



**SUPPORT FOR
ACCOUNTABLE CARE:**

**RECOMMENDED HEALTH
IT INFRASTRUCTURE**



eHEALTH INITIATIVE

Real Solutions. Better Health.

About eHealth Initiative

eHealth Initiative (eHI) is a Washington D.C.-based, independent, non-profit organization whose mission is to drive improvements in the quality, safety, and efficiency of healthcare through information and information technology. eHI is the only national organization that represents all of the stakeholders in the healthcare industry. Working with its membership, eHI advocates for the use of health IT that is practical, sustainable and addresses stakeholder needs, particularly those of patients.

Accountable Care Council

The Accountable Care Council (Council) is a multi-stakeholder group, representative of eHI members. The focus of the Council is on assessing the necessary health information technology (Health IT) infrastructure required to support Accountable Care Organizational Models (ACOM), in an effort to improve the quality, safety, and efficiency of healthcare.

Purpose

This report aims to inform the field of accountable care by identifying trends and supporting the development of a robust health information technology infrastructure that supports the needs of an Accountable Care Organizational Model.

Formation of the Document

This document was developed through a multi-stakeholder, consensus-driven process. The Council met over eight months and discussed different themes regarding the requirements of the health IT infrastructure needed for ACOMs. A survey of both private and CMS-supported ACOMs also informed development of the recommendations. The survey was conducted over a two-month period. Overall, 20 organizations representative of a variety of patient populations and geographical locations responded to the survey. The survey was structured as a combination of multiple choice and open-ended questions that focused on the organization's purpose for becoming an ACOM, current or potential involvement in the Medicare Shared Savings Program, the CMS Innovation Center Pioneer Pilot, health IT infrastructure, and implementation goals.

Intended Audiences

This document is intended to inform a diverse group of stakeholders who are improving healthcare through the use of health information technology and are implementing, or considering the development of, an ACOM to improve healthcare. This includes, but is not limited to: clinicians, consumer and patient groups, employers and healthcare purchasers, health plans, health information technology suppliers, hospitals, laboratories, pharmaceutical and medical device manufacturers, pharmacies, public health agencies, quality improvement organizations, standards development organizations, and state, regional and community-based organizations.

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Executive Summary

The term “accountable care organization” was first coined in an exchange between Dr. Elliott Fisher and Glenn Hackbarth - individuals who are credited as the forefathers of this organizational model - in November, 2006, during a Medicare Payment Advisory Commission (MedPAC) meeting.¹ Since then, the concept has received considerable attention in the literature and culminating in the Center for Medicare and Medicaid Services (CMS) Medicare Shared Savings Programs (MSSP) Accountable Care Organization rule. The Accountable Care Organizational Model (ACOM) takes a systems approach to managing a specific population; encourages provision of high quality care through coordination and integration of care; and sustains this model through innovative payment models.

The ACOM requires a comprehensive and robust health IT system to be successful. Health IT facilitates coordinated, patient-centered, and accountable care that connects healthcare providers across the continuum of care in support of these goals.² Likewise, secure messaging, referral management, shared decision support, performance reporting, as well as other elements of the ACOM depend on a well-designed and implemented health IT infrastructure.³

The purpose of this report is to identify and explain the key attributes and concepts required for the development of a strong and robust health IT system to support the ACOM. The concepts considered in the document are aligned with the National Quality Strategy and the Patient-Centered Medical Home model. The specified attributes and concepts were developed through a consensus process based on the expertise represented by the Accountable Care Council members but with the full recognition that such an endeavor could not possibly account for all perspectives and recommendations. Therefore, this document may be viewed as a basis for further discussion and elaboration by others in the field.

This report was developed during the publication of both the proposed and final CMS Medicare MSSP rules. While this document is written to reflect the needs of both public and private ACOMs, this report also addresses themes in the CMS MSSP ACO final rule.

The Accountable Care Council identified three areas of focus that represent criterion against which ACOMs should be measured. The Council selected three areas in order to limit the scope of what could otherwise become an insurmountable challenge. These areas are:

- Patient Safety
- At-Risk Populations
- Financial Accountability and Quality Management

In addition to the areas of focus, the report findings are informed by a national survey of 20 ACOMs in the field.

There are several key findings that the document addresses:

- Health IT systems must be flexible and support the changing needs of the ACOM.

- Health IT must support the secure, private, interoperable, comprehensive transfer, collection, and storage of data throughout the ACOM.
- The health IT system must develop functionalities that are patient-centered. The respective infrastructures of the ACOM should support the education and engagement of patients, their families and caregivers.
- In order for the ACOM to be successful, the health IT infrastructure within the organizations must promote and support care coordination amongst the healthcare team and patient.
- The healthcare team, patients, their families and caregivers must have access to complete, relevant, and comprehensible data.
- Health IT systems must support evidence-based, clinical decision support systems.
- Health IT systems must facilitate the gathering, tracking, aggregation of patient data throughout the ACOM.
- ACOMs are hesitant to apply for the CMS MSSP ACO program.
- ACOMs are involving multiple stakeholders in their development.
- ACOMs are in various stages of development.
- ACOMS recognized the need for a robust health IT system.
- The patient population served by the accountable care organizational model could dictate the development of the organization.

The objective of the report is to assist stakeholders in achieving the goals of the accountable care organizational model, and use the information presented as a valuable tool in implementing health information technology to healthcare redesign initiatives.

Overview

The theory behind the ACOM is that the quality and cost of care for patients can be improved when healthcare providers in the organization share in the savings that result from their collaboration and coordination. By aligning incentives, the ACOM offer greater benefits to participants in comparison to the current fee-for-service (FFS) healthcare system. While the ACOM can exist in different forms, at its core, the organization brings together multiple disparate healthcare providers that voluntarily organize to provide coordinated, high-quality care to a defined population of patients.⁴ The ACOM is an entity that redesigns both healthcare delivery and payment, and incorporates shared responsibility of patients among providers.⁵ ACOMs that meet quality benchmarks and reduce per-patient spending below projected costs are able to share in the achieved savings.ⁱⁱ The ACOM exists within federal, state and private sector healthcare markets. This document functions to evaluate the necessary health IT infrastructure needed for both federal and private sector ACOMs.

The federal ACOM is specified by the Center for Medicare and Medicaid Services and was created under the Medicare Shared Savings Program (MSSP), Section 3022 of the Patient Protection and Affordable Care Act (PPACA). The MSSP requires CMS to institute a shared savings program to enable the coordination and cooperation among providers to improve the quality of care for Medicare FFS beneficiaries while simultaneously reducing excessive costs.^{6,7} Specifically, the program is designed to improve Medicare beneficiary healthcare outcomes by coordinating all healthcare services and encouraging the investment in infrastructure and system redesign.⁸ The final rule for the Medicare Shared Savings Program was issued on October 20, 2011 and published in the Federal Register on November 2, 2011. Along with the CMS MSSP ACOM, the CMS Center for Medicare and Medicaid Innovation has implemented the Advance Payment Initiativeⁱⁱⁱ and the Pioneer ACO Model^{iv} to facilitate the development of ACOMs.

As an alternative to the CMS MSSP supported model, the private sector has developed payment and care delivery reform initiatives that have goals comparable to those of the CMS MSSP ACO.⁹ This includes, but is not limited to: independent physician organizations, integrated delivery systems, and commercial insurance payers.¹⁰ The private sector ACOMs are generally formed under contracts between private health insurers and healthcare provider groups capable of bearing risk.¹¹ While the private sector ACOMs may function under a similar shared savings model as that of the CMS Accountable Care Organizational Model, the private sector model is distinct in that a commercial payer, rather than Medicare, offers the financial incentives for both quality and cost performance to the provider organizations.¹² Additionally, many private sector ACOM contracts give patients additional incentives to seek healthcare services within the

ⁱⁱ For the purpose of this paper, care coordination is defined as the deliberate organization of patient care between two or more participants, inclusive of the patient, to facilitate the appropriate delivery of healthcare services. Care coordination involves the organization of people and other resources necessary to carry out all required patient care activities, and is managed by the exchange of information among participants responsible for different aspects of care.

ⁱⁱⁱ The Advance Payment ACO Model is an initiative developed by the Centers for Medicare and Medicaid (CMS) Innovation Center designed for organizations participating as Accountable Care Organizations (ACOs) in the Medicare Shared Savings Program (Shared Savings Program). Through the Advance Payment Model, selected participants in the Shared Savings Program will receive advance payments that will be recouped from the shared savings they earn.

^{iv} The Pioneer ACO Model is designed for healthcare organizations and providers that are already experienced in coordinating care for patients across care settings. It will allow these provider groups to move more rapidly from a shared savings payment model to a population-based payment model on a track consistent with, but separate from, the Medicare Shared Savings Program.

provider insurer's provider network, a feature that CMS Medicare ACOMs currently do not support.¹³

Whether it is a federally or provider-supported model, successful ACOMs will be judged on the basis of their ability to achieve progress in achieving the Triple Aim—improving the individual experience of care, improving the health of populations, and reducing the per capita costs of care for populations.¹⁴ If an ACOM is successful in meeting their specified savings benchmark, but neglects to meet their quality measures (or meets the quality measure but does not meet the savings benchmark), the organization will not receive shared savings from the respective payer. Financial incentives motivate health systems to coordinate care, reduce duplicative services, implement health information technology systems, redesign the organizational care plan processes, and practice evidence-based medicine.¹⁵

The National Quality Strategy (NQS) has outlined the goals for quality improvement in the United States healthcare system. The NQS pursues three main national aims: improving the overall quality of care by making it patient-centered, reliable, accessible and safe; improving the health of the U.S. population by supporting proven interventions to address behavioral, social and environmental detriments; and making care affordable by reducing the cost of care to individuals, families, employers, and the government.¹⁶ ACOMs, both private and federal, assist in driving the mission of NQS by improving the quality of healthcare through awarding healthcare providers that show shared savings and cost-effective care for their respective populations.

Health Information Technology and the Accountable Care Organizational Model

The implementation of a strong health IT system is essential to the functions of all ACOMs. Specifically, in the final regulations, CMS recognized that ACOMs with more IT infrastructure integrated into clinical practice will likely find it easier to be successful under the Medicare Shared Savings Program. Likewise, as healthcare providers gain more experience with electronic health record (EHR) technology, CMS will reconsider using certified EHR technology as an additional reporting mechanism used by ACOMs under the Medicare Shared Savings Program. The success of ACOMs will therefore be dependent, in part, on the ability of the ACOM to access and deliver necessary information to those that need it for treatment, analysis, education of patients and monitoring of performance.¹⁷ To achieve these goals, healthcare systems will need to implement health information technology that has the ability to deliver the right information, to the right stakeholders, at the right time.¹⁸ Additionally, the health IT infrastructure will need to enable the electronic exchange of health information, create linkages across different healthcare settings, track and coordinate care, facilitate payment distribution, and collect data in order to measure quality goals.¹⁹ The system must also be designed to minimize workflow disruption. With secure and shared access to complete, appropriate, and accurate clinical information between healthcare providers and patients within the organization, a strong health information technology infrastructure will be available to support the clinical and financial success of the ACOM.²⁰

Key Attributes Needed for a Successful Health Information Technology Structure in the Accountable Care Organizational Model

Health information technology is essential to the success of the Accountable Care Organizational Model. The following list identifies key attributes needed for the development of a successful health IT infrastructure.

- The health IT infrastructure must enable care coordination and collaboration.
- The health IT infrastructure must enable and support the comprehensive and systematic collection, storage, management, and exchange of secure personal health information between and among healthcare providers, patients and other members of a patient's healthcare team in the process of care delivery and care management.²¹
- The health IT infrastructure must include revenue cycle management technology to successfully support the financial analyses associated with accepting, negotiating, and managing new and changing payment structures. The infrastructure should enable electronic acceptance, tracking and allocation of payments and should be able to handle the distribution of payments to individuals, practices, and other appropriate organizations within the ACOM based on performance associated with specific metrics of quality, cost and patient experience.²²
- Data exchanged by the health IT infrastructure should be maintained in a secure, HIPAA-compliant, online environment that allows role-based access to and sharing of data among and between stakeholders (including hospitals, physician practices, healthcare providers and payers).²³
- The health IT infrastructure should support the collection of information embedded in the workflow of healthcare delivery.
- The health IT infrastructure should support the use of telehealth, remote patient monitoring, shared care plans, and other patient-centered enabling technologies between facilities, healthcare providers, and patients that securely exchange information.²⁴
- The information shared through the health IT infrastructure should be collected and stored in a manner that facilitates ongoing measurement of processes and outcomes related to quality, cost, and patient experiences at an individual and population level. The identified metrics will be important for the assessment of ACOMs.²⁵
- The health IT infrastructure should enable information to be transmitted, and accessible to all patients and healthcare providers authorized to view it.

- The health IT infrastructure should integrate evidence-based clinical decision support system (CDSS) services into the workflow of care delivered by healthcare providers and their practices.²⁶
- The health IT infrastructure should support and facilitate shared decision-making and care plan development through the integration of information from all healthcare providers involved in the care of a patient. There should be convenient access to user-friendly personal health information organized to be meaningful for patients/caregivers and presented in a constant format across the organization.
- The health IT infrastructure should support services for patients and caregivers to help them be informed, educated, and literate about personal health and medical conditions and to enable patient self-management of care.
- The health IT infrastructure should offer support on-going self-care and wellness management functionalities including, but not limited to, coaching from healthcare providers and ongoing monitoring of progress to promote a dialogue between patients and healthcare providers.²⁷
- The health IT infrastructure should support the analysis of clinical, administrative, and financial data to support operations, improve care and better patient outcomes while optimizing the overall performance of the organization.²⁸

To achieve the specific benefits health IT can bring to the ACOM; industry should focus on creating and implementing tools that address the key concepts. This report identifies three key concepts that the health IT infrastructure of the ACOM should support.

Part One: Patient Safety

Millions of Americans are affected by healthcare-related errors, resulting in the waste of billions of dollars in healthcare costs annually.²⁹ Many of the medical errors that occur are preventable; products of adverse medication events and associated healthcare infections.³⁰ There have been several federal efforts that focus on the improvement of patient safety within the national healthcare system, inclusive of: Michigan Keystone Intensive Care Unit Project, Safe Use Initiative, Partnership for Patients, and the Patient Safety Initiative.

A core principle of the ACOM is to improve the safety of patients' care. Improvements in patient safety depend on the coordination of patient care, collaborative teamwork, and timely and accurate information collection, monitoring, analysis, and reporting to address the opportunities identified.³¹

There are many elements to consider in the improvement of patient safety; however the patient and their family/caregivers must remain at the center of this focus. The patient and their family/caregivers must be updated and educated about medical processes and outcomes in order to make informed decisions. Health IT can support patient, family and caregiver engagement by creating access to information, educational tools, and avenues to directly connect with their healthcare providers.

ACOMs are highly complex, demanding significant coordination across disparate healthcare providers with differing workflows. Health IT can facilitate coordinated care among healthcare teams. Additionally, health IT can affect the rate and occurrence of medical errors in three ways: preventing the occurrence of errors and adverse events; enabling a more rapid response after an adverse event has occurred; and tracking, trending, using predictive modeling, and providing feedback regarding adverse events.³² In order to support patient safety within the ACOM, the health IT infrastructure should include the following:

- A robust foundation for effective and protected electronic information exchange with the following functions:
 - Effective identity and role management capacity (including security and privacy policies);
 - Server and database architecture that incorporates fault tolerance and disaster recovery features;
 - A communications and data exchange infrastructure that allows secure messaging and other appropriate services for patients, clinicians, and family caregivers in a cost-effective and accessible way (including standards and regulatory compliance).
- EHRs that are accessible at all points of care and include evidence-based clinical decision support systems, especially during prescribing; standard order sets (for common conditions/situations but incorporating the ability for customization for specific patients); safety alerts that do not create alert-fatigue; the organization of information/decision support; and evidence-based treatment recommendations.^{33 34}

- Appropriate patient-centered technologies (for example telemonitoring, personal health records, electronic reminders) that offer education and reminders in order to foster patient engagement.
- The capability of the patient, clinical team and caregivers to view the complete healthcare record from all appropriate care sites, inclusive of the home setting, at all appropriate points in time in a manner that is intelligible and useful for the viewer. Electronic information should contain the patient's longitudinal medical record history, which is inclusive of allergies, alerts, laboratory and radiology results, diagnoses, treatments, therapies and prescribed medications.³⁵ Information also should include the narrative from past healthcare providers if desired by the viewer.
- The ability for the patient, clinical team, and caregivers to retrieve context-sensitive (user, patient and disease), extractable, access to information when necessary.
- The health information technology system should include a system-wide, interoperable adverse event reporting system³⁶, with the ability to monitor and identify information that may be indicative of a trend for the patient or a population of patients.³⁷
- The health IT infrastructure should support appropriate training and facilitate ongoing support of the patients, clinicians, and caregivers.

Part Two: At-Risk Populations

An Accountable Care Organizational Model ideally will improve the quality and reduce the cost of healthcare in a given patient population. The ACOM can support the health needs of at-risk populations through the successful implementation of health IT.

The CMS MSSP ACO final rule defines “at-risk populations” to include individuals that have “Diabetes, hypertension, ischemic vascular disease, heart failure, coronary artery disease, and mental health or substance abuse disorder.”³⁸ This report uses an expansive definition of at-risk populations inclusive of the CMS MSSP ACO final rule definition and expanded upon to include health disparities affecting racial and ethnic populations. Creating a successful healthcare system that positively influences the health of at-risk populations involves comprehensive care as well as preventative services. Along with traditional clinician care, the ACOM should institute patient education, self-management, and wellness services. Health IT has the ability to positively influence the healthcare of at-risk populations by gathering and aggregating data that focuses on risk factors for specific populations.³⁹ This data can be directed towards healthcare services that include appropriate outreach and education,⁴⁰ as well as disseminate “lessons learned” to healthcare teams within the ACOM.⁴¹ In order to support the health of at-risk populations within the Accountable Care Organization Model, the health IT infrastructure should include the following:

- Automated alerts, reviews, and categorization of patient-level information within EHRs in order to facilitate the timely identification of risk factors and support the diagnosis of at-risk defining conditions.⁴²
- Clinical decision support systems (CDSS) to help screen for and diagnose conditions associated with at-risk populations.
- CDSS to present treatment and management approaches through the use of systematic, automated review of patient-specific and population-based data.⁴³ This includes, but is not limited to, the following functions:
 - Support for care management of individual patients;
 - Usable, timely and accessible data;
 - Analysis of registry data to identify gaps in care or quality;
 - Analysis of patient population demographics, stratification of risk factors, and presentation of results against appropriate benchmarks.⁴⁴
- Community tracking systems that seek to integrate patient-level data from healthcare providers caring for at-risk populations including information on demographics, patient experience, health status and eligibility for public insurance programs in a system that is accessible to healthcare providers, case workers and other social service providers.⁴⁵
- Access to personal health records by the patient, delegated caregivers, and healthcare providers preferably linked to the patient’s EHR. The features/functions should include, but not be limited to:
 - Reporting of trends in laboratory and other patient-specific information to support lifestyle and health adjustments;

- In-home telemonitoring devices;
- Alerts for prevention and intervention based on clinical guidelines and patient preferences.⁴⁶
- Health IT that facilitates patient and family caregiver education about the use of technology to support engagement in their healthcare and wellness.⁴⁷ The health IT infrastructure should include functionality to present information in the individual's primary language and culture context. Support for patients whose primary language is not spoken by the healthcare professional and care team should include translation and/or interpretation services.
- Health information technology that includes usability features or functions that accommodate the needs of persons with disabilities, including those who use assistive technology for healthcare providers and patients.⁴⁸
- Health information technology solutions that can provide the ability to refer and track participants in health and wellness promotion; interoperable with case and disease management tracking systems for patient-centered care coordination; interoperable with the patient portal for self-management tools; and interoperable with the EHR for care coordination.⁴⁹

Part Three: Financial Accountability and Quality Management

The Patient and Protection Affordable Care Act created several incentives to drive the development of payer-provider collaborations that focused on the delivery of high-quality, low-cost care; measurement of performance and value; and the promotion of the adoption of health IT.⁵⁰ Because both providers and ACOMs have incentives for well-coordinated care, the infrastructure must develop a reimbursement model that focuses on shared savings and quality management.

In order to realize the goals of the organizational model, the health IT infrastructure developed for ACOMs must support data gathering, analysis, and financial modeling. Data must not only be provided in an accessible, legible, and usable format, but the infrastructure should include reporting functions that enable ACOMs to identify opportunities for improvement. Under the CMS MSSP ACO final rule, ACOMs will be responsible and accountable for the quality and cost of care provided to a defined population.

While there are different reimbursement models available to ACOMs, the health IT infrastructure required is relatively similar for all. ACOM should support the following features/functionality:

- The health IT infrastructure must enable the identification of patient populations and individuals in need of intervention based on current and historical health information in order to report on quality measures that support shared savings.⁵¹
- The health IT infrastructure must be able to support and collect multiple streams of information, including claims data, clinical medical records, and health information exchanges.
- The ACOM should permit the bidirectional exchange of information between the organization, healthcare providers, and patients. The exchange of information should be in compliance with Health Level Seven (HL7) and Integrating the Healthcare Enterprise (IHE) standards^v and the Direct Project^{vi} protocols. Data element standards should be utilized when available and the health IT infrastructure should utilize these standards in order to promote the use of accurate and comparable quality measures.⁵²
- The health IT infrastructure should include appropriate tools to collect and report standardized, reliable health plan and provider performance data.⁵³ Capturing these elements should not interfere with work flow, and there should be flexibility in which standard data elements the individual ACOM uses within its health IT infrastructure.

^v IHE is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical need in support of optimal patient care. Systems developed in accordance with IHE communicate with one another better, are easier to implement, and enable healthcare providers to use information more effectively

^{vi} The Direct Project specifies a simple, secure, scalable, standards-based way for participants to send authenticated, encrypted health information directly to known, trusted recipients over the Internet.

- Information exchanged within the health IT infrastructure should be HIPAA-compliant and include functionality for patient consent and allow provision of de-identifiable data in the course of providing clinical and business functions for the enterprise. This should be applied to the communication of clinical and business functions among providers, the patient and family, and other members of the healthcare team (including health plans and insurance companies).⁵⁴
- The health IT infrastructure also should include a value-based outcome analysis that defines baseline outcomes, applies benchmarking for said outcomes, and outlines opportunities for interventions.⁵⁵
- The health IT infrastructure should support proactive management of care by providing point-of-care access to evidence-based guidelines, comparative research (including quality and cost), and other clinical care guidelines to achieve the best possible clinical and financial outcomes.⁵⁶ In addition, the health IT infrastructure should enable the translation of evidence-based guidelines into actionable CDSS.
- The health IT infrastructure should enable the analysis of data across payers and populations in order to gather quality measure expenditures and establish as benchmark and targets for the ACOM. Examples of processes to be supported include, but are not limited to: supportive services for revenue modeling by determining the savings accrued through the difference between projected and actual spending; processes to establish benchmarks for historical spending over a defined time period; and scenario planning that adjusts benchmarks based on case-mix and includes prospective analysis of the cost of care for those populations.⁵⁷
- The infrastructure should enable the ability of ACOMs to distribute and track payments according to the financial model adopted. The infrastructure should be flexible and support different models of payment.⁵⁸

The Accountable Care Organizational Model has great potential to improve the delivery of healthcare in the United States. The discussion of each of the key attributes and concepts represent electronic capabilities that should support the ACOM; however, many more health IT features will be necessary to create a truly successful health IT system within the ACOM. Nevertheless, the enactment of the discussed features will be critical to the success of the model. The current field of ACOMs reflects a variance in organizational models reflective on individual organizational and population needs. The development and importance of the key attributes and concepts are reflected in a survey of the field of ACOMs.

eHealth Initiative 2011 Accountable Care Organizational Model Survey

Over the past decade, the eHealth Initiative has conducted several surveys in order to inform the field of health information technology. The 2011 Accountable Care Organizational Model Survey assesses the growth and development of the field of ACOMs, with specific attention to quality measures and the health IT infrastructure of the organizations. Results from the survey informed the development of the report's final recommendations.

Methodology:

The survey was conducted over a two-month period and involved an assessment of the current field of both private and CMS-supported ACOMs. The eHealth Initiative launched the Accountable Care Organizational Model Survey on October 7, 2011, and concluded the survey on November 29, 2011. The survey was structured as a combination of multiple choice (6) and open-ended questions (13) that focused on the organization's purpose for becoming an ACOM; current or potential involvement in the Medicare Shared Savings Program and the CMS Innovation Center Pioneer Pilot; health IT infrastructure, and implementation goals. Participants were asked a total of twenty one questions. Survey questions were developed through a multi-consensus process.

Survey participants were selected according to recommendations provided by eHealth Initiative members and general research of the field. Staff conducted preliminary research of the ACOM field from July 2011-October 2011. eHealth Initiative staff also gathered the names of potential organizational candidates through published studies and press announcements. All of the surveyed organizations identified themselves as being or becoming an ACOM.

In all, the eHealth Initiative contacted over 60 organizations. Out of the organizations contacted, twenty participants were included in the survey results. Of the twenty respondents, fourteen organizations completed the survey after the CMS MMSP ACO final rule was released; four respondents completed the survey before the final rule was issued. The low response rate in survey participants can be attributed to the fact that the majority of ACOM participants identified were in the development stages.

Announcement of the survey was conducted through personal outreach and contact through phone calls and emails. Each response was reviewed, and significantly incomplete responses, duplicates, or responses to questions that were outside of the scope of the original question were excluded from the results. All responses were self-reported by participants. Responses were reviewed for rationality; however, the accuracy of responses was not individually verified. It should be noted that a selection bias may exist, given that not all of the respondents answered every question.

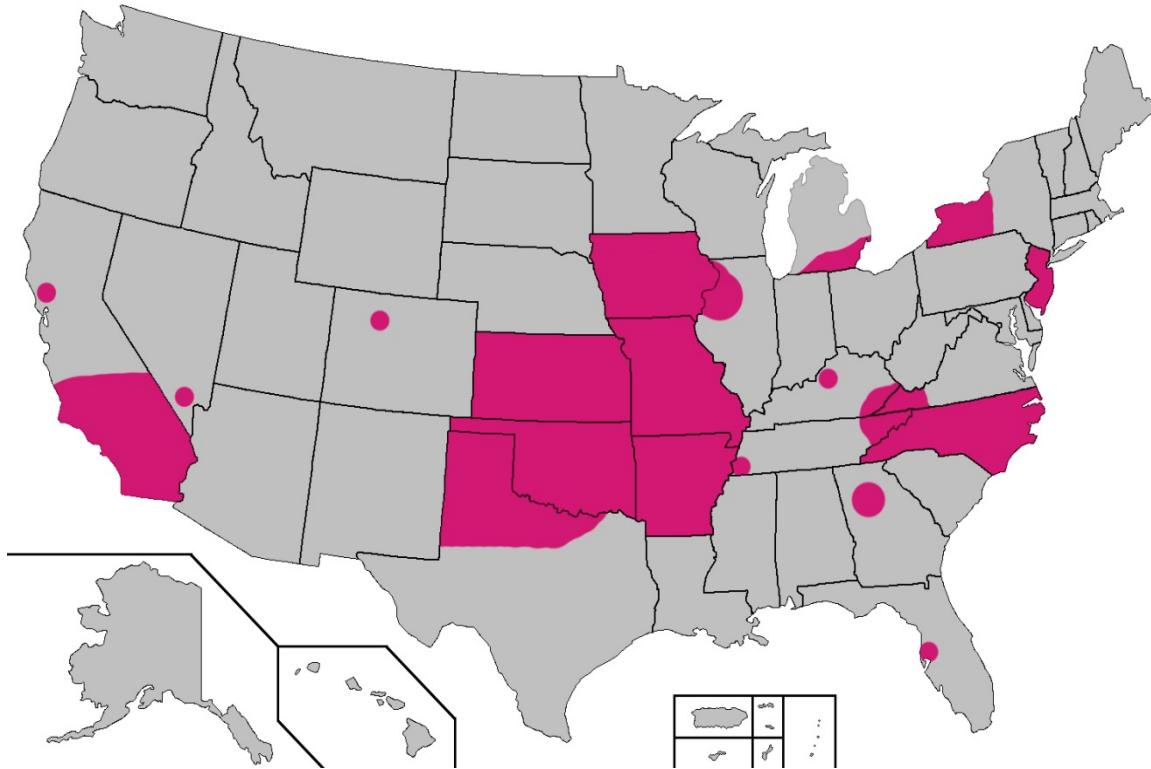
Respondents were not offered incentives to participate in the survey.

Key Survey Findings

- Out of those who responded, the majority of organizations reported their mission for developing an ACOM were consistent with the goals of the Triple Aim.
- Respondents reported various stages of development, with the majority being fully operational.
- ACOMs reported serving a variety of patient populations, inclusive of commercial, Medicare, Medicaid, organizational employees, state employees and uninsured populations.
- The majority of respondents reported utilizing a combined FFS and shared savings payment model or an upside payment model.
- The majority of respondents were unsure or did not intend on applying for the Medicare Shared Savings Program or the CMS Innovation Center Pioneer ACO Model.
- Respondents reported utilizing health IT functionalities to support quality measurements, enforcing data integrity, promoting patient engagement, reporting public outcomes and improving healthcare services delivered by the organization.

Survey Results

Twenty respondents from across the country answered the survey. The map below depicts the geographical concentration of respondents.



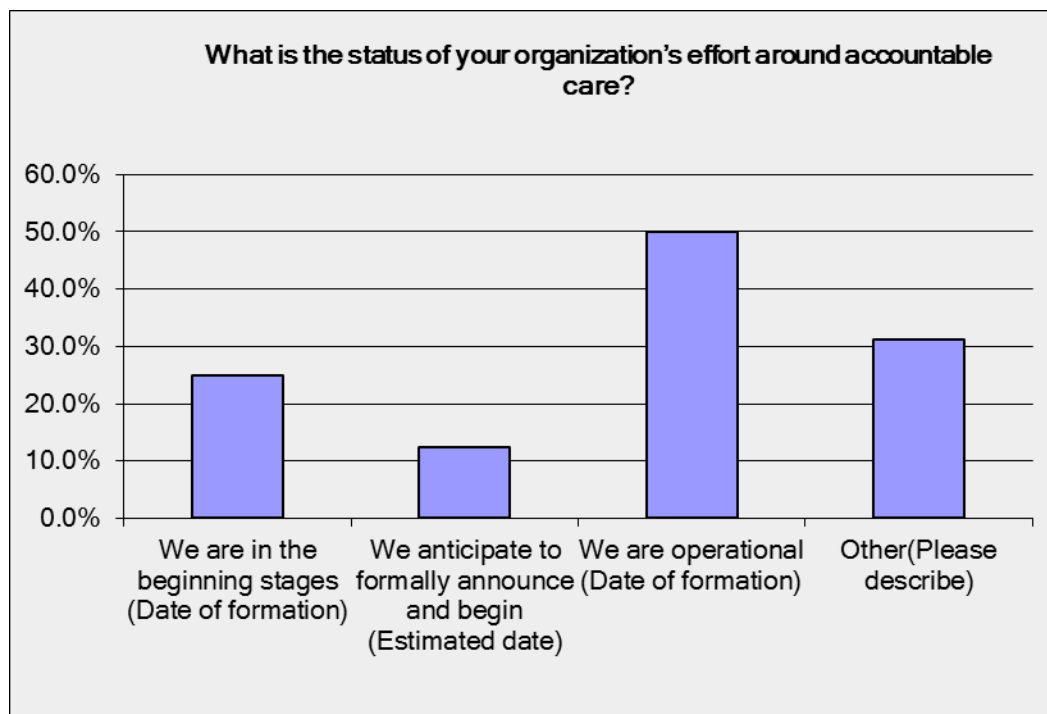
The shaded areas represent geographical areas in which ACOM respondents cover. One respondent reported national coverage.

Of the respondents, seventeen organizations reported that their mission of developing an ACOM was consistent with the goals of the Triple Aim:

- Better care for individuals;
- Better health for populations;
- Reducing per-capita costs.

ACOMs reported being in various stages of development.

- Eight organizations reported being fully operational.
- Five organizations responded as “other” to the question.
- Four organizations reported being in the formational stages of developing their ACOM.
- Two organizations reported formally announcing the launch of their ACOM in the near future.



ACOMs reported a variety of healthcare participants in their organizational structures. Participants included the following:

- Physicians groups, hospitals partnered with physicians groups, integrated health delivery systems, health plan sponsors (in partnership with aligned health systems), insurance companies, home health agencies, population health management agencies, community hospitals, skilled nursing facilities, ancillary providers, urgent care, and specialists.

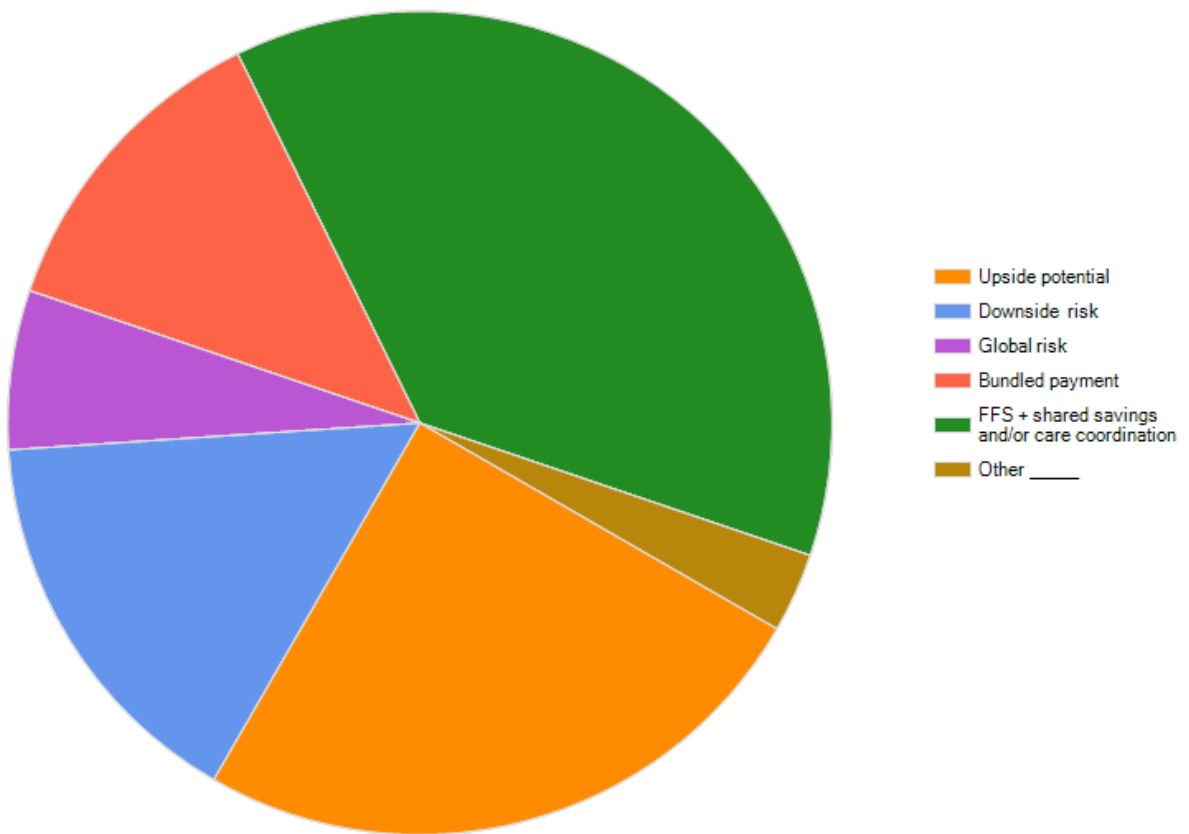
Of the respondents, sixteen organizations reported information on the patient population demographics within their respective organizational models.

- Six organizations reported serving both commercial and Medicare populations.
- Five organizations reported serving a mixed demographic of patient populations – inclusive of Commercial, Medicare, Medicaid and health system / provider group employees and state employees.
- Two organizations reported serving only Medicare patient populations.
- One organization reported serving applicable employees within the specified healthcare system.
- One organization reported serving only commercial patients.
- One organization responded unsure.

ACOMS are utilizing a variety of payment models to achieve shared savings. Several organizations reported utilizing or planning to utilize a combination of models:

- Twelve organizations reported utilizing or planning to utilize a FFS plus a shared savings payment model.
- Eight organizations reported using an upside potential model.
- Five models reported utilizing or plan to utilize a downside risk model.
- Four organizations are utilizing or plan to utilize a bundled payment model.
- Two organizations were utilizing a global risk model.
- One model reported unsure.

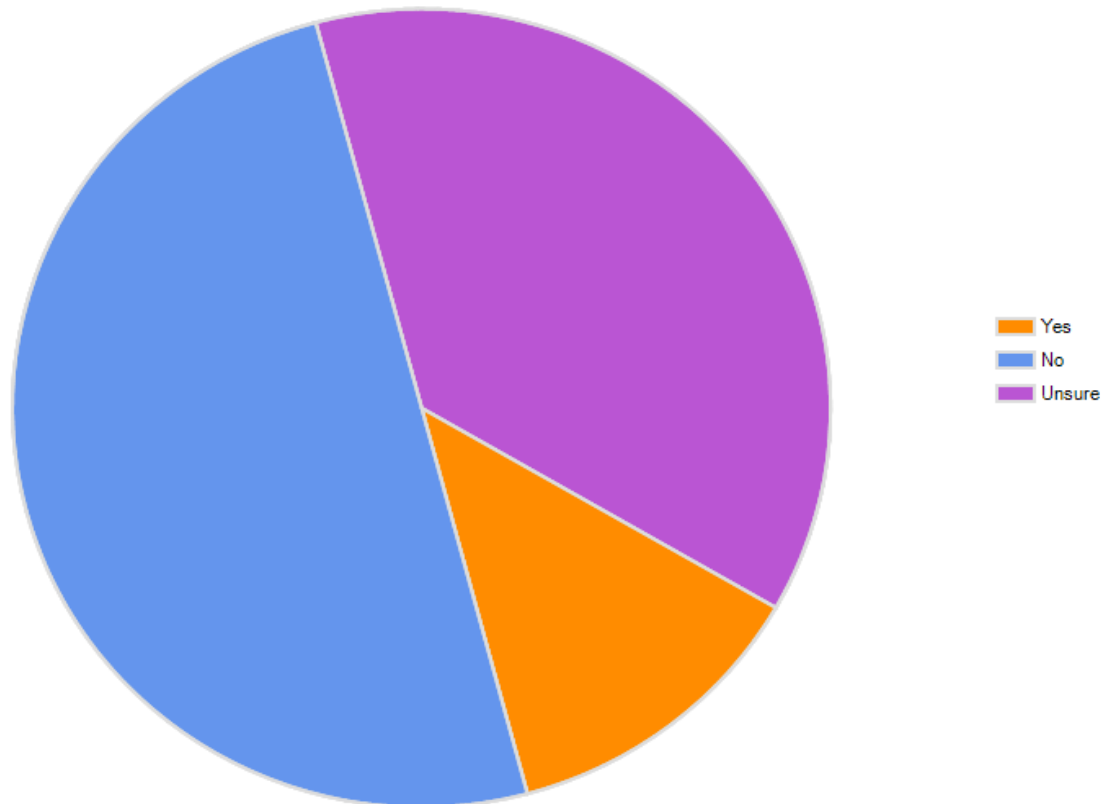
How would you best describe your payment model or intended payment model? (Check all that apply)



This survey was conducted prior to and after the issuance of the CMS MSSP ACO final rule. While many of the organizations that were surveyed answered that they intended on participating in one of the MSSP programs, the majority of organizations surveyed did not intend on participating. Sixteen organizations reported information on participation in the CMS MSSP program.

- 50% indicated that they did not intend on applying for the CMS MSSP program.
- 37.5% were unsure if their organizations intended on applying for the MSSP program.
- 12.5% stated that they intended on applying for the CMS MSSP program.

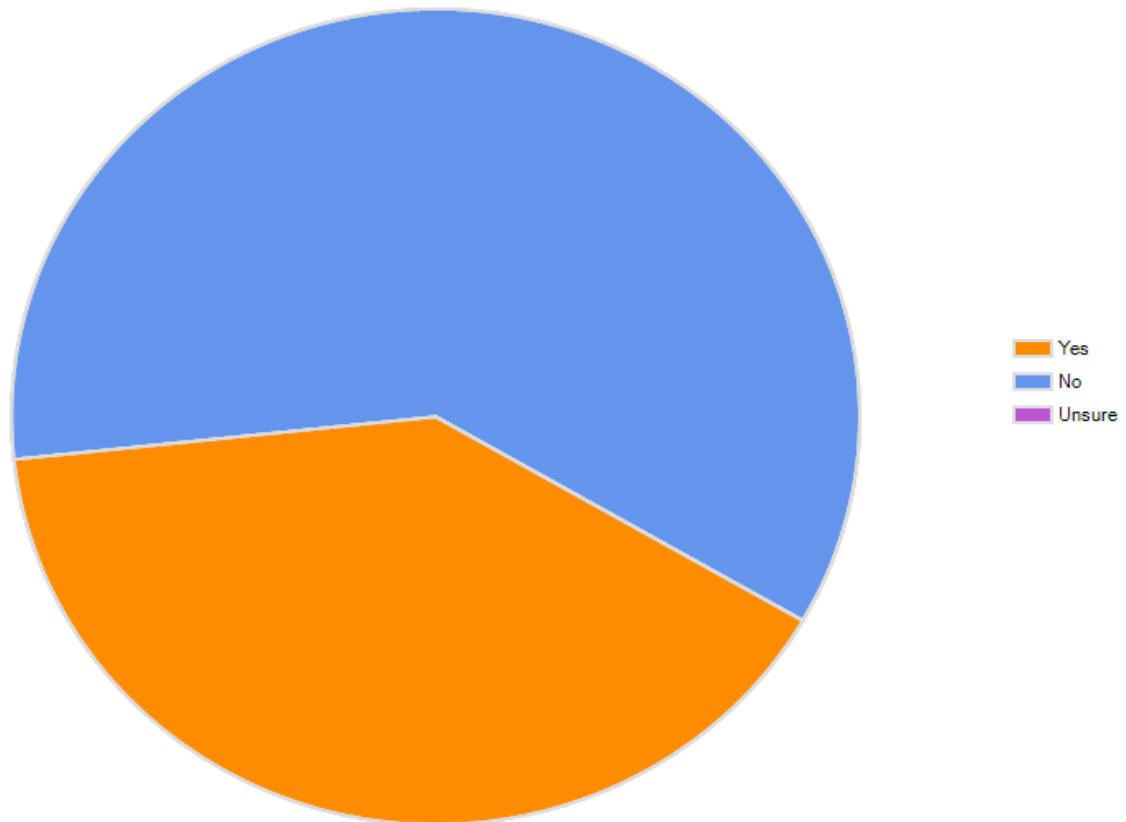
Has your organization applied for the Medicare Shared Savings program (MSSP) or does your organization intend to do so?



The survey also inquired if the organizations intended on applying for the Center for Medicare and Medicaid Innovation (CMMI) Pioneer Program. Fifteen organizations responded to this question:

- 60% stated that they would not apply.
- 40% stated that they intended to or had applied.

Did your organization apply for the CMMI Pioneer program?



Respondents provided a variety of answers to why they did not intend to participate in the MSSP or CMMI Pioneer ACO program. Primarily, respondents stated that they were still concerned with CMS MSSP ACO final rule, and neither program provided enough incentives for their participation. Respondents also stated:

- The Medicare patient population was rather low, and did not warrant CMS participation.
- They did not have an opportunity to digest the rule and were still trying to determine if they would apply internally.
- Their organization worked with Medicare Advantage populations and the CMS MSSP ACO final rule did not incorporate enough incentives to warrant participation.
- The final rule still contained major loop holes impeding the possibility of their success.

- One organization specifically cited the decision to apply to an alternative federally sponsored pilot program.

Fourteen organizations reported on the health IT infrastructure of their respective ACOMs. Respondents reported implementing or intentions of implementing the following health IT infrastructure functionalities:

- EHRs, a health insurance exchange, clinical decision support system tools, patient provider portals, disease registries, patient health records, analytic software, a data warehouse, health information exchanges, e-prescribing, shared decision-making tools, patient registry, governance/business intelligence (BI) units necessary for population health management, web based point of care reminders.

Fourteen respondents also reported on several health IT functionalities considered critical to their ACOM success. Answers included:

- Tools to identify equitable investments/contributions needed for a successful collaboration (marketing, technology, etc.), clinical decision support tools, analytics to identify (early) disease and illness, arming the patient community with self-service technologies, online transparency functionalities to enable informed healthcare decisions, innovative plan designs to improve patient engagement, population risk stratification, care planning, patient wellness and communication, continuity of care document (CCD) to capture and display via portal the current lab, radiology, medications, immunizations, problems list, encounters, quality management dashboard and reporting tools for measures such as P4P, CMS 5 Star and other HEDIS measures, coordinated care platform for population health analytics and gaps-in-care notifications into PCP panel level of financial and clinical data (claims based) that will be risk-adjusted, patient portal, physician portal, patient registry, and predictive modeling for case management built off of a data warehouse.

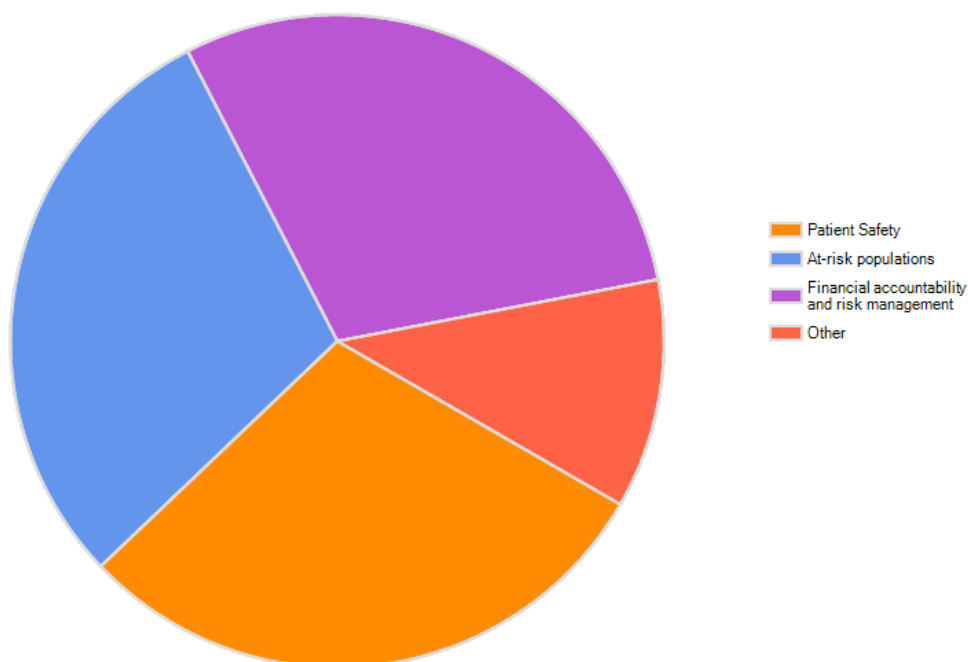
Patient engagement and self-management tools were identified within the report as an important functionality of the ACOMs' health IT infrastructure. When organizations were asked what technologies they use or plan to use to engage patients in their own care and self-management, 13 respondents answered in the following ways:

- Telehealth monitors.
- Telephonic support.
- Mobile technology.
- Patient Portal.
- Internet-based patient education programs.
- Personal Health Comprehensive assessment tools to help providers determine the patient's level of health literacy so that education can be tailored accordingly.
- Online communications such as viewing a summarized patient record, enabling patient input, enrolling in health and wellness programs, linking to health information sites, managing permissions for record access.

The report looks at three areas of focus in which ACOMs should be measured. 15 organizations reported using health IT to support patient safety, at-risk populations, and financial accountability and risk management as quality measurements used by the organization:

- 86.7% reported measuring patient safety.
- 86.7% reported measuring at-risk populations.
- 86.7 reported measuring financial accountability and risk management.

Our report looks at the ways in which HIT supports an ACM, specifically in the domains of patient safety, at-risk populations, and financial accountability and risk management. Does your organization measure any of these areas? Please check off measures that apply.



Of the respondents, six organizations reported information on additional measures used by the ACOMs:

- Risk management.
- Treatment authorizations.
- High preventable populations- the most impacted in terms of potentially preventative costs.
- In-network referral management.
- Patient and family education.
- Case management.
- Adherence to medications

Fifteen Respondents listed several (additional) metrics that the respective organizations intend on using or use to measure success within their ACOM. Responses included:

- Efficiency and quality outcomes, measured through patient surveys.
- Patient satisfaction.
- Advanced Primary Care Medical Home certifications.
- NCOA certifications for PCMH.
- IHA P4P.
- Lower annual costs.
- Quality measurement based on national standards.
- HEDIS measurements based on patient reports.
- PQRI reporting.
- Reaching targets for improvement by establishing over 101 metrics that cover 29 medical and surgical disciplines.
- Growth in relation to increased physician alignment.
- Patient satisfaction scores.
- Bridges to Excellence recognition.
- Meaningful Use.
- Alignment with the organizational commercial health plans.
- NCOA Disease management Accreditation.
- Measures mirroring the 65 ACO measures in the CMS MSSP proposed ACO rule.

Fourteen ACOMs reported on the key health IT infrastructure capabilities organizations have adopted to support their respective measures. Responses included:

- Clinical Decision Support Tools
- Health Information Exchange
- Electronic Health records
- Data warehouse
- Provider and Patient Portals
- Patient Registry

Accurate and reliable data reporting will be paramount to the success of the ACOM. Fourteen respondents listed ways in which the respective organizations will use health IT to ensure data integrity:

- Highly-rigorous member matching protocols to ensure claims data are associated with the correct patients. HIE data will be matched back to a process to validate the information through a patented master patient index.
- Data use agreements that are executed by all parties connected with ACOM collaboration.
- A unified data governance model/framework.
- Clinical integration experts daily monitor and correct any issues with the loading of clinical data, performance data, and matching to the correct patient records. The organization CMIO and clinical staff are responsible for designing the quality measures ensuring the reliability and applicability for our physician organization.
- Using the HIE as the foundation for the quality reporting and decision support tools to ensure the physician is reporting and viewing recommendations based on longitudinal, community-wide patient data that has been received from validated and trusted sources.
- Claims data is processed and audited (SAS 70); HEDIS measures are generated using NCOA certified software, and data distributed to individual providers is risk adjusted as appropriate.
- The organization-based metric data system, approach processes and tools. The primary tool to calculate and present the metric values is Crimson Continuum of Care.
- Physician-directed quality assurance and process improvement committee to establish and enforce performance standards for quality of care and related services, cost-effectiveness, and process and outcome improvements.
- Data evaluations through multiple departments across the system to ensure accuracy.

Thirteen ACOMs reported various processes implemented (or intentions to implement) in order to leverage the data collected to improve patient care and reporting public outcomes. These include:

- The organization will leverage the centralized clinical hub that collects and integrates multi-payer administrative and pharmacy data, near-real-time clinical data from local lab and radiology service centers, and multi-hospital admit and discharge data. Third-party acute and ambulatory EHR data harvesting is planned.
- The organization will access clinical data analytics that are populated from the HIE data and measure various quality standards for chronic care and other disease management improvement. The HIE's quality application will be able to produce various types of backend reporting such as HEDIS, PQRS, Medicare Five-Star, Meaningful Use and additional quality measures as deemed appropriate.
- Data on outcomes will be reported on the ACOM web site.
- HEDIS measures and PQRI measures generated through certified software.
- The organization's performance improvement plans are linked to Medical Director to physician discussion of opportunities for improvement combined with focused educational efforts surrounding disease management. There are also collaborative forums designed to identify best practice opportunities.
- Best practice guidelines or evidenced-based pathways for specific chronic diseases.

- Performance at practice level is reported back to participating providers and incorporated into policy and payment systems. Quarterly reports to state legislature are public record.
- Measure and share performance on these nationally accepted measures of performance.
- Public reporting on the population of patients cared for by the organization.

Fourteen organizations reported concerns regarding the implementation of the Accountable Care Organizational Model. Concerns included:

- The effect on the continued culture change, specific to physicians and business culture.
- Beneficiary alignment to the goals of the ACO.
- The ability to meet the ongoing financial requirements of maintaining a sophisticated health IT infrastructure.
- The scope of human resources required to implement the various components of a health IT infrastructure.
- State-level budget challenges.
- The ability to get all of the stakeholders to work collaboratively.
- Increasing communication and coordination of care across providers.
- Cost of administration - maximizing workflows, controlling IT cost.
- Planning and logistics to work with multiple disparate community delivery organizations and their respective health IT suppliers in order to efficiently move patient data.
- Data and exchange standards need improvement across the industry. Providers need to be more effective at pressuring their health IT suppliers to offer better and more affordable interoperability across the care continuum.

The ACOM survey data offers a “snapshot” of the current national landscape. While many of the ACOM respondents were in the formative stage of development, the survey data reveals diversity in stakeholder involvement, geographical penetration, and patient populations. Additionally, the data indicates that organizations are interested in forming ACOMs, supported by both provider and public incentives. This indicates that healthcare providers are interested in the benefits of the ACOM model, however, there is still concern relating to the benefit of the MSSP program to the respective respondents goals.

Similarly, the survey results suggest that all respondents understand the importance of health IT and intend on utilizing technological solutions to facilitate their organizational goals. Many of the health IT solutions used by the respective organizations align with recommendations within the report, including among others the use of data warehouses, EHRs, telemonitoring, and clinical decisions support systems to facilitated the transfer of information within the ACOMs.

ACOMs have implemented technological solutions to ensure that data transmitted throughout their organization is protected, validating the importance of data integrity. While data collection is important to quantify shared savings by various ACOMs, respondents also reported a variety of uses for data collected, specifically citing near-real-time clinical data from local healthcare providers, measurement of various quality standards for chronic care and other disease management improvement, public reporting best practices guidelines, shared performance with participating providers, and opportunities. This indicates that many ACOMs recognize and intend on using information gathered to improve quality of services provided to their respective beneficiaries. Most of the respondents reported including patient safety, care for at-risk

populations, and financial management and accountability as quality measures used by their respective organization. In addition, respondents referenced patient and family education, case management, medication adherence, treatment and preventative medical solutions as additional key quality measures used by the organizations. While this report does not specifically address the additional quality measures reported by ACOM respondents, the measures align with many of necessary supportive features listed within the report.

Despite efforts being made by the respective respondents in their efforts to forming ACOMs, many organizations have significant concerns. Concerns included, but were not limited to the effect of the ACOM structure on the culture, workflow processes, budget challenges, data exchange standards, among others. These concerns can be attributed to the evolving climate of the field. In order to minimize these concerns, ACOMs will need to be flexible to the changing needs of their organizations and respective patient populations.

Conclusion

eHealth Initiative supports the development of the Accountable Care Organizational Model as a method to improve the quality of healthcare while introducing new payment models that align incentives to produce seamless care for defined populations using a robust health IT infrastructure.

The Accountable Care Organizational Model survey offers a sampling of accountable care activities across the nation and respondents were in different stages of development. Many of the key attributes and concepts suggested by the ACC were clearly supported by the survey results. The results also indicated that more important than any one individual component or capability, is the ability of an ACOM to meet internal priorities and respond to external challenges through a robust yet flexible health IT infrastructure.

Currently, the U.S. healthcare system does not deliver the quality of care we should expect, and the spending on healthcare is not sustainable. New ways to organize healthcare and how it is financed are part of the healthcare reform efforts. As one of several healthcare models intended to improve the quality of care, ACOMs have the potential to reorient and transform the healthcare system. By creating aligned incentives through accountability and maintaining the Triple Aim as a cornerstone towards the improvement of health services, administration, and delivery, ACOMs can successfully coordinate quality care for at-risk populations; improve patient safety and experience across the continuum of care.

Because ACOMs offer integrated services that have traditionally existed independently, ACOMs will require a robust health IT infrastructure that is capable of supporting the delivery of seamless, integrated and accountable care. Sophisticated, user-centric health IT systems can not only facilitate and enable care coordination, but also allow the secure transfer of data between all parties involved across the continuum of care. Effective technology solutions for ACOMs can improve patient safety, garner quality improvements and cost-effective care, and accommodate different financial models, organizational size, and structure. The flexibility of the ACOM health IT infrastructure will be a key factor for ensuring a viable, sustainable business model that can adapt to changing revenue cycles and financial accountability processes. To avoid creating further silos of healthcare, ACOMs should strive to align technical standards and policy with the efforts of health information exchanges, health insurance exchanges, and data collection efforts.

ACOMs surveyed in the field recognized this necessity and are utilizing health IT to support quality measurements, enforce data integrity, promote patient engagement, report outcomes publicly, and improve the overall quality and efficiency of healthcare services delivered by the organization.

Glossary

Accountable Care Organizational Model (ACOM)

- A group of healthcare providers (e.g. primary care physicians, specialists and hospitals) that have entered into a formal arrangement to assume collective responsibility for the cost and quality of care of a specific group of patients and that receive financial incentives to improve the quality and efficiency of healthcare. The term accountable care organizational model is intended to include provider and Center for Medicare and Medicaid supported entity.
 - Source: <http://www.rwjf.org/qualityequality/glossary.jsp>

Acute care

- Short-term medical treatment, most often in a hospital, for patients who have a severe illness or injury, or are recovering from surgery
 - Source: <http://www.rwjf.org/qualityequality/glossary.jsp>

Advance healthcare directive or advance directive

- A written instructional healthcare directive and/or appointment of an agent, or a written refusal to appoint an agent or execute a healthcare directive. This document is employed to extend patient autonomy into the period in which the patient has lost the ability to make decisions for him or herself.
 - Source: <http://aspe.hhs.gov/daltcp/reports/2007/advdirlr.htm#term>

At-risk population

- At risk populations include individuals that have "Diabetes, hypertension, ischemic vascular disease, heart failure, coronary artery disease, and mental health or substance abuse disorder, in addition to health disparities affecting racial and ethnic populations."
 - Source: <http://www.gpo.gov/fdsys/pkg/FR-2011-11-02/pdf/2011-27461.pdf>

Audit Log:

- Computer files containing details of amendments to records, which may be used in the event of system recovery being required. The majority of commercial systems feature the creation of an audit log. Enabling this feature incurs some system overhead, but it does permit subsequent review of all system activity, and provide details of: which User ID performed which action to which files when etc. Failing to produce an audit log means that the activities on the system are 'lost'.
 - Source: http://www.seattle.gov/informationsecurity/glossary_A.htm#Audit Log

Beneficiary

- An individual enrolled in a health insurance plan and receives benefits through those policies.
 - <http://www.healthinsurance.org/glossary/>

Bidirectional Communication

- Two-way flow of information from the healthcare provider, inclusive of the laboratory, to the patient, caregivers, and their families.
 - Source: Kilo, C.M. and Wasson, J.H. (2010). Practice redesign and the patient-centered home: history, promises, and challenges. *Health Affairs*. 29(5): 773-778.

Bundled Payment

- A reimbursement model that links payments for multiple services patients receive during an episode of care.
 - Source: <http://innovations.cms.gov/documents/pdf/Fact-Sheet-Bundled-Payment-FINAL82311.pdf>

Capitation

- Rate paid to a health plan or provider for services based on a fixed monthly or yearly amount per person, no matter how few or many services a consumer uses.
 - <http://www.ct.gov/oha/cwp/view.asp?a=2277&q=299920>

Care

- Services rendered by members of the health professions for the benefit of a patient. This is inclusive of diagnosis, follow up, and health maintenance treatments.
 - Source: <http://www.cms.gov/manuals/Downloads/bp102c16.pdf>

Care Coordination

- The deliberate organization of patient care among two or more participants, inclusive of the patient, to facilitate the appropriate delivery of healthcare services. Care coordination involves the organization of people and other resources necessary to carry out all required patient care activities, and is managed by the exchange of information among participants responsible for different aspects of care.
 - Source: <http://www.ahrq.gov/qual/careatlas/careatlas2.htm>

Care Plan

- Usually a written medical and/or nursing care program designed for an individual patient.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68010347>

Care Site

- Setting in which an individual receives treatment for non-emergency conditions. The site could be a physician office, retail clinics, urgent care center, or emergency room.
 - Source: Weinick R. M., Burns R. M. and Mehrotra A. (2010). Many emergency department visits could be managed at urgent care centers and retail clinics. *Health Affairs*. 29(9):1630–1636.

Care Team

- Care of patients by a multidisciplinary team, inclusive of pathologist, home care aids and specialists, usually organized under the leadership of a physician; each member of the team has specific responsibilities and the whole team contributes to the care of the patient.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68010348>

Care Transitions

- The movement patients make between healthcare practitioners and settings as their condition and care needs change.
 - Source: <http://www.caretransitions.org/definitions.asp>

Caregiver

- Persons who provide care to those who need supervision or assistance in illness or disability. They may provide the care in the home, in a hospital, or in an organization. Caregivers include trained medical, nursing, and other health personnel, as well as,

parents, spouses, or other family members, friends, members of the clergy, teachers, social workers, and fellow patients. The definition caregiver also encompasses family caregivers. Family caregivers are friends and any other unpaid people caring for the patient and acting as a patient advocate.

- Source: <http://www.ncbi.nlm.nih.gov/mesh?term=caregiver>

Capitation

- A health insurance payment mechanism in which a fixed amount is paid per person to cover services; a fixed, per capita (per head) payment.
 - Source: <http://www.aarc.org/advocacy/resources/glossary.html>

Case Manager

- Provides monitoring and coordination of the delivery of health services for individual patients to enhance care and manage costs. Used for patients with specific diagnoses or who require high-cost or extensive healthcare services.
 - Source: <http://www.aarc.org/advocacy/resources/glossary.html>

Chronic Care

- The continuum of care required over a prolonged period of time for people who have lost, or never acquired, functional abilities. Types of care can include medical care, rehabilitative care, and personal assistance.
 - Source: <http://www.rwjf.org/files/publications/other/ChronicCareinAmerica.pdf>

Clinician

- A professional directly providing healthcare services.
 - Source: <http://www.ctri.wisc.edu/Home/Glossary.html>

Clinical Decision Support

- A process for enhancing health-related decisions and actions with pertinent, organized clinical knowledge and patient information.
 - Source: http://www.himss.org/ASP/topics_clinicalDecision.asp

Consent Management:

- Giving patients appropriate control over their personal health information and how it is collected, used, and shared.
 - Source: https://www.ccim.on.ca/Documents/CPF/Consent_Management_Implementation_guide_v1.1_20110602_CPF.pdf

Core Data Elements

- Specific clinical measures that, when viewed together, permit a robust assessment of the quality of care provided in a given focus area.
 - Source: <http://www.rwjf.org/qualityequality/glossary.jsp>

Community-based Organization

- A public or private nonprofit (including a church or religious entity) that is representative of a community or a significant segment of a community, and is engaged in meeting human, educational, environmental, or public safety community needs.
 - Source: <http://nnlm.gov/sea/funding/cbodef.html>

Continuum of Care:

- The provision of coordinated healthcare services that encompass preventive care, primary care, acute care, chronic care, rehabilitative care and supportive care so as to maximize the value of services received by patients.
 - Source: <http://www.stonybrookmedicalcenter.org/patientcare/healtheducation/glossary#C>
 -

Dietician

- Individuals that plan food and nutrition programs, supervise meal preparation, and oversee the serving of meals.
 - Source: <http://www.bls.gov/oco/ocos077.htm>

Downside Risk

- Spending that exceeds a target expenditure.
 - Source: <http://www.commonwealthfund.org/~media/Files/Publications/Fund%20Report/2011/Jul/1530Delbancopromisingpaymentreformrisksharing%202.pdf>

Electronic Health Record(EHR)

- A computerized medical file that contains the history of a patient's medical care.
 - Source: <http://www.rwjf.org/qualityequality/glossary.jsp>

Emergency Care

- Evaluation and treatment of an illness, injury, or condition that needs immediate medical attention in an emergency room.
 - <http://www.healthcare.gov/glossary/e/emergency-room.html>

eTool:

- Health informatics tools that help patients and consumers make decisions about screening and treatment. These tools provide treatment- and disease-specific health information to patients, especially when facing choices among ways to treat and manage their health conditions.
 - Source: <http://www.ahrq.gov/research/rtisumm.htm>

Fee-for-Service (FFS)

- A method of paying healthcare providers for individual medical services rendered where a provider bills for each patient encounter or service.
 - Source: <http://www.aarc.org/advocacy/resources/glossary.html>

Global Payment

- A single per-member per-month payment is made for all services delivered to a patient, with payment adjustments based on measured performance and patient risk.
 - Source: http://www.rand.org/content/dam/rand/pubs/technical_reports/2011/RAND_TR841.pdf

Health and Human Services (HHS):

- The United States government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves.

- Source: <http://www.hhs.gov/about/>

Health Information Exchange (HIE)

- The electronic movement of health-related information among organizations according to nationally recognized standards
 - Source: http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_10741_84813_3_0_0_18/10_2_hit_terms.pdf

Health Information Technology (health IT)

- The use of computers, software programs, electronic devices, and the Internet to store, retrieve, update, and transmit information about patients' health.
 - Source: <http://www.rwjf.org/qualityequality/glossary.jsp>

Healthcare Literacy

- The degree to which individuals have the capacity to obtain, process, and understand basic health information, needed to make appropriate health decisions
 - Source: <http://www.health.gov/communication/literacy/>

Healthcare Provider

- Provider of medical or health services and any other person or organization who furnishes, bills, or is paid for healthcare in the normal course of business.
 - Source: <http://www.hipaa.com/2009/05/the-definition-of-health-care-provider/>

Healthcare Proxy

- A document in which an individual appoints someone else to make healthcare decisions on his behalf if he becomes physically or mentally incapacitated or unable to communicate with medical professionals
 - Source: <http://www.invesco.com/portal/site/us/menuitem.b69c4947bbe878dc3e5669j43acd8fba0/#H>

Health Insurance Portability and Accountability Act of 1996 (HIPAA)

- The HIPAA Privacy Rule provides federal protections for personal health information held by covered entities and gives patients an array of rights with respect to that information.
 - Source: <http://www.hhs.gov/ocr/privacy/hipaa/understanding/srsummary.html>

HITECH Act:

- The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009, was signed into law on February 17, 2009, to promote the adoption and meaningful use of health information technology.
 - Source: <http://www.hhs.gov/ocr/privacy/hipaa/administrative/enforcementrule/hitechenforcementifr.html>

Homecare

- Healthcare services and supplies a doctor decides you may get in your home under a plan of care established by your doctor.
 - Source: <http://www.healthcare.gov/glossary/h/homehealthcare.html>

Home Health Aide

- Individuals that provide essentially the same care and services as nursing assistants, but they assist people in their homes or in community settings under the supervision of a nurse or therapist. They may also perform light housekeeping tasks such as preparing food or changing linens.
 - Source: <http://www.directcareclearinghouse.org/download/NCDCW%20Fact%20Sheet-1.pdf>

Hospice

- Facilities or services which are especially devoted to providing palliative and supportive care to the patient with a terminal illness and to the patient's family.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68006738>

Hospital

- Institutions with an organized medical staff which provide medical care to patients.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68006761>

Information System:

- A set of interrelated components work together to collect, retrieve, process, store and disseminate information for the purpose of facilitating planning, control, analysis, coordination and decision-making in business and other organizations.
 - Source: healthit.hhs.gov/portal/server.pt/...0...0.../10_2_hit_terms.pdf

Interoperability

- The ability of health information systems to work together within and across organizational boundaries.
 - Source: http://www.himss.org/ASP/topics_integration.asp

Insurance:

- Financial protection against all or part of the medical care costs to treat illness or injury. Includes traditional fee-for-service health plans, preferred-provider health plans, health maintenance organizations (HMO's), commercial Medicare supplements, and other health insurance.
 - Source: <http://www.health.state.mn.us/clearinghouse/glossary.htm>
 - Source: <http://www.bls.gov/cex/csxgloss.htm>

Longitudinal View of Care

- Continuous and comprehensive observation or examination of a patient's health and medical treatments over an extended period of time that includes preventive care and care coordination.
 - Source: Saultz, J.W. (2003). Defining and measuring interpersonal continuity of care. *Annals of Family Medicine*. 1(3): 134-143.

Long-Term Care

- Services that help people with their medical and non-medical needs over a period of time
 - Source: <http://www.medicare.gov/Glossary/l.html>

Managed Care

- An approach to health system reform in which health plans compete to provide health insurance coverage for enrollees. The system relies on market incentives (namely more subscribers and revenue) to encourage healthcare plans to restrain the cost of care.

Typically, enrollees sign up with a purchasing entity that buys the services of competing health plans. Enrollees are provided a choice among the contracting health plans.

- Source: <http://www.aarc.org/advocacy/resources/glossary.html>

Meaningful Use

- Medicare and Medicaid EHR Incentive Programs for providers requiring proof of the use of certified EHR technology in ways that can be measured significantly in quality and in quantity.
 - Source: https://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp

Medicaid

- A joint federal and state insurance program for eligible individuals with limited income and resources
 - <http://www.medicare.gov/Glossary/m.html>

Medical Record History:

- The documentation of a patient's past medical conditions and care.
 - Source:
<http://people.westminstercollege.edu/students/ncb0708/Program%20Files/FA%20Davis/Fundamentals%20of%20Nursing%20ESG/glossary/m.htm>

Medicare

- The federal health insurance program for people who are age 65 or older, certain younger people with disabilities, and people with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a transplant, sometimes called ESRD).
 - <http://www.medicare.gov/Glossary/m.html>

Mental Health Professional

- A licensed individual, including psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists, who provides counseling interventions designed to facilitate individual achievement of human development goals and remediate mental, emotional, or behavioral disorders, and associated distresses which interfere with mental health and development.
 - Source:
<http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/mentalhealthhpsaguidelines.html>

National Committee for Quality Assurance:

- An organization that provides information to allow purchasers and consumers of managed healthcare to compare plans.
 - Source: <http://www.ct.gov/oha/cwp/view.asp?a=2277&q=299920>

National Quality Forum (NQF):

- The National Quality Forum (NQF) is a nonprofit organization that operates under a three-part mission to improve the quality of American healthcare by: building consensus on national priorities and goals for performance improvement and working in partnership to achieve them; endorsing national consensus standards for measuring and publicly reporting on

performance; and promoting the attainment of national goals through education and outreach programs.

- Source: http://www.qualityforum.org/About_NOF/About_NOF.aspx

National Quality Strategy (NQS):

- An initiative to increase access to high-quality, affordable healthcare for all Americans established by the Affordable Care Act and directed by the Department of Health and Human Services that pursues three broad aims at the local, state, and national level to provide better care, foster healthy people/communities, and ensure affordable care.
 - Source: <http://www.ahrq.gov/workingforquality/nqs/>

Nurse Practitioner (NP)

- A registered nurse specially educated and licensed to provide primary and/or specialty care.
 - Source: <http://www.health.state.mn.us/clearinghouse/glossary.htm>

Palliative Care

- Care provided primarily to relieve symptoms of a disease or condition rather than for curative purposes
 - Source: <http://www.va.gov/healtheligibility/Library/Glossary/#p>

Patients

- Individuals participating in the healthcare system for the purpose of receiving therapeutic, diagnostic, or preventive procedures
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68010361>

Patient-Centered Care

- A healthcare model in which patients become active participants in their own care and receive services designed to focus on their individual needs and preferences, in addition to advice and counsel from health professionals
 - Source: <http://www.ahrq.gov/qual/ptcareria.htm>

Patient-Centered Medical Home

- A team-based model of care led by a personal physician who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes
 - Source: http://www.acponline.org/running_practice/pcmh/understanding/what.htm

Patient Engagement

- Process through which an individual participates in his or her own healthcare by harmonizing robust information and professional advice with their own needs, preferences and abilities in order to prevent, manage, and cure disease.
 - Source: Center for Advancing Health paper entitled, "A new definition of patient engagement: what is engagement and why is it important", http://www.cfah.org/pdfs/CFAH_Engagement_Behavior_Framework_2010.pdf

Patient Protection and Affordable Care Act:

- The Patient Protection and Affordable Care Act (ACA) was signed into law on March 23, 2010. Essentials of ACA include: 1) a mandate for individuals and businesses requiring as a matter of law that nearly every American have an approved level of health insurance or

pay a penalty; 2) a system of federal subsidies to completely or partially pay for the now required health insurance for about 34 million Americans who are currently uninsured – subsidized through Medicaid and exchanges; 3) extensive new requirements on the health insurance industry; and 4) numerous regulations on the practice of medicine.

- Source: Laxmaiah Manchikanti, David Caraway, Allan T. Parr, Bert Fellows, and Joshua A. Hirsch. (2011). Patient Protection and Affordable Care Act of 2010: Reforming the Health Care Reform for the New Decade. *Pain Physician Journal*. 14: 35-67.

Pay-for-Performance:

- Health-care payment systems that offer financial rewards to providers who achieve, improve, or exceed their performance on specified quality, cost, and other benchmarks. Most approaches adjust aggregate payments to physicians and hospitals on the basis of performance on a number of different measures. Payments may be made at the individual, group, or organizational level. Performance may be measured using benchmarks or relative comparisons. Generally, there are three types of performance measures: structure, process, and outcome.
 - Source: <http://www.massmed.org/AM/Template.cfm?Section=Home6&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=30254>.

Payer

- A public or private organization that pays for or underwrites coverage for healthcare expenses
 - Source: <http://www.ohanet.org/Glossary>

Personal Health Record

- An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual.
 - Source: The National Alliance for Health Information Technology Report to the Office of the National Coordinator for Health Information Technology on Defining Key Health Information Technology Terms, http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_10741_848133_0_0_18/10_2_hit_terms.pdf

Pharmacist

- A healthcare professional who is qualified to prepare and dispense medicinal drugs.
 - Source: <http://www.diabetes.ca/diabetes-and-you/what/dictionary/>

Physician

- Individuals licensed to practice medicine. This is inclusive of primary care and specialty care.
Source: <http://www.ncbi.nlm.nih.gov/mesh/68010820>

Physician Assistant (PA)

- Persons academically trained, licensed, or credentialed to provide medical care under the supervision of a physician. The concept does not include nurses, but does include orthopedic assistants, surgeon's assistants, and assistants to other specialists.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh?term=physician%20assistant>

Point of Care

- The time and place of care being given to the patient, from the healthcare provider.
 - Source: <http://www.trimarkpublications.com/products/Point-of-Care-Diagnostic-Testing-World-Markets.html>

Preventive Care

- Healthcare to prevent illness or detect illness at an early stage, when treatment is likely to work best.
 - Source: <http://www.medicare.gov/Glossary/p.html>

Primary Care

- Primary care providers include doctors, nurses, nurse practitioners, and physician assistants. They often maintain long-term relationships with patients, advising and treating them on a range of health related issues. They may also coordinate a patient's care with specialists.
 - Source: <http://www.healthcare.gov/glossary/p/primary-care.html>

Private Insurance

- Coverage of medical expenses by a health plan provided through an employer or union, or purchased by an individual from a private health insurance company; includes all forms of health insurance that are not funded by the government.
 - Source: <http://www.census.gov/hhes/www/hlthins/methodology/definitions/cps.html>

Private Pay

- The ability of a person to pay the cost of services with personal income or assets.
 - Source: <http://www.loretto-cny.org/for-our-family-and-friends/elder-care-definitions/>

Quality Measures:

- Performance measures related to the care of the patient that focus on patient-level health outcome and experience measures that reflect an ACO's ability to deliver patient-centered care that is well coordinated across providers and improves outcomes for patients.
 - Source: Elliott S. Fisher, Mark B. McClellan, John Bertko, Steven M. Lieberman, Julie J. Lee, Julie L. Lewis, and Jonathan S. Skinner. (2009). Fostering Accountable HealthCare: Moving Forward In Medicare. *Health Affairs*. 28(2): 219-231.

Regional Extension Centers

- Organizations that support and serve healthcare providers to become meaningful users of electronic health records (EHRs).
 - Source: http://healthit.hhs.gov/portal/server.pt/community/hit_extension_program/1495/home/17174

Regional Health Information Organization (RHIO)

- A health information organization that brings together healthcare stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.

- Source: http://www.healthit.hhs.gov/portal/server.pt/...0...0.../10_2_hit_terms.pdf

Rehabilitation

- Treatment used after a serious injury, illness or surgery, that helps the individual regain strength, relearn skills, or find new ways of doing activities. Can include any combination of physical therapy, occupational therapy, speech-language therapy, and treatment of pain.
 - Source: <http://www.nlm.nih.gov/medlineplus/rehabilitation.html>

Rehabilitation Hospital

- Facilities which provide programs for rehabilitating the mentally or physically disablement of individuals.
 - Source: <http://www.ncbi.nlm.nih.gov/mesh/68012047>

Risk-based Model:

- The use of administrative claims data to predict healthcare costs and patient outcomes with the goal of reducing the cost, while improving the management and delivery, of care.
 - Source: <http://www.academyhealth.org/files/awards/Risk-BasedPredictiveModeling.pdf>

Shared Risk:

- Payment models in which providers share in a portion of the savings they achieve (upside), but are also at risk for a portion of spending that exceeds a target (downside).
 - Source: <http://www.commonwealthfund.org/~media/Files/Publications/Fund%20Report/2011/Jul/1530Delbancopromisingpaymentreformrisksharing%202.pdf>

Skilled Nursing Facility

- Skilled nursing care and rehabilitation services provided on a continuous, daily basis, in a skilled nursing facility. Examples of skilled nursing facility care include physical therapy or intravenous injections that can only be given by a registered nurse or doctor.
 - Source: <http://www.healthcare.gov/glossary/s/skilled-nursing.html>

Social Worker

- A licensed professional who gives families emotional support, help in adjusting to hospitalization, help planning for hospital discharge, and referral to community resources
 - Source: <http://www.ncchildrenshospital.org/parentinfo/glossary#S>

Sub-acute Care

- Maintenance care for serious medical conditions that are not urgent or life-threatening, typically following a stay in a hospital.
 - Source: <http://www.hr.ucdavis.edu/worklife-wellness/Life/eldercare/elder-care-glossary>

Telemonitoring:

- Transfer of physiological data such as blood pressure, weight, electrocardiographic details, and oxygen saturation through telephone or digital cable from home to healthcare provider.
 - Source: Clark RA, Inglis SC, McAlister FA, Cleland JGF, Stewart S. Telemonitoring or structured telephone support programmes for patients with chronic heart failure: systematic review and meta-analysis. *BMJ*. 2007; **334**:942

Therapist

- A person trained in methods of treatment and rehabilitation other than the use of drugs or surgery.
 - Source: <http://www.merriam-webster.com/medical/therapist>

Workflow

- The set of clinical and administrative tasks that must be handled by more than one person in order to oversee the care of a person. For example, electronic health records are increasingly used to redesign work flows and improve the quality and value of care.
 - Source: Tordal, P., Han, E. S., and Scholle, S. H. (2010). Easing the adoption and use of electronic health records in small practices. *Health Affairs*. 29(4): 668-675.

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