these efforts, the OIG found that 13 State Medicaid agencies include MITA in their HIT and HIE planning.[30] The Medicaid Directors in these 13 States indicated that implementing MITA will enhance the interoperability of their MMISs, facilitate Medicaid participation in HIT and HIE initiatives, and promote quality assessment through integration of clinical information with claims-based data.[31]

In January 2007, CMS awarded 33 first-round Medicaid Transformation Grants, totaling $103 million. Eighteen of these grants, totaling $64 million, addressed HIT and HIE initiatives.[32] In September 2007, CMS awarded 17 second-round Medicaid Transformation Grants, totaling almost $52 million. Twelve of these grants, totaling nearly $37 million, addressed HIT and HIE initiatives. Summary information and grant applications for each initiative can be found on the CMS website at http://www.cms.hhs.gov/MedicaidTransGrants/02_2007awards.asp#TopOfPage.

Various State HIT, HIE, and MITA related initiatives are also referenced in the individual State quality packets disseminated in response to the CMS goal of increasing "the number of States that have the ability to assess improvements in access and quality of health care".

Future Opportunities and Next Steps

CMS encourages State Medicaid programs to work toward incorporating MITA principles that will enable them to implement initiatives that can enhance the quality of care and life for their beneficiaries. As CMS indicates in responding to MITA Frequently Asked Question FC-003, "the true litmus test for making the business case for MITA will depend upon the extent to which it contributes to improving overall health outcomes and reduces overall health expenditures on behalf of Medicaid beneficiaries". [33]

CMS intends to take a series of concrete actions to explore opportunities for using MITA principles to advance quality goals for Medicaid beneficiaries. Initial steps will include the following:

- Develop a task force composed of State Medicaid Directors, Medicaid Medical Directors, and information technology and quality professionals
- Conduct an assessment of how States are currently using the MMIS or other data systems to support Medicaid quality and disseminate promising practices
- Determine gaps in transparency of quality and cost data to support ends, such as provider assessment, consumer choice, and reporting

- Decide actions that can be taken to improve transparency
- Provide States with technical assistance through the joint efforts of CMS systems and quality staff
- Convene joint conference calls of standing systems, quality, and managed care Technical Advisory Groups to address issues impacting the re-engineering of Medicaid systems for quality purposes.

[1] CMS website, Quality of Care Center (http://www.cms.hhs.gov/center/quality.asp)

[2] HHS website, Value-Driven Health Care/Health Information Technology, http://www.hhs.gov/valuedriven/fourcornerstones/healthit/index.html

[3] HHS website, Value-Driven Health Care/Health Information Technology, http://www.hhs.gov/valuedriven/fourcornerstones/healthit/index.html

[4] CMS website, Quality of Care Center (http://www.cms.hhs.gov/center/quality.asp)

[5] CMS website, Medicaid and SCHIP Quality homepage, (http://www.cms.hhs.gov/MedicaidSCHIPQualPrac/)

[6] Alfreds, Shaun T; Tutty, Michael; Savageau, Judith A; Young, Scott; Himmelstein, Jay Health Care Financing Review, Winter 2006/2007, "Clinical Health Information Technologies and the Role of Medicaid", p.16

[7] HHS website, Value-Driven Health Care/Health Information Technology, http://www.hhs.gov/valuedriven/fourcornerstones/healthit/index.html

[8] CMS website, Medicaid Transformation Grants Overview, http://www.cms.hhs.gov/MedicaidTransGrants/

[9] Alfreds, Shaun T; Tutty, Michael; Savageau, Judith A; Young, Scott; Himmelstein, Jay Health Care Financing Review, Winter 2006/2007, "Clinical Health Information Technologies and the Role of Medicaid", p. 12

[10] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 7

[11] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 1

[12] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 4

[13] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 5

[14] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 9

[15] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 4

[16] Alfreds, Shaun T; Tutty, Michael; Savageau, Judith A; Young, Scott; Himmelstein, Jay Health Care Financing Review, Winter 2006/2007, "Clinical Health Information Technologies and the Role of Medicaid", p. 13

[17] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 3

[18] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, pp. 5-6

[19] CMS website, MITA Information Series, "The MITA Maturity Model", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 9

[20] Department of Health and Human Services Office of Inspector General Report, "State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange", issued August 21, 2007, p. 3.

[21] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 16

[22] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 6

[23] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", pp. 4-5

[24] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 6

[25] Alfreds, Shaun T; Tutty, Michael; Savageau, Judith A; Young, Scott; Himmelstein, Jay Health Care Financing Review, Winter 2006/2007, "Clinical Health Information Technologies and the Role of Medicaid", p. 15

[26] CMS website, MITA Information Series, "What Is MITA? An Overview", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAWhitePapers.asp#TopOfPage, p. 7

[27] Alfreds, Shaun T; Tutty, Michael; Savageau, Judith A; Young, Scott; Himmelstein, Jay Health Care Financing Review, Winter 2006/2007, "Clinical Health Information Technologies and the Role of Medicaid", p.16

[28] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 1

[29] Friedman, Richard H, Health Care Financing Review, Winter 2006/2007, "Medicaid Information Technology Architecture: An Overview", p. 9

[30] OIG News press release, "OIG Issues Report on State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange", August 21, 2007.

[31] OIG Report, "State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange", issued August 21, 2007, p. 14-15.

[32] OIG Report, "State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange", issued August 21, 2007, p. 4.

[33] CMS website, Medicaid Information Technology Architecture (MITA), "MITA Questions", http://www.cms.hhs.gov/MedicaidInfoTechArch/02_MITAQuestions.asp#TopOfPage p. 12