
Part I — Business Architecture

Chapter 2 — Concept of Operations

Introduction

This chapter presents the Medicaid IT Architecture (MITA) Concept of Operations (COO) and explains its role in the MITA Framework. The MITA initiative challenges us to look to the future. The COO provides a framework for capturing the As-Is environment and the To-Be future state. State Medicaid agencies are familiar with As-Is and To-Be models as tools to describe current operations and improvements they would like to see in the future. The MITA team chose the COO model as the best approach for communicating future possibilities and identifying transition plans for States that leverage technical solutions to improve their business operations. The focal point of the COO is to provide a collective vision of the future.



This chapter answers the following questions:

- What is a Concept of Operations?
- What part does the Concept of Operations play in the MITA Framework?
- What are the Medicaid and MITA visions?
- How are stakeholder roles transformed?
- How are information and communications transformed?
- What are the primary enablers of the transformation?
- How do Medicaid agency operations evolve?
- How does the transformation occur?

Purpose

The purpose of the COO is to document the Medicaid program vision of the future and describe the impact of planned improvements on stakeholders, information exchanges, Medicaid operations, and healthcare outcomes.

Scope

The COO helps frame the vision and showcase the target To-Be state. It does not describe the transformation pathway. As with any vision, short-term gains are more concrete than long-term achievements. The To-Be COO depends on enablers, among which are those that the healthcare industry believes will be available within the next 5 to 10+ years. The MITA Framework must be updated as changes occur.

Background — Sources for the Vision

Early in the project, the MITA team undertook a series of activities to document a collective vision for the Medicaid program evolution over the next 10+ years, including the following:

- Review of the State Systems Technical Advisory Group (S-TAG) document, *Re-engineering the MMIS 2002* and its adoption by Oregon in a statement of requirements for future improvement. *These documents are used in the MITA 5-year To-Be COO.*
- Review of the Medicaid Health Insurance Portability and Accountability Act of 1996 (HIPAA)-Compliant Concept Model (MHCCM) documentation. The MHCCM summarizes the business and data models developed by a dozen States in the 1990s. *Information from this analysis is used in the MITA As-Is COO.*
- Review of the Private Sector Technology Group (PS-TG) documents, such as the *Medicaid Management Information System (MMIS) of the 21st Century*. *These documents help confirm To-Be targets.*
- Review of recent RFPs from States to capture the objectives and goals. *RFPs support directions ascribed to State Medicaid agencies.*
- Review of selected State strategic plans and office of the State or agency Chief Information Officer (CIO) guidance for the improvement of the enterprise. *These documents illustrate how the Medicaid agency is influenced by State goals and directives.*
- Interviews conducted by the MITA team with nine States selected for their diversity. Interviewees included senior State executive management officials, program managers, and system administrators. Detail was captured during onsite visits, teleconferences, and a Web-enabled interview instrument. Interviews focused on current problems and obstacles, needs and objectives, and desires for future improvements. *Results of the interviews are a primary source of input to the To-Be COO.*
- “Visioning” sessions conducted by the MITA team during the MMIS conference in New Orleans in 2003. Many States participated in these sessions designed to capture online responses to questions regarding current problems, future directions, barriers, and enablers. A companion session was conducted with vendors attending the same conference. *Results of the visioning sessions are a primary source of input to the To-Be COO.*
- Interviews with Center for Medicaid and State Operations (CMSO) Division heads and managers in other Federal agencies (e.g., the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Centers for Disease Control and Prevention (CDC). These interviews revealed that other divisions and agencies are facing similar pressures to improve performance. *These interviews help to strengthen the Medicaid and MITA statements about the To-Be COO.*
- Internal survey conducted by the MITA team regarding information and technical capabilities predicted in the near term (5 years) and long term (10+ years) scenarios. *In*

the COO, technical capabilities are shown as “enablers.” As capabilities, they are described in more detail in Part III of the MITA Framework 2.0.

- Updates from standards-making organizations regarding plans for the future evolution of national standards. The MITA team tracks developments in ANSI standards mandated by HIPAA, the development of HL7 Reference Information Model, and other standards. *Keeping current with the standard makers is important to supporting the timeline and projected improvements referenced in the COO.*
- Assessment of directives and guidance coming from the Federal Enterprise Architecture (FEA), the Department of Health and Human Services (DHHS) Federal Health Architecture (FHA), and the Office of the National Coordinator for Health Information Technology (ONC). The MITA Framework strives to align with national mandates and initiatives. *The To-Be COO incorporates applicable elements of vision and action.*

Figure 2-1 illustrates how the MITA team used the source material to identify the Medicaid mission and goals common to most States. The MITA team created the MITA mission, goals, and objectives in order for the Framework to support and meet States’ collective statement of Medicaid mission and goals.

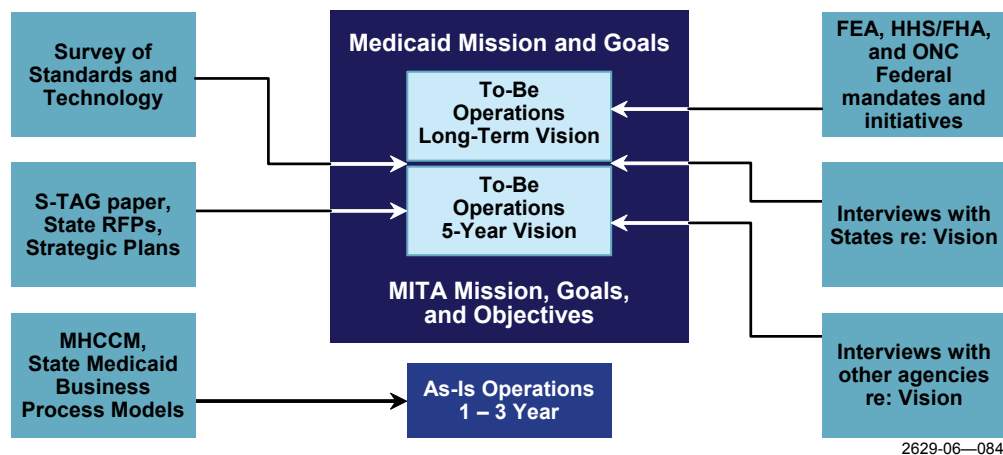


Figure 2-1. Interviews and Source Documents Helped Shape the Medicaid Vision and the MITA COO

The MITA team analyzed the interviews and documents and classified the results into descriptions of Medicaid program objectives and supporting enablers associated with a timeline that extended from the present to a 10+ year horizon.

What Is a Concept of Operations?

A COO is a structure that helps organizations document their current state of operations, envision future desired transformations, and describe the improvements they seek in interactions with stakeholders, the quality and content of data exchanges, and their business capabilities. A COO is a well-thought-out vision of the future and stakeholders' places in it.

What Part Does the Concept of Operations Play in the MITA Framework?

The COO that the MITA Framework presents synthesizes the vision that States have provided for improvements in the Medicaid program and in agency operations in the future. The COO encompasses the individual operations of 50+ Medicaid agencies and reflects different organizational structures, policies, procedures, rules, and data. **Table 2-1** summarizes the key components of the COO.

Table 2-1. Summary of Key Components of the Medicaid COO

Summary of Key Components of the Medicaid COO		
Component	Description	Impact on Transformation
Vision for the Medicaid Program	Describes a future that meets Medicaid goals as State Medicaid agencies and CMS envision them. The vision draws from many sources, including interviews with States and other agencies. It includes a statement about the Medicaid program mission and goals and about MITA mission, goals, and objectives.	The vision lays the foundation for the transformation of the Medicaid program by setting targets for the MITA Maturity Model and business capability improvements discussed in connection with the MITA Business Architecture.
Stakeholders	Identifies major stakeholders (e.g., beneficiaries, providers, payer agencies, regulators, legislators, and the public) and describes their roles now and in the future	Stakeholders and the roles they play are transformed, and new stakeholders emerge. Some changes might bring paradigm shifts in the ways individuals and organizations participate in Medicaid.
Information and data	Addresses data exchanges that occur among stakeholders now and that will occur in the future. It includes all data required by the Medicaid enterprise for its operations and all data shared or exchanged with other parties.	Information and data continuously undergo change. The MITA Framework presents a structure for ensuring that evolving data standards and new requirements for information meet objectives of higher levels of business maturity.
Drivers and Enablers	Summarizes drivers or enablers that propel and support the transformation (e.g., new legislation and regulations, new standards and technology, and shifts in demographics and revenue)	Enablers are external to the business operations but are major drivers for change. Part II and Part III of the MITA Framework 2.0 identify enablers and show their association with the MITA Business Capability Matrix.

Summary of Key Components of the Medicaid COO		
Component	Description	Impact on Transformation
As-Is Operations	Describes As-Is operations to establish a baseline and common ground across all States. As-Is operations are those found in most States today. (Not all States are at equal levels of maturity.)	As-Is operations are the “ground zero” for the transformation.
To-Be Operations	Describes the target vision over a 10+ year time frame. Graphics supplement the narrative description.	To-Be operations reflect changes we can expect to see over the next 5 years and dramatic changes — paradigm shifts — we can expect to see over the next 10+ years in the way Medicaid agencies do business.
Transformation Plan	Lays out the roadmap for the transformation	The Transformation Plan describes how States and CMS can realize the objectives of the transformation.

MITA challenges us to look into a future to achieve the vision of transformation. In reality, many obstacles can derail the plans for transformation, including revenue shortfalls, lack of resources, and failure of enablers to meet expectations. Even so, MITA principles can help keep us on track. The end game is not just about a rosy future. It is about working smarter regardless of the challenges that face us.

Components of the Medicaid COO are discussed below in more detail.

What Are the Medicaid and MITA Visions?

This section provides a high-level view of the Medicaid of the future (within 10+ years) to show the possibilities of transformation that the MITA framework envisions. The section next identifies sources for the vision and provides some examples of the transformation.

High-Level View of the Future

Figure 2-2 illustrates interactions between consumers, providers, and Medicaid agencies as they might appear in the next 10+ years. The remaining sections explain how this transformation likely will occur.



In an example shown in Figure 2-2, a pregnant woman applies for benefits through a “one-stop shop” community portal associated with a Regional Health Information Organization (RHIO), which she accesses from home or from a public resource center. She indicates her needs; responds to questions regarding age, location, and finances; receives a menu of services she might qualify for; selects the “High-Risk Pregnancy” program; responds to prompts for banking, residency, and nationality information; and receives preliminary approval of eligibility.

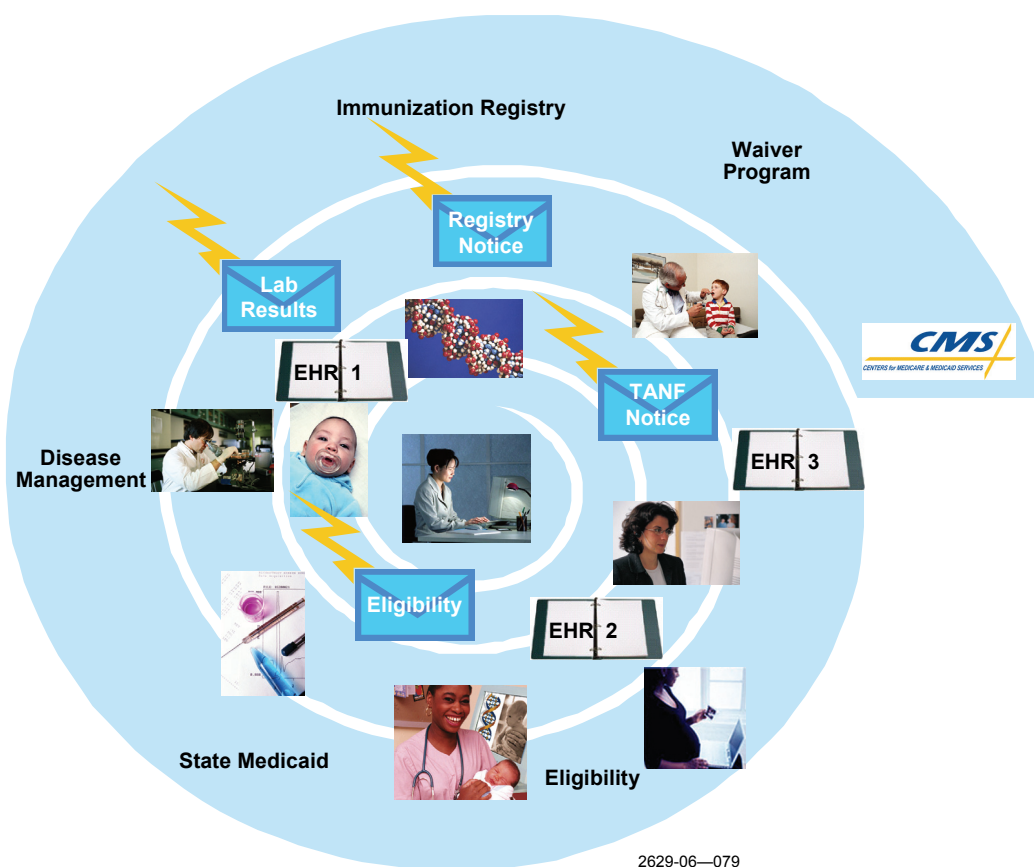


Figure 2-2. The COO Gives a 10+ Year Glimpse into the Future

The woman is then prompted to select an obstetrician from a list of high-risk specialists. The list aligns with the woman's address, linguistic and cultural preferences, and any complicating diagnoses. After the woman selects a physician, an automatically sent message prompts the physician to schedule an appointment. The physician's return message gives the patient a choice of dates and times. She makes a selection, receives a confirmation, and is prompted to supply information on her medical history from all providers, regardless of where they are located. She also gives permission for the specialist to review information contained in medical records at different locations. She can withhold access to certain health information.

She arrives for her first visit to the physician, who already has a preliminary health record that details her Medicaid program eligibility, the benefits covered, and relevant information from other physicians or facilities where she has received treatment previously (whether under Medicaid or not). The physician asks her to verify the information in the record.



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The woman updates her personal health record (PHR) daily during her pregnancy (e.g., weight, diet, exercise, and compliance with medications), as recommended by the physician. The physician can review her PHR and prompt her to improve compliance or schedule an appointment.

After the woman delivers, the facility starts a health record for the baby that includes all vital signs and the baby's genome. A PHR is created at that point for the baby, which the parent or guardian maintains. The baby's test results and immunizations are entered into the health record immediately, and the data is screened for signs of special needs. If the screening indicates the baby needs special care, a message is sent to one or more special Medicaid programs. More information may be needed from the mother before the baby can be enrolled.



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The baby is now enrolled in a special program or assigned to a primary care physician. At each visit, new information is added to the baby's health record, including links to pharmacy prescriptions, lab results, and immunizations. If the baby is referred to a specialist, the specialist can view the baby's history through virtual access to the health information, regardless where in the U.S. it is stored.



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As the hospital, physicians, laboratories, and pharmacies continue to treat the mother and the baby, they add new diagnostic, service, and referral information to their health records. Each new service entry triggers a message requesting payment, and administrative information in the health records directs the message to the primary payer. RHIO registries coordinate benefits and direct payment requests to appropriate secondary and final payers. Providers receive instant notification that the service is payable.

Key information stored in health records triggers reports to external parties, such as public health for biosurveillance, the Department of Homeland Security (DHS) for certain reportable diagnoses, the statewide immunization registry, and any research groups that might be conducting special studies. Automated reporting saves providers from multiple reporting of information.

The RHIO or another hub structure sends and receives messages from all stakeholders. RHIOs maintain semantic operability with all other hubs across the country to manage information exchange among authenticated entities.

In the future, Medicaid agencies and other payers' roles change from those of performing operations that require a large administrative staff (e.g., to manage paper flow, telephone, fax, EDI, and Web-based transmissions; make decisions; and respond to inquiries) to those of executive management and professional teams (e.g., to analyze program trends, needs, and gaps; plan strategically; monitor program objectives and health outcomes; make performance based payments; and participate in the nation's healthcare goals).

Figure 2-3 shows the flow of communications that supports the future vision.

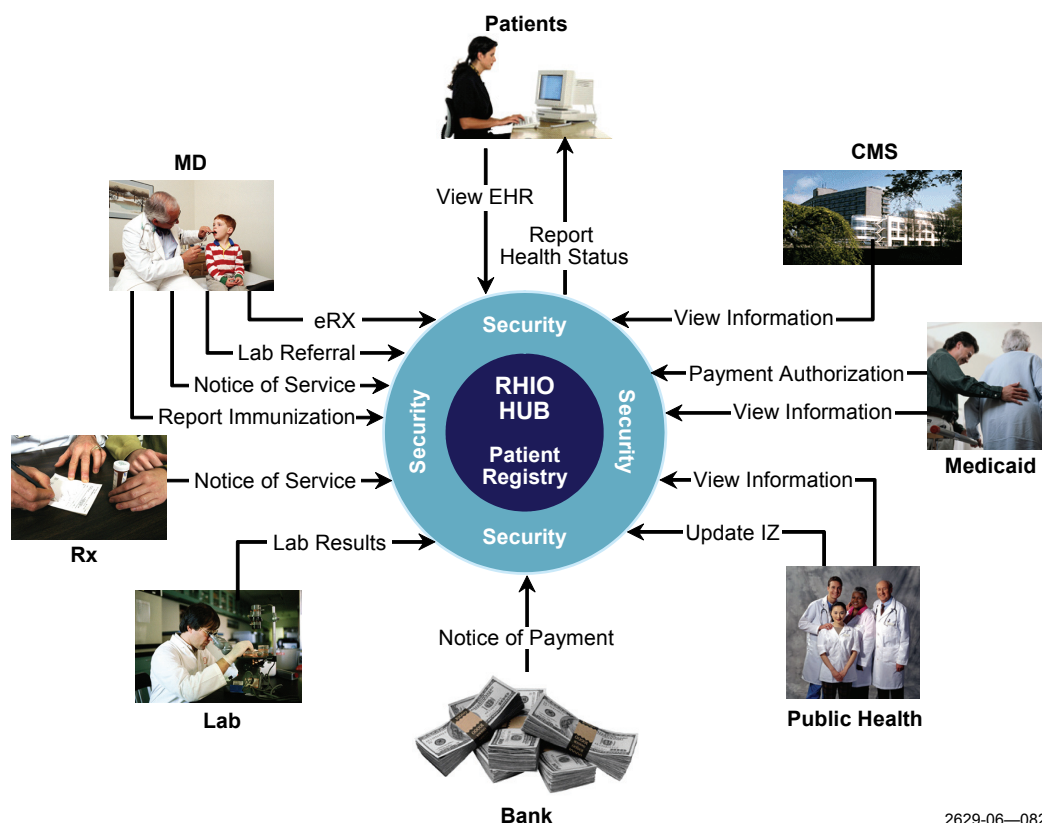


Figure 2-3. Medicaid Communications of the Future Will Flow Through a Hub

Medicaid Mission and Goals

The first step in the development of the COO is to frame the vision, as shown in **Figure 2-4**. The MITA team distilled these statements from the visioning sessions and interviews described in the Introduction section to this chapter.

These high-level statements provide the foundation for all components of the MITA Framework 2.0. The Business, Information, and Technical Architectures are traceable to this initial framing of the improvements and transformation of the Medicaid enterprise. The MITA Framework is a series of extensions of the original framework, each supplying more detail.

Medicaid Mission	To provide quality healthcare to beneficiaries by providing access to the right services for the right people at the right time for the right cost
Medicaid Goals	To improve healthcare outcomes for Medicaid beneficiaries To ensure efficient, effective, and economical management of the Medicaid program

Figure 2-4. Medicaid Mission and Goals Are Derived from Interviews with State Medicaid Officials and Other Sources

The COO establishes an initial time frame of current operations (present plus the next 2 years). It also projects To-Be operations in the near term (approximately 5 years) and the long term (10+ years). **Table 2-2** illustrates how the Medicaid mission — to provide quality healthcare to beneficiaries by providing access to the right services for the right people at the right time for the right cost — is demonstrated in the As-Is time frame, at a 5-year midpoint, and at 10+ years from now.

Table 2-2. The Medicaid Mission Realized Now and in the Future

Medicaid Mission: Provide Quality Healthcare to Beneficiaries by Providing Access to the Right Services for the Right People at the Right Time for the Right Cost		
As-Is	5 Years	Long Term
Agency complies with State regulations to maintain an adequate provider network and pay claims promptly to encourage provider participation and ensure access to care. Many steps require manual intervention. Data content is nonstandard. Appropriateness of care is assessed retrospectively.	Agency coordinates with other payers to offer one-stop shop entry points to applicants for service and provider enrollment, provider reimbursement, and coordination of benefits. Patients make personal healthcare decisions. Agency accommodates cultural, linguistic, and health needs. Agency uses national standards for data content and exchange. Coordination and collaboration across healthcare programs intrastate contributes to improved outcomes.	Agency can directly access clinical and administrative records nationally through a network of RHIOs and other interoperable hubs. Agency makes informed, automated decisions regarding most enrollment and payment interactions. Agency can assess appropriateness of care at point of service. Agency can access necessary data to compare services and outcomes across a broad spectrum of agencies and States. Access to and use of clinical data increases the efficiency and effectiveness of decision making.

MITA Mission, Goals, and Objectives

MITA, a primary enabler of the Medicaid mission, has created its own mission, goals, and objectives, as shown in **Figure 2-5**. The way MITA achieves those goals today and the way it can support Medicaid 5 years from now and in the long term are shown in **Table 2-3**.

MITA Mission	To establish a national framework of enabling technologies and processes that support improved program administration for the Medicaid enterprise
MITA Goals and Objectives	To promote integration, interoperability, and coordination with public health and other partners to improve overall health, data supporting analysis, and decision making

*Figure 2-5. MITA Has a Mission, Goals, and Objectives**Table 2-3. Examples of MITA Goals¹ in As-Is, 5-Year, and Long-Term Scenarios*

Develop seamless and integrated systems that effectively communicate to achieve common Medicaid goals through interoperability and common standards.		
As-Is	5 Years	Long Term
The original model of six-plus integrated subsystems representing the MMIS persists. The system dictates data standards. Data exchanges are specified as point to point (i.e., not interoperable).	Agencies share some business processes and adopt national standards. Statewide or regional data exchanges facilitate communications. Intrastate agencies coordinate and collaborate on common benefit plans and business services (e.g., Enroll Member).	Agencies seamlessly integrate clinical and administrative information. This signifies a paradigm shift, as providers, beneficiaries, and payers gain access to clinical information for instant decision making. The agency accesses the National Health Information Infrastructure (NHII). Medicaid goals merge with national healthcare goals and those of public health, public safety, and antibioterrorism.
Provide data that is timely, accurate, usable, and easily accessible to support analysis and decision making for healthcare management and program administration.		
As-Is	5 Years	Long Term
The source of data is primarily the claim. Data is accessible via a request/response process that meets current regulations, but management experiences delays and inconsistencies in acquiring data. Data is nonstandard and used primarily to manage operations.	Data standards are adopted nationally. Shared repositories of data improve efficiency of access, which improves data accuracy, accessibility, and program administration.	Virtual access to standardized clinical data across States through a network of regional data exchange hubs greatly enhances the decision-making process. Clinical evidence makes decisions consistent and well grounded.

¹ See Part I, Appendix A, Concept of Operations Details, for a complete list of MITA goals and objectives.

Transformation from the As-Is to the To-Be

The Medicaid mission and MITA goals provide the platform for predicting a transformation as called for in the COO. Different examples of the transformation are shown in **Table 2-4**.

Table 2-4. Examples of Transformation from As-Is to To-Be

As-Is	To-Be
Providers and Beneficiaries Interact with the Medicaid Program	
Currently, applicants for public services must often go to several different offices and file several applications to receive benefits from programs and providers that have no formal means of communication — as a result, services may overlap; treatments may be contraindicated; time is wasted; opportunities for health improvements may be missed; providers do not know what other services the patient is receiving; and the money for payment “follows the program, not the beneficiary,” which requires beneficiaries to chase programs. States have difficulty accounting for quality of health services or payment accuracy.	In the future, an individual or agent/caregiver can access any public or community service agency (i.e., through centralized state resource centers in person, by telephone, online, or through a consumer portal) and receive standardized prompts to information on available benefits and next steps. Information provided by the individual or provider can initiate applications for appropriate benefits. The program establishes an optimal benefit hierarchy for the beneficiary; eliminates language, cultural, and geographic barriers; and accommodates functional challenges. Funding follows the beneficiary.
Clinical Information Is Required to Complete the Business Process	
Currently, clinical information on a patient’s treatment history and outcomes arrives in a paper format to support service authorizations, payment of claims, and review or audit of the services rendered. The information is nonstandard and the process is labor intensive, inconsistent, and slow. Administrative, financial, and public health reporting derive from clinical data collected at the provider site and reported (redundantly) to secondary users (e.g., public health, DHS, immunization registry), which diminishes data quality and timeliness.	<p>In the future, standardized and protected clinical information is immediately accessible to the patient and other authorized parties from the point of service, including for clinical decisions. There is a virtual complete record of every beneficiary, including all health plan records, clinical protocols, and business rules pertaining to service coverage.</p> <p>All relevant clinical, administrative, financial, and public health information can be generated from the point of care and shared with providers and payers, which reduces provider reporting burdens and improves patient safety.</p> <p>Immediate access to clinical data improves health outcomes by reducing administrative burdens for providers, payers, and patients, and it allows providers to focus on treatment and patients to participate in the process.</p> <p>Improvements radiate throughout Medicaid operations. For example, prior authorization occurs automatically as the provider enters the treatment plan information into the medical record and Medicaid is notified of this plan. Business rules are applied and the provider is alerted regarding the status of the service. Medicaid operations need to review only exceptional prior-authorization cases. Operations staff can focus on performance measures and outcome analysis.</p>

As-Is	To-Be
Collaboration Improves Public Health Outcomes	
Currently, Medicaid, public health, and other agencies communicate ad hoc, with little or no interoperability. Providers and payers report service information for multiple purposes (e.g., payment, encounter reporting, disease reporting, Medicaid Statistical Information System [MSIS] reports) and therefore redundantly.	<p>In the future, Medicaid, public health, and other agencies collaborate formally on the reporting of infectious disease, bioterrorism threats, immunizations, and other healthcare events. Information collected at the point of service and stored in a medical record automatically notifies payers, registries, alert systems, and reporting systems that new service information is available.</p> <p>Collaboration improves health outcomes, promotes public safety, and increases operational efficiency. Operations staff members no longer chase information and complete redundant reports, but instead focus on assessing information that is readily available and collaborate with other agencies to understand health trends and develop strategic and tactical responses.</p>

How Are Stakeholder Roles Transformed?

This section illustrates how the transformation of the Medicaid program affects stakeholders (e.g., beneficiaries, providers, the State Medicaid agency, other State and local agencies, Federal agencies, other payers, legislators, and the general public). **Table 2-5** summarizes the roles of stakeholders over the next 10+ years.

Currently, Medicaid agencies interact with stakeholders through both traditional and new channels, including EDI and Web portals. These are point-to-point transactions that differ from State to State. Stakeholders in these transactions typically maintain a passive relationship with Medicaid — applicants wait to be enrolled and providers wait to be paid.

In the future, however, stakeholders become more active participants. Beneficiaries, for example, are able to make more healthcare choices and maintain personal electronic records that follow them. Providers communicate directly with other providers to initiate referrals and receive outcome information. Other agencies and payers become true Medicaid partners in a collaborative environment in which they share information.

Table 2-5. Transformation of Stakeholder Roles

Roles of Stakeholders — As-Is, 5-Year, and Long-Term		
As-Is	5 Years	Long Term
Beneficiaries. Individuals eligible for public benefits apply in person at multiple locations, complete paper applications, and present documents to verify residence, citizenship, age, and bank account information.	Individuals eligible for public benefits access public service information via a “no-wrong-door” consumer portal and select benefits from a multiagency menu. Agencies collaborate to meet beneficiary needs, and “the money follows the beneficiary.”	Beneficiaries access personal health information, select providers, make treatment decisions, rate provider performance, and track their health outcomes with the aid of a local RHIO that is interoperable nationally with all other State health records.
Providers. Providers submit enrollment applications by mail or on the Web. Agencies validate data manually, maintain a different ID and taxonomy for each payer, and pay only limited attention to cultural and linguistic competence. Atypical providers are stovepiped in different enrollment mechanisms	Providers submit applications through a central clearinghouse that requests National Provider Identifier (NPI) assignment and automatically validates data. Results are quickly communicated to the provider and payers. NPI and provider taxonomy are standardized (including atypical providers through a collaborative CMS/State effort), which improves comparisons. Providers are associated with cultural, linguistic, and clinical competency indicators.	Providers’ credentials are validated nationally through records accessible automatically through the application validation process. Federated provider registries across the country ensure that all providers can be properly and uniquely identified.
Providers submit claims by mail, EDI, or Web portals. Claims processing is streamlined and meets deadlines for producing checks.	Multiple agency collaboration improves efficiency for the provider and payer through a payment and coordination-of-benefits hub.	Providers update medical records and thereby send a message automatically to the payer, who validates the service and authorizes payment.
State Medicaid Agency. Agency employs large staff and/or outsources administrative services to manage beneficiary enrollment and receipt of care, provider enrollment and payment, and program management. Many procedures are manual.	Agency automates many manual procedures and shifts focus to program analysis, monitoring, managing special populations and disease groups, and decision making.	Agency has automated almost all operational processes and requires minimal human intervention (i.e., for exceptions). Clinical data improves accuracy of information and supports decisions. Agency’s focus is on strategic planning and performance monitoring.
Centers for Medicare and Medicaid Services. CMS staff and regional office staff oversee State adherence to Medicaid program compliance for service delivery, operation of the MMIS and administrative services, and Federal financial participation (FFP). CMS’s role is reactive, focusing on compliance.	CMS collaborates with States to implement MITA and promote interagency collaboration within States; State alignments with national mandates and initiatives, such as the FHA, DHHS, and ONC; and adoption of national standards for data content and exchange. CMS expands focus to include program analysis. CMS’s role becomes proactive — to establish the vision and new floor for improvements in care and efficiency.	CMS and States become partners in the rollout of RHIOs across the country. CMS benefits as a data exchange partner with direct, virtual access to State Medicaid data. Direct access channels replace reporting requirements (e.g., MSIS). CMS and States join with other entities nationally to establish governance of U.S. healthcare delivery.

Roles of Stakeholders — As-Is, 5-Year, and Long-Term		
As-Is	5 Years	Long Term
Regional Health Information Organization. RHIO is a pilot sponsored through ONC and grassroots organizations such as the Indiana Network for Patient Care (INPC). Clearinghouses, switches, value-added networks, and State implementations of translator middleware perform some hub functions now.	RHIO is a new stakeholder that serves as a conduit for information exchange between participating providers and agencies. RHIOs represent the interests of providers, payers, and consumers and are expected to grow in importance over the next 5 years.	Interoperable RHIOs that consent to standardized data content and communication protocols constitute the National Health Information Network (NHIN), which allows queries and information exchange across the country for authenticated subscribers.
Other Payers. Other payers of medical costs for Medicaid beneficiaries include Medicare, Workers' Compensation, and major local insurers. Third-party recovery can be slow and cumbersome.	Other payers join with Medicaid agencies in data exchange through RHIO hubs. Agencies can assess coordination of benefits (COB) automatically by using data standards and collaboration, and by applying business rules managed by the RHIOs.	Other payers are coordinated (as part of COB) nationally at the point of service. A provider's update to an electronic health record triggers a message filtered through a local RHIO, where business rules are applied to coordinate the payment of the benefit.
Other Agencies. Federal, State, and local agencies exchange information with Medicaid using different media, connectivity, format, and data content. Data exchange is nonstandard and can be redundant.	Other agencies join with Medicaid agencies to adopt standards and coordinate common business processes.	Other agencies, like payers, join with Medicaid agencies through NHIN for the common purpose of coordinating operations nationally.
General Public, Legislators, Regulators, and others. Other stakeholders can request and receive information from State Medicaid agencies.	Other stakeholders can access information directly through RHIOs, subject to access restrictions and authentication.	Other stakeholders can access information directly through RHIOs nationally through NHIN, subject to access restrictions and authentication. Information includes health outcomes and provider performance.

How Are Information and Communications Transformed?

Table 2-6 summarizes the changes and improvements in information exchanges and data content among stakeholders within the Medicaid enterprise. The major changes are that data is standardized for exchange purposes (or at least participants are able to “read” the same data, even if it is translated); providers and beneficiaries use information to improve treatment and outcomes; data used for routine operations is replaced by machine-to-machine “conversations”; and information is transformed into a knowledge base that lets the Medicaid agency focus on strategic planning, improving performance and outcomes, and collaborating nationally to improve health and safety.

In the As-Is environment, data is used primarily to support Medicaid operations. The claim is the primary source of that data. Data content is standardized only internally and in transactions that comply with HIPAA, and Medicaid agencies have no external interoperability. Information retrieval can be time consuming and expensive.

Table 2-6. Data and Communications Are Transformed over Time

Data Content and Interchanges — As-Is, 5-Year, and Long-Term Scenarios		
As-Is	5 Years	Long Term
<p>General characteristics of As-Is data content and exchanges:</p> <ul style="list-style-type: none"> ■ Transaction-based ■ Electronic (under HIPAA rules) ■ Mapping to internal systems and between standards (which degrades data integrity) ■ Widespread use of mail, fax, telephone, and automated voice response (AVR) ■ Clinical data supplied on paper on request ■ Limited consumer access to any information, which hinders the explanation of benefits (EOB) and responses to requests ■ Slow and inefficient data collection, evaluation, and analysis process (and data is often not comparable because it comes from different systems with incompatible record formats and content) ■ Burdensome reporting because information is duplicative, semiautomated, and error prone ■ Data content is based primarily on claims, encounters, provider enrollment data, and beneficiary enrollment data 	<p>General improvements of data content and exchange after 5 years:</p> <ul style="list-style-type: none"> ■ Transactions replaced by standardized messages governed by service agreements between data exchange parties ■ Data exchange standards applicable to all data exchange parties ■ Manual exchange of information obsolete and exceptional ■ Subsets of clinical data become available (e.g., claim attachment) ■ Beneficiary access to some health information online ■ Improved decision maker access to meaningful and reliable data ■ Virtual information access independent of mega data warehouses 	<p>Possibilities for data content and exchange in the long term:</p> <ul style="list-style-type: none"> ■ Transactions replaced by messages brokered through RHIOs and later by “sessions” of “peer-to-peer” communications directly between the parties who share the information (i.e., “system-to-system” and provider-to-payer) ■ NHIN links to RHIOs across the country to provide national interoperability ■ Data exchange standards applicable to all data exchange parties ■ Manual exchange of information obsolete and exceptional ■ Clinical data readily available to authorized users ■ Beneficiary access to personal health information, treatment plans, and preventive health guidelines ■ Decrease of redundant reporting (and collection of redundant data); where necessary, shared metadata that enables alignment of disparate formats and data content ■ Key health data available instantly to authorized users through dynamic information sharing ■ Data exchanges semantically interoperable

Data Content and Interchanges — As-Is, 5-Year, and Long-Term Scenarios		
As-Is	5 Years	Long Term
Beneficiary and Population Data		
Data collected primarily from the eligibility determination process, subsequent enrollment in special programs, claims, returned explanations of Medicare benefits (EOMBs), and communications from the beneficiary. Cultural and linguistic indicators are not standardized.	Standardized data collected from “one-stop shop” eligibility and enrollment functions, augmented by beneficiaries, who can make provider and treatment choices. New information includes consumer satisfaction, outcome measures, and provider performance rating. Cultural, linguistic, and diagnostic indicators help deliver the right care.	Clinical data supplements demographic data on the beneficiary. Population health and safety information is a national focus. Medicaid agency answers questions about trends and changes in demographics, improvements in healthcare indicators and outcomes, and client satisfaction. Focus is on meeting needs and determining future needs.
Provider and Contractor Data		
Data collected primarily from enrollment applications and claims, Surveillance and Utilization Review (SUR) profiles, error reports, and other interactions with the provider.	NPI and taxonomy is in use nationally. A collaborative effort of CMS and States results in NPI and taxonomy codes for atypical providers. Local programs share information on provider enrollment and demographics. Payment and COB data are collected and compared across multiple agencies.	Access to clinical data greatly improves information and provider performance. Provider information is available nationally to authenticated and authorized requesters. Medicaid agencies answer questions about demographics and distribution of the provider population, and research changes in levels of participation by various specialties. Provider payment is based on performance.
Health Benefit (Plan) Data		
Information on covered benefits, restrictions, and fees stored for use in payment processing and reporting.	Health benefit information is shared with all agencies. Consumers and providers have “one-stop shop” to view benefit plans. Service data is dynamically updated from standard-making organizations.	Nationally linked RHIOs share information on benefit packages with all interested parties, who can compare benefit plans across the country.
Healthcare Service Data		
Data collected primarily from claims.	Clinical information from claims attachments available. Comparison of service profiles, provider performance, and outcomes improves locally. Fraud detection improves.	Service data communicated to the payer dynamically from the provider electronic health record. Clinical data supplements administrative data. Medicaid agencies understand how benefits are being used, what the outcomes associated with services are, and where improvements are needed. Agencies can predict utilization and measure changes.

Data Content and Interchanges — As-Is, 5-Year, and Long-Term Scenarios		
As-Is	5 Years	Long Term
Financial Data		
Data collected from claims and remittance advices.	Collaboration between programs and payers improves COB. Virtually all payment is automated. National standards apply.	Flow of payment and remittance information moves from payer system to payee bank. Agency knows how its funds are being used and what changes are occurring.
Strategic and Performance Information		
Special reports and labor-intensive surveys required.	Coordination, adoption, and use of national standards improve information used for strategic planning.	Agency can access relevant data anywhere in the U.S. for strategic planning and performance evaluation.
Interoperability and Data Sharing		
Blend of standard and nonstandard data.	Intrastate collaboration and adoption and use of national standards improve data sharing.	Semantic interoperability becomes a national standard. Any authorized requester can view information anywhere in the U.S., in accordance with service agreements.

In the To-Be scenario, semantic interoperability facilitates data sharing on a national scale. Requesters can view data integrated from many sources while the data remains “at home.” Clinical data supplements administrative data. The primary use for data is in strategic planning. Operations “run themselves,” as provider systems communicate directly with payer systems and payer systems communicate with other payers and agencies.

What Are the Primary Enablers of the Transformation?

This section discusses technical, legislative, and policy enablers and other drivers that facilitate the transformation of the Medicaid enterprise and support the vision of the future.

Legislative, Funding, Federal Initiative, and Demographic Drivers

States respond to many enablers and drivers that help or cause the Medicaid program change. Some enablers come from DHHS strategic plans and directives. Others come from State political and consumer pressures. Still others come from external sources, such as Federal initiatives and legislation, rises or falls in revenue, demographic shifts, medical breakthroughs, and pandemic threats. Enablers considered in the MITA Framework include the following:

- Legislation, such as “no wrong door” or the New Freedom initiative, and presidential initiatives, such as the President’s Information Technology Advisory Committee (PITAC) (HIPAA continues to exert its influence over standards)
- Increasing use of waiver programs, which puts pressure on Medicaid agencies to collaborate on benefit design and processing and standardize data

- Revenue limitations for public agencies, which increase the need to find administrative efficiencies, shift money to pay for benefits, and get better results for the money spent
- Federal and national initiatives, such as the Consolidated Health Initiative (CHI), FEA, FHA, and ONC (which establish frameworks for the architecture of the future)
- Demographic shifts (e.g., aging populations, new immigrants), which continue to bring new pressures on the healthcare delivery system
- Pandemic threats (e.g., bird flu, bioterrorism, and natural disasters), which demand new ways to capture and access critical clinical data

Collectively, these enablers and drivers influence the progressive transformation of the Medicaid program.

Technology Drivers

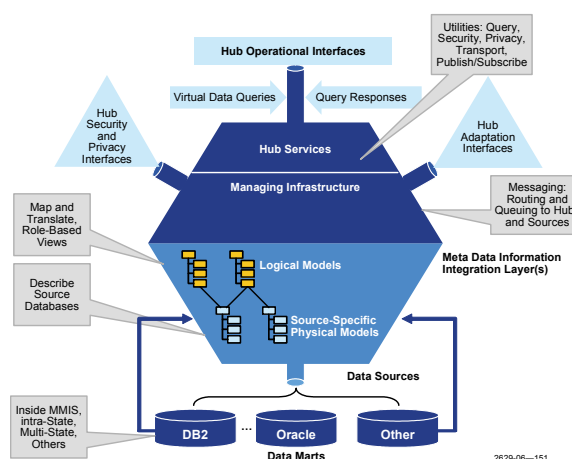
Another significant category of enablers is technology, which is producing breakthrough advances across all industries, including healthcare. Two technologies that are expected to greatly affect healthcare management in the future are communication hubs and the electronic health record.

Reference to specific technical enablers does not mean that CMS recommends them or that MITA requires them. They are examples that appear viable today. However, new inventions may replace them. MITA is always a work in progress.

Communication Hub

A hub is a communications center that subscribers use to send and receive messages or connect to others' data. A RHIO is an entity that operates a hub.

- Hubs provide common services needed by all subscriber systems.
- Hubs let systems share data without having to move it to a central location.
- Hubs, like telephone companies, use centralized capabilities that allow multiple systems to “talk to one another” without having to coordinate with each other separately.
- An MMIS can have multiple hubs that can communicate with hubs external to the Medicaid enterprise.



Other terms for technologies that hubs use are *integration engines*, *middleware*, *registries*, and *translators*.

As-Is Data-Sharing Capabilities

Current system design impedes data sharing, performance and outcome measures, and program innovation (e.g., because systems require new relationships with data owners each time a program needs a new source of data). Staff coordinates data exchanges manually by contacting staff of other systems to negotiate formats and record layouts, data dictionaries, volumes, and scheduling. Loading data from other systems into a centralized data warehouse requires production downtime, which decreases productivity. Most internal data interchange requires point-to-point custom interfaces and redundant capabilities (e.g., security controls and event processing) to handle each interchange. Data sharing among components requires either point-to-point interfaces or collecting and storing copies of various components' data in a data warehouse. Custom interfaces make adding components from various vendors difficult.

To-Be Data-Sharing Capabilities

In the future, States share data with ease, both internally and externally (including from multiple sources), which promotes program innovation and allows States to reallocate staff and resources to enterprise-critical activities. Utility services eliminate redundant interchange handling. Standardized interfaces connect applications and facilitate the addition of new components (i.e., from any vendor whose products conform to standards) with less risk, cost, and implementation time. Applications can access data of record at run time, which reduces the need for centralized data warehousing.

Electronic Health Record System

According to the Institute of Medicine (IOM) *Key Capabilities of an Electronic Health Record System* 2003, an Electronic Health Record System (EHRS) supports:

- Longitudinal collection of electronic health information for and about persons — defining health information as information that pertains to the health of an individual or to healthcare provided to an individual
- Immediate electronic access to person-level and population-level information by authorized users
- Provision of knowledge and decision support that enhances the quality, safety, and efficiency of patient care
- Support of efficient processes for healthcare delivery



Connectivity between EHRS and providers and patients at different locations is the subject of the ONC pilot studies conducted in 2006. Time will tell if the EHR or some other approach to storing and accessing clinical information will emerge as the national standard.

As-Is Clinical Information Capabilities

In the current environment, States have only limited ability to access or use clinical data (and, as a result, base health outcome analyses on eligibility, claims, and public health data) and perform elaborate, time consuming, and costly statistical analyses. States cannot expeditiously gauge effectiveness of clinical protocols or determine health impacts of benefit design or coverage criteria changes.

States conduct health outcome studies and performance measures using manually reviewed health records. This approach requires expensive and time-consuming medical record collections and complex statistical analyses, which often do not yield quality data.

Providers must delay clinical decisions and conduct burdensome administrative tasks while waiting for coverage determinations. Manual service reviews can impede beneficiaries' access to urgently needed care. Public health does not have access to critical prediagnostic and diagnostic data for biosurveillance.

To-Be Clinical Information Capabilities

The Medicaid agency, providers, and beneficiaries have immediate access to clinical data for which they have authorization. Authorized parties can use clinical information to manage treatment plans, assess outcomes, and determine healthcare delivery strategies. Stakeholders focus on their primary functions of caregiving and monitoring.

States can access the electronic health records of beneficiaries using automated processes that derive and aggregate clinical data in accordance with study parameters.

Provider and Medicaid operations are streamlined because clinical information is available immediately and many decisions can be automated.

Part I Appendix A, COO Details, contains more examples of enablers. Industry will create more enablers not envisioned at this time, and some enablers earlier thought likely may not materialize. For example, the electronic health record, currently seen as the primary vehicle for communication of clinic data, may give way in the future to some other means of accessing and blending administrative and clinical data.

How Do Medicaid Agency Operations Evolve?

The COO describes the vision for the MITA Framework. The final component in the COO compares the As-Is Medicaid operations with the projected To-Be operations. See Appendix A, COO Details, for more information on the As-Is and To-Be perspectives.

As-Is Operations

The As-Is COO shown in **Figure 2-6** describes the Medicaid operations of many States today. Several separate units of staff perform many activities to support the Medicaid enterprise. Many such operations are still manual or are automated in stovepiped structures. Stakeholders interact with many of these business operations.

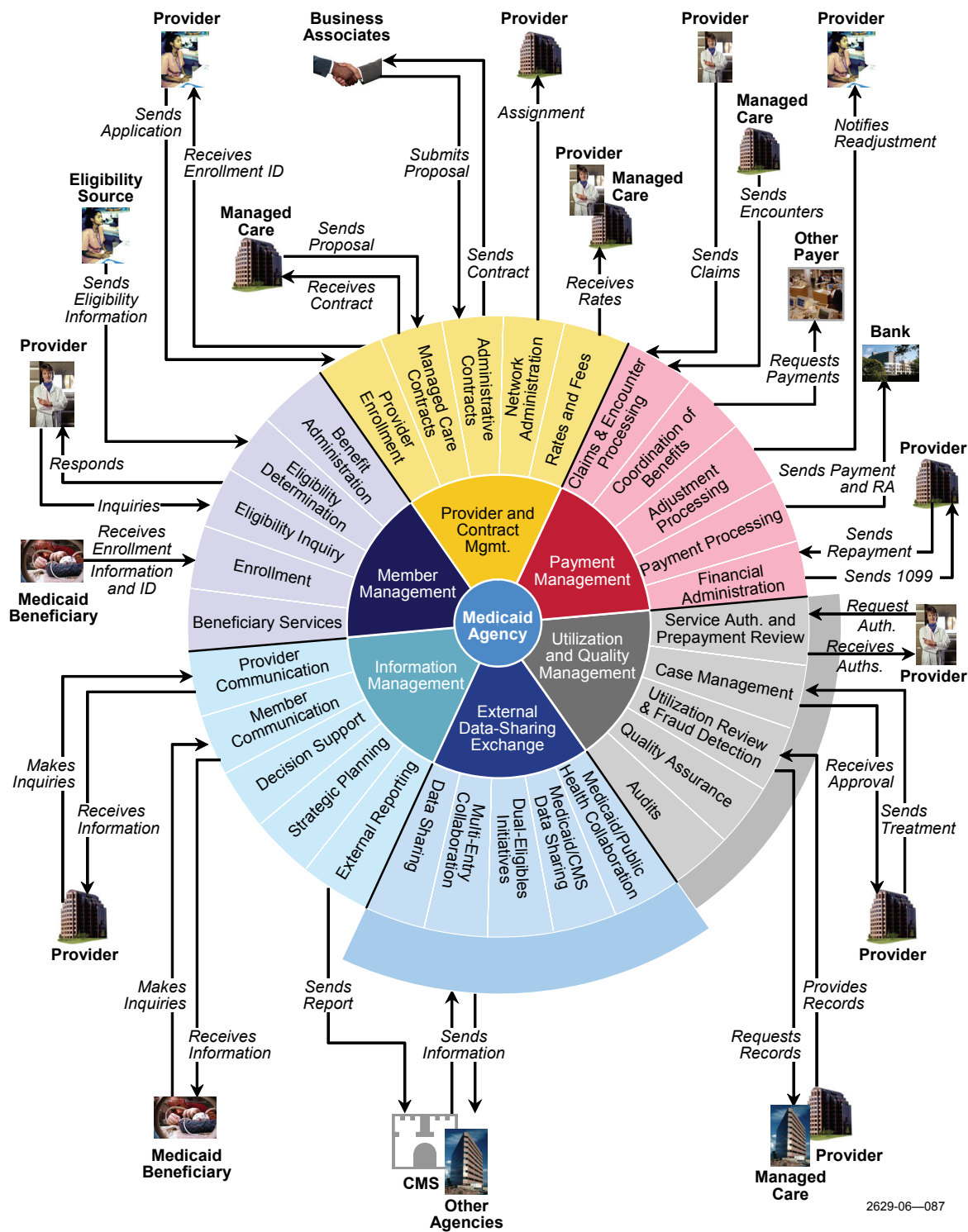


Figure 2-6. The COO Gives an As-Is Look at the Present

As-Is operations consist of hundreds of individual business processes, each requiring a unit of staff to complete the process. In all States, the actual adjudication of the claim is a highly automated process. Furthermore, in many States, receipt and response to standard transactions (e.g., eligibility inquiry, receipt of a claim, or response to prior authorization request) are automated via EDI and Web-based exchange of information. Web portals are used in many States for provider enrollment and beneficiary applicant inquiries. However, despite widespread automation, the Medicaid agency spends the bulk of its time and energy on administrative operations, which means that less time and resources are available for tactical and strategic decision making, as shown in **Figure 2-7**.



Figure 2-7. Most Medicaid Resources and Energies Now Go to Operational Functions

To-Be Operations

The vision of To-Be operations essentially turns the As-Is model upside down: Strategic functions (on top) dominate and subordinate basic operations (at bottom). In this vision of Medicaid operations, a control center of executive staff members monitor indicators from various dashboards that track enrollment of providers and beneficiaries, the delivery of services to the covered population, and the outcomes, trends, and changing needs of the enterprise. The Medicaid agency establishes or uses RHIOs, which serve as conduits for information exchange with participants in the local or regional healthcare delivery system.

External entities (e.g., other payers and agencies across the country) can also participate, through agreements and payments of usage fees, under a utility model that leverages the FFP and covers the non-Medicaid incremental costs of development and maintenance. In certain states or regions, information regarding an individual's health status and services received is stored in individual provider locations but may be viewed as needed and according to data sharing agreements with any appropriate entity, including the patient, guardian, caregiver, referral service, supplier, payer, or quality-assurance organization.

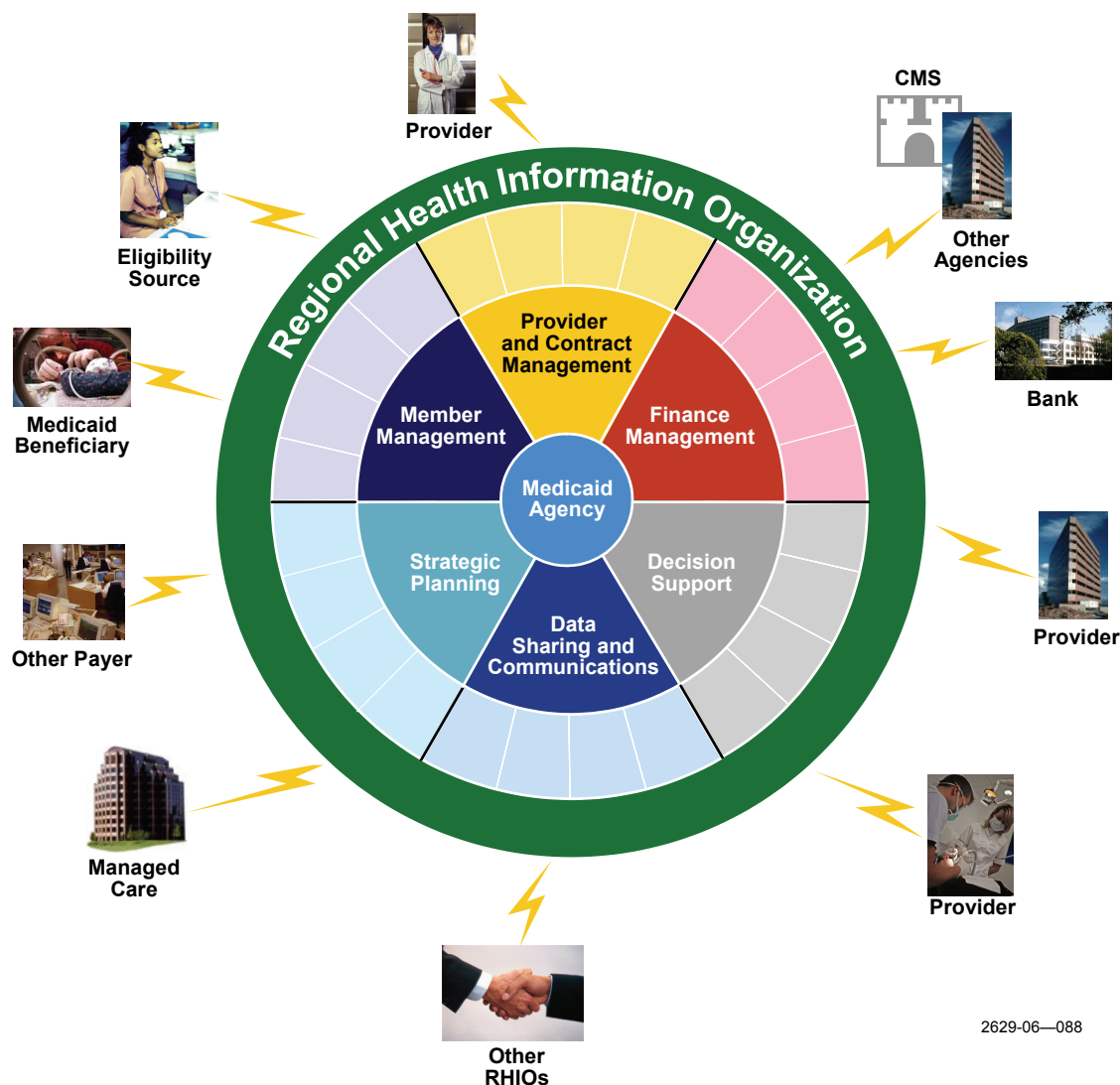
A key component of the RHIO hub is one or more directories (also known as *registries*) with Web pointers (i.e., URI) to the Internet addresses where patient and provider information is located.²

The Medicaid program can summarize information accessed through the hub and make it available to external entities such as CMS. The hub responds to specified trigger information to send notifications of disease or bioterrorism to appropriate local or national agencies, as prescribed by local public health jurisdictions, DHS, and national health initiatives (e.g., for management of a pandemic). In turn, public health agencies can use the hub to issue alerts to payers and providers regarding public health and national safety issues that might affect the populations they serve.

In this future vision, the primary stakeholders are able to concentrate on their core competencies and are freed from the current burden of recording, storing, and sending redundant data. Providers focus on diagnosing, treating, and preventing illness (instead of spending time seeking approval for treatments and payments for services). Payers such as Medicaid can concentrate on analyses of trends, policy making, quality assurance, and strategic planning (instead of paying claims and premiums and pursuing fraud and third-party liability), and beneficiaries can participate proactively in healthcare treatment decisions (instead of playing a passive role, as they do currently).

² <http://aspe.hhs.gov/sp/nhii/> for the NHII Report and other links.

Figure 2-8 shows the new order of business.



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Figure 2-8. The COO Describes a To-Be Scenario for the Future

Figure 2-8 presents a view of the future in which the bulk of the operational tasks found in all State Medicaid agencies today is reduced to a bare minimum and only a small strategic and executive team is needed to manage the Medicaid program. The workforce that today is needed to process transactions is no longer necessary. Machines talk to machines and execute the business rules agreed to by the stakeholders. The agency is transformed from clusters of busy operational staff to a think tank that focuses on research, planning, outreach, and communications. This concept is represented by the simplicity of Figure 2-8 in contrast to the complexity of Figure 2-6. It also reflects the contrast in priorities and resources between Figure 2-7 and **Figure 2-9**, in which strategic functions dominate in the To-Be model.



Figure 2-9. Strategic Functions Dominate in the To-Be Model

How Does the Transformation Occur?

State Medicaid agencies and CMS have provided an image of the future for the COO. To realize this image, the MITA team has described a transformation in stakeholder roles and information exchange and identified significant enablers necessary to propel the change.

MITA is a collaborative effort. States, CMS, and the vendor community need to join together to define and refine business processes, information, business capabilities, and technical capabilities to streamline operations, reduce administrative burdens, and ease access to virtual data anywhere, with a focus on strategic Medicaid planning. MITA Framework 2.0, taken as a whole, represents the first step toward the future. Readers are encouraged to continue through Part I and those parts of chapters of Parts II and III that are of interest.

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