



Achieving Accountable Care:

Essential Population Health
Management Tools for ACOs

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Care Continuum Alliance
701 Pennsylvania Ave. N.W., Suite 700
Washington, D.C. 20004-2694
(202) 737-5980

info@carecontinuum.org

www.carecontinuum.org

Executive Summary

Accountable care organizations (ACOs) are widely viewed as one solution to the fragmentation, misaligned financial incentives, patient dissatisfaction, rising costs and suboptimal health outcomes evident in our current health care delivery system. If ACOs can appropriately balance fee-for-service income, achieve the “Triple Aim” – better care experiences, population health improvement and lower per-capita costs –and reduce claims expenses enough to allow gainsharing, health delivery in the United States could be transformed. This was the visionary thinking behind the Patient Protection and Affordable Care Act (PPACA, P.L. 111-148), which has authorized the Secretary of Health and Human Services to pilot ACOs nationwide.¹

In response, clinicians, hospitals and other providers with an eye toward becoming integrated as ACOs are racing toward investment in two types of care initiatives: health information technology (HIT), including electronic health record (EHR) systems, along with associated information exchanges; and incorporation of affiliated primary care practices as patient centered medical homes (PCMH).

This toolkit describes additional population health management strategies and resources to foster comprehensive, successful accountability for the clinical, economic and patient experiential outcomes of an attributed population. It begins with a review of the complementary and synergistic care approaches of ACOs and population health management strategies. Finally, this resource guide specifically describes each of the components of population health management and illustrates how these components increase the reach and effectiveness of ACOs in the pursuit of the Triple Aim.

This toolkit describes *additional* population health management strategies and resources that can foster comprehensive, successful accountability for the clinical, economic and patient experiential outcomes of an attributed population. After reviewing how ACOs and the care approaches of population health management are complementary and synergistic, this resource guide specifically describes each of the components of population health management and how they can increase the reach and effectiveness of ACOs in their pursuit of the Triple Aim and profitability.

These resources can be viewed as additional *tools* that can round out the critically important investments ACOs already are making in HIT and the PCMH. Briefly, these multiple tools – outlined in a checklist fashion below – fall into four broad categories:

1. health risk assessments and predictive modeling, which create actionable information enabling the application of physician and case management services for patients with the greatest needs and who are at highest risk;
2. mobile, connected, empowered and flexible non-physician-based care and care management that fully capitalizes on advantages of clinical teaming and shared decision-making;
3. maximized data liquidity and data analytics to fully leverage health information technology to achieve insights and understand the underlying drivers of outcomes in an attributed population; and
4. using the intellectual and financial capital necessary to accept various levels of risk transfer through health insurer contracting.

This toolkit will guide health system leaders to specific resources and actions that may also foster physician collaboration with a wide variety of population health management provider resources to help ACOs build upon existing information technology and medical home infrastructure. Whether ACOs choose to build or buy, these additional tools will be critical to the successful assumption of full population-based accountability by the statutory starting date of Jan. 1, 2012. The toolkit also is intended as a resource for policymakers and regulators as they continue to develop guidance and strategies to continue the transformation of our health care system to one that focuses on achieving the Triple Aim goals of better health, better care and lower costs.

The Population Health Management Resource Tool List for Accountable Care Organizations

- **Health Risk Assessment (HRA):** A patient survey that mathematically estimates condition-specific, as well as global, risk. It should be understandable by low-level readers and available in multiple languages, comply with federal privacy and genetic non-discrimination laws, use participation incentives, leverage psychological modeling, adapt to multiple media formats and be available to a primary care physician and the patient. This facilitates ACO program development and early identification of patients at greatest risk.
- **Predictive Modeling:** Statistical and artificial intelligence approaches to using multiple, disparate data sources, such as health insurance claims, to associate past and current variables with future risk. Like the HRA, predictive modeling facilitates ACO program development and early identification of patients at greatest risk. It also can support risk adjustment.
- **Evidence-based guidelines:** Easily accessible and flexible clinical summaries of the best approaches to conditions at the organizational, community and provider levels. Guidelines address care gaps and unnecessary variation and should be made available to all members of the care team and facilitate monitoring of clinical performance.
- **Shared Decision-Making (SDM):** This is the organized reliance on the patient to choose among care options outlined in evidence-based guidelines. Numerous studies document that SDM can reduce the likelihood of unwarranted care in preference-sensitive conditions and reduce unwarranted variation.
- **Multiple patient communication channels:** In addition to face-to-face and telephonic interactions with patients, other options include asynchronous communication (such as texting and e-mail), as well as social media.
- **Care Management:** A package of non-physician-led and physician-supervised interventions that assist patients and support systems in managing medical conditions and related psychosocial problems. Care managers use all available “high tech” communication channels to support physicians, advocate on behalf of guidelines and promote shared decision-making.

- **Health Coaching:** The practice of health education and health promotion within an interactive and individualized context, to enhance the well-being of individuals and to facilitate the setting and achievement of personal health and care-related goals. It is typically performed by a health professional of some type (e.g. nurse, dietitian, pharmacist, respiratory therapist, social worker). Health coaching seeks to empower individuals to actively and optimally manage health, risk factors and medical conditions in the short and long terms and in accordance with personal preferences based on accurate, evidence-based information. Within a population health management context, it is intended to complement, not replace, physician-patient interaction.
- **Case Management:** This is defined as the collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes. This is the “high touch” engagement of patients who are at high risk in a physician-supervised care plan.
- **Shared Services Model:** This is the centralized coordination of care and case management resources that can be more efficiently shared across multiple primary care sites.
- **Health Information Technology Data Liquidity:** The movement of data within an enterprise-level hub that facilitates the collection, analysis and use of information at the individual patient, the clinical work unit, care management and organization levels that also supports the meaningful use of electronic health records (EHRs) and end-use medical devices.
- **Telemonitoring Capacity:** A care management-supported stream of physiologic data can enable pre-emptive communication with patients about early warning signs, treatment adjustments and early access to appropriate medical care.
- **Attribution management:** This is the ongoing ability to assess the observed versus expected clinical outcomes measures for an assigned population that can, in turn, inform program adjustments and quality improvement activities.
- **Risk-assumption:** ACOs will need resources to reconcile the cost of needed investments in population health management interventions with the likelihood of future economic gain in government and commercial health plan contracting. In addition to this, ACOs will need the resources that allow the assumption of both upside and downside risk and a variety of payment methodologies.
- **Population Health Management (PHM) Service Provider Contracting:** This could form the basis of outsourcing some or all of the tools described above and would involve a variety of feeds, performance guarantees and risk-based contracting, with or without corridors.
- **Evaluation Methodologies:** A suite of concurrent evaluation tools are available that can help ACOs understand outcomes, while simultaneously providing patient services and adjusting programs to better meet the needs of attributed populations.

Acknowledgments

Physician Engagement Committee

Committee Chair:

Dexter Shurney, MD, MBA, MPH
Vanderbilt Medical Center

Committee Members:

Dawn Bazarko, UnitedHealth Care
Jan Berger, MD, Health Intelligence Partners
Gail Croall, MD, CareSource Management Group
James Cross, MD, Aetna
Jeffrey Davis, MD, Kaiser Permanente Health Plan Inc
Raymond Fabius, MD, FACPE, Thomson Reuters
Richard Feifer, MD, MPH, FACP, Aetna
Donald Fisher, PhD, CAE, American Medical Group Association
Sharon Frazee, PhD, Walgreen Co.
Laurie Greenberg, Medco Health Solutions
Joseph Kvedar, MD, Partners HealthCare, Inc.
Richard Lachiver, MD, MPH, FACPM, Healthways
Harry Leider, MD, MBA, Ameritox, Ltd.
Harlan Levine, MD, Towers Watson

Jeffrey Levin-Scherz, MD, MBA, Towers Watson
Thomas Morrison, BSN, NaviNet Inc.
Jeremy Nobel, MD, MPH, Harvard School of Public Health & Northeast Business Group on Health
Gordon Norman, MD, MBA, Alere
Elyse Pegler, Health Dialog
Andy Perez, MD, MBA, FACEP, Healthways
Emad Rizk, McKesson Health Solutions
Carola Roeder, Partners HealthCare, Inc.
Eric Rose, MD, Microsoft Corporation
Tehseen Salimi, MD, MHA, sanofi-aventis
Christobel Selecky, ZOLO Healthcare Solutions
Jaan Sidorov, MD, FACP, CMCE
Jim Springrose, MD, OptumHealth
David Veroff, MPP, Health Dialog
Marshall Votta, NaviNet Inc.
Paul Wallace, MD, Kaiser Permanente Health Plan Inc
Randall Williams, MD, FACC, Pharos Innovations

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Part I: Toolkit Overview

The purpose of this toolkit is to identify and define the internal and external resources available to support fully functioning accountable care organizations (ACOs). Further, this toolkit will outline the synergies between ACOs and population health management strategies in four core components of the ACO model:

- Population and health assessment
- Clinical and care management
- HIT infrastructure
- Operational management

ACOs have been identified as one approach to address the lack of coordination, poor clinical outcomes, rising costs and consumer dissatisfaction with the U.S. health care delivery system. Thanks to incorporating a mix of system changes and financial incentive, it is hoped that ACOs will achieve the Triple Aim: better care, better health and reduced costs.

Many providers desire to transform practice infrastructure, workflows, information technologies and partnerships to better meet the diverse needs and desires of various populations. This has led to innovative collaborations that underscore the patient health support benefits additional staff and capabilities can provide the physician, both within and beyond the practice walls. As new models, such as the patient-centered medical home (PCMH) and ACOs, evolve to focus more attention on outcomes of care, population health management (PHM) will continue to influence these collaborative models by offering a suite of services that complement the core, patient-centered, direct-care model. The population health management frameworks on pages 10 to 46 of this report display this collaborative model for all care settings.

The aligned strategies that exist within both the ACO and population health management models have been used in PHM for more than a decade. These strategies represent an important opportunity to maximize patient outreach, engagement and coaching that, in turn, promote self-care, increase quality and avoid unnecessary claims expense. These PHM strategies closely align with the delivery of primary care, including the PCMH model. In addition, these features of population health management are largely independent of location or level of care and are adaptable to global payment systems.

This toolkit is organized first by a definition of the core components of the ACO model, then by a review of PHM model components and a detailed examination of the four key PHM strategies identified above. Included within each area is an overview of the resource, its role in the ACO delivery model and case study examples. Appendices provide additional resources and references for collaboration and partnership.

What Is Population Health Management?

The Care Continuum Alliance defines population health management (PHM) as a proactive, accountable and patient-centric population health improvement approach centered on a physician-guided health care delivery system and designed to enable informed and activated patients to address both illness and long-term health.² This care approach is predicated on an emerging body of evidence that demonstrates that managing health requires the active, integrated involvement of all health care professionals who are coordinated with the patient, caregivers and families in a fully connected health care system. As a result, care providers are members of highly functioning teams that are focused on proactive, coordinated and quality health care.

Population health management embraces three core principles:

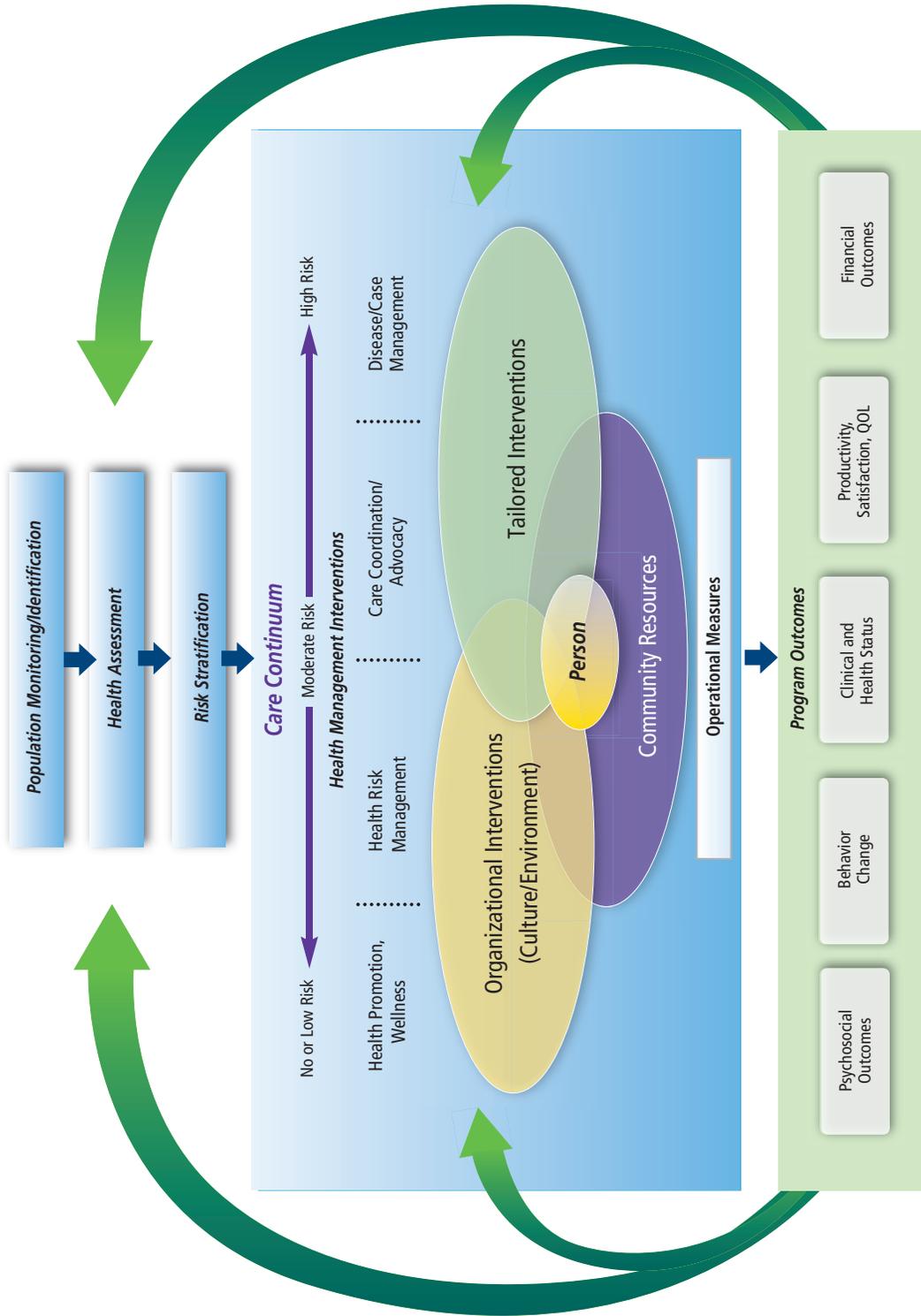
1. the central care delivery and leadership roles of the primary care physician;
2. the critical importance of patient activation, involvement and personal responsibility; and
3. the patient focus and capacity expansion of care coordination provided through wellness and chronic care management programs.

The PHM Conceptual Framework in Figure 1 outlines the key components of PHM delivery to all members of a population, regardless of setting.

PHM begins with the identification of a *patient population and flows through the entire process of delivering interventions, ending with concurrent measurement*. Both health assessment and risk stratification are key strategies within the PHM framework. These strategies enable providers to understand patient needs so that appropriate care strategies can be offered based on risk level. Interventions, from health promotion to risk modification to care coordination to active care management, then can be provided to subpopulations. All these PHM programs rely on three key care principles ultimately focused on the patient: Care must be organized to account for all cultural and environmental determinants of health status; health care provider interventions, particularly those of the primary care physician, must be fully supported; and community resources must be fully accessed.

This toolkit demonstrates that the tools used in PHM will serve as a key resource in the creation of successful ACOs. Each of the components and strategies outlined in the framework are described in great detail later in the toolkit.

Figure 1: Population Health Management Conceptual Framework



Source: Outcomes Guideline Report Volume 5. Copyright 2010, Care Continuum Alliance

What is an Accountable Care Organization?

The concept of an “Accountable Care Organization” (ACO) is outlined in the Patient Protection and Affordable Care Act (ACA) of 2010.³ This landmark health care reform law defines an ACO as “an organization of health care providers that agrees to be accountable for the quality, cost and overall care of Medicare beneficiaries who are enrolled in the traditional fee-for-service program who are assigned to it.” ACOs are widely regarded as a centerpiece of the ACA’s intent to reform the health care system toward more patient-centered, outcomes-based delivery that will fulfill the “Triple Aim” of improving the experience of care, improving the health of populations and reducing the per capita costs of health care.^{4, 5}

The ACA identified some types of organizations that may become ACOs, including:

- 1) physicians and other professionals in group practices;
- 2) physicians and other professionals in networks of practices;
- 3) partnerships or joint venture arrangements between hospitals and physicians/professionals;
- 4) hospitals employing physicians/professionals; or
- 5) other organizations that the Secretary of Health and Human Services may determine appropriate.

The U.S. Department of Health and Human Services, tasked with implementing the ACO model and piloting other “shared savings” programs, continues to seek stakeholder input in the issuance of regulations that will guide entities seeking to evolve to ACOs. It is expected that, to qualify for Medicare contracting as an ACO, an organization will need to have a formal legal structure that can receive and distribute shared savings, as well as manage clinical and administrative systems; have a sufficient mass of primary care providers; care for at least 5,000 beneficiaries; have “sufficient information” about providers; promote, support and report quality and cost measures; and practice patient-centered care. The ACO “shared savings” program is slated to begin Jan. 1, 2012.¹

Policymakers and others have looked to many sources for initial guidance and information on how best to implement this important reform law component. One important source has been the National Committee for Quality Assurance (NCQA). A highly regarded and recognized accrediting body, NCQA convened a workgroup of industry experts to develop draft standards and certification criteria for emerging ACOs. In preliminary drafts of ACO accreditation materials, NCQA has defined ACOs as “provider-based organizations that take responsibility for meeting the health care needs of a defined population with the goal of simultaneously improving health, improving patient experience and reducing per capita costs.” The draft NCQA standards emphasize the presence of a strong primary care base, sufficient access to specialty care, alignment of clinical with financial incentives and adequate administrative infrastructure to achieve the Triple Aim. The NCQA is likely to emphasize the use of validated clinical measures, patient experience and costs likewise based on the Triple Aim and that overlap with emerging HIT meaningful use standards.⁶

Similarly, health care consultants, such as Deloitte LLP, have explored key definitions, features and drivers of the emergent ACO model.⁷ Deloitte identified seven key capabilities as important considerations for ACO performance, including:

- strong leadership teams
- expanded governance structures
- expanded clinical management capacity
- operational management capacities
- integrated IT and infrastructure systems to synthesize and leverage data
- risk assessment and identification capabilities
- effectively designed and allocated health care work force.

Many of these capabilities can be found in and leveraged through effective collaborations with population health management providers.

Experts also expect that patient-centered medical homes (PCMHs) will play a prominent role in the delivery of primary care within ACOs. An emerging body of published evidence, combined with real world experience, plus considerable policymaker and provider community enthusiasm, has fueled the nationwide expansion of multiple PCMH pilots by health insurers nationwide.

The PCMH's promise in driving the Triple Aim elements of quality, cost and better patient experience is undeniable. The ACO model has been supported by provider organizations, who view the PCMH as a way to re-energize a specialty, thanks to a number of attractive features, including using a team approach to coordinate patient care. As a result, there is growing recognition that ACOs should adopt medical homes in the creation of a primary care base.^{7, 8, 9, 10}

While the operational definition of what comprises a medical home remains in transition,¹¹ various certification and credentialing entities will need to recognize that the details of physician-non-physician teaming must vary according to the “real-world” circumstances of each clinical setting. In addition, as these physician practices become increasingly allied with ACOs, the challenges involved in the hiring and training of nurse coaches may turn out to be time consuming and expensive. As result, the creation of nurse-based provider teaming at the primary care level may simultaneously be the greatest challenge and opportunity as ACOs grapple with ensuring that patients will have access to a fully functional medical home.

Understanding the Synergy and Opportunities between ACOs and Population Health Management Strategies

As described above and envisioned in the ACA and numerous publications, ACOs share many population health management ideals and strategies. Both embrace the use of patient-centered and coordinated systems of care that rely on team-based primary care. Further, both models devote considerable resources to measuring and optimizing clinical outcomes, cost and the patient experience with health care. Neither seeks to replace the diagnosis and treatment by providers but, rather, create *systems* of support and patient coordination that ultimately enhance the full potential of physician-led diagnosis and treatment.

It also is clear that both ACOs and PHM strategies bring different strengths and have different challenges in the drive to promote high-value health care. ACOs will benefit from providers who have established and rich patient relationships that can impact cost drivers, while simultaneously adopting a more rationalized and standardized approach to care. To be successful, ACOs will be required to reach outside traditional care settings, scale care interventions and simultaneously assess outcomes. A viable resource for these key ACO goals, PHM strategies have been widely embraced by health insurers and employers and utilize a suite of tools to stratify population risk, expand appropriate access to care and repeatedly measure outcomes.

Table 1 contrasts the strengths and opportunities of ACOs and PHM strategies and demonstrates the complementary relationship of ACOs and PHM strategies. In other words, the strengths of one readily compensate for the shortcomings of the other.

Table 1: Strengths and Opportunities of ACOs and PHM Strategies

Accountable Care Organization		Population Health Management	
Strengths	Opportunities	Strengths	Opportunities
Named in federal legislation and high level of policymaker and provider support	Uncertain track record in usual care settings	More than 10 years of ready acceptance by health insurers and employers	Need to achieve greater provider confidence
Face-to-face care interventions to drive patient care	Limited reach outside traditional care settings	Informatics capabilities to risk stratify populations and target a spectrum of interventions	Endorsement by a trusted primary care provider often is lacking
Established relationships with existing patients	Resources needed to scale for full population accountability	Access to care services that can extend reach and expand access	Often implemented in parallel fashion to traditional care delivery models
High potential to implement standardized and systemwide approaches to care	Lack of tools to assemble, summarize and display population-based outcomes	Years of experience in concurrent evaluation methodologies	Data that informs programs for the largest cost and quality drivers can go unused

* Adapted with permission from a presentation titled, "Extending the Reach of Providers to Enable Emerging Models of Care," Christopher Behling, 2011. Accessed April 22, 2011, at http://www.ehcca.com/presentations/pophealthsummit1/behling_ms3.pdf

How can nascent ACOs take advantage of the strengths and demonstrated expertise of PHM strategies? Employers and health insurers recognize that initiatives that risk stratify covered populations to target interventions, expand access to appropriate levels of care and rely on continuous measurement feedback loops have succeeded in improving care quality, health and costs for covered populations. Accordingly, a provider organization that adopts these strategies is far more likely to expand its reach, achieve full population accountability, leverage fully information technology and garner buyer support.

Figure 1, page 10, outlines the essential elements that comprise a fully functioning PHM approach to care that can be adopted by ACOs. “Health care providers” or “HCPs” identified in the framework are envisioned to be any type of provider, including hospitals, physicians, pharmacists, case managers, ancillary staff.

These PHM strategies begin with the *identification of a population, followed by health assessment and risk stratification*. Patients are then enrolled and engaged, using a communication strategy and tailored suite of interventions. Last, impact is evaluated. This creates a feedback loop, also included, that informs programmatic improvement. Each of these components is described in detail below.

Health Assessment

“*Health Assessment*” goes beyond a basic health risk assessment and suggests that assessment of health can include additional factors other than those traditionally included in the health risk domain. Such factors can include, but are not limited to, environment; financial issues; psychosocial influences; and outcomes, such as self-efficacy, resilience and optimism.

Health often is assessed using questionnaires to gather respondents’ self-reported information about current health behaviors, status regarding recommended screening and preventive services, safety precautions and other potential health risks. Other sources of health risk information include medical claims and pharmacy data and, if available, data on laboratory results for recommended tests. While these methods are among those commonly used, this is by no means a comprehensive list of possible health assessment approaches.

Risk Stratification

The next step in the PHM process is to stratify individuals into meaningful categories for personalized intervention targeting, using information collected in the health assessments. Stratification should include categories that represent the continuum of care in the population. While some organizations use complicated mathematical proprietary algorithms to predict risk, others use a simple count of risks to classify individuals. It is not our intent to prescribe how risk stratification should be conducted, but to emphasize the importance of having some type of stratification in place to help align individuals with appropriate intervention approaches and maximize the impact of the program.

Health Management Interventions

The *Health Management Interventions* section of the framework includes the *Participant Health Continuum*, along which many program components and interventions can be placed. The *Organizational Interventions* box highlights the culture and environment within which many health management programs are delivered. To maximize the impact of a program or intervention, it is important to consider the environment of participants and, whenever possible, employ interventions designed to create a supportive environmental and organizational culture. The framework also reflects the partial overlap between *Organizational Interventions* and the *Tailored Interventions* to represent that these interventions often form an integral part of the culture and environment of organizations, yet may be delivered in other ways, as well.

While the list of program types in the *Tailored Interventions* box is not exhaustive, Health Promotion, Wellness and Preventive Services are designed to help healthy individuals stay healthy. Health Risk Management programs help people manage existing health risks and Care Coordination/Advocacy represents efforts to help people understand, navigate, manage and coordinate available health care resources. Health Coaching is the practice of health education and health promotion within an interactive and individualized context, to enhance the well-being of individuals and to facilitate the setting and achievement of personal health and care-related goals. Chronic condition management programs help chronically ill individuals better manage existing conditions.

Both enrollment and engagement strategies, as well as communication/intervention modalities, are embedded within the health management intervention strategies box.

Enrollment/Engagement Strategies

Once individuals in a population are identified and stratified, proactive strategies should be utilized to enroll and engage people regardless of to whom or where interventions and services are being delivered. It is becoming increasingly evident that effective enrollment and engagement is key to impacting the health of a population. If the participation rate is low, there is little chance any intervention will have a measurable impact on the population.

Communication/Intervention Modalities

A variety of communication or intervention modalities should be offered to allow for efficient intervention and program implementation and/or to accommodate the preferences and technological abilities of program participants and patients. Some individuals may prefer to receive all communications by mail, while others might want to participate through an online program. In addition, these modalities can be used to complement provider face-to-face interaction. The PHM framework includes social media as a delivery modality to reflect the increasing popularity and promise of this means of health education and support.

Matching intervention modalities to the communication preferences of individuals likely will lead to an increased level of program participation and engagement, and ultimately to improved program outcomes.

Program Outcomes

The final element of the PHM framework is an outcomes framework. The depiction of Program Outcomes begins by representing the program processes as an early program “outcome.” As previously mentioned, a program can be successful only if it effectively touches a significant number of people in the population, and is most likely to succeed if it operates efficiently. Tracking these process-related “outcomes” is critical to a successful program.

The next link in the outcomes framework represents the implicit hypothesis that the population health management program will impact psychosocial variables that will then drive changes in health behaviors, including self-management and use of screening and preventive services. Improvements in these behaviors will, in turn, have a positive impact on health and clinical outcomes. As outlined in the outcomes section of the PHM framework, quality of life, productivity and satisfaction are overlapping constructs, all of which will be positively impacted by, and may have a reciprocal positive impact on, participants’ behavioral and health-related outcomes. Finally, the outcomes section of the PHM framework represents that improvements in health behaviors, health and clinical outcomes and productivity will ultimately impact service utilization and financial outcomes.

Outlining a framework for program or intervention outcomes can have several practical applications. It can help systematize the design, implementation and shape of both the evaluation processes and outcomes reporting strategy. Whether the outcomes framework is created before or concurrent with the development of the program, it can help with the conceptualization of the overall program strategy and specific intervention approaches. Careful consideration of the chain of effects that will eventually lead to the ultimate program goal or outcome, and inclusion of those outcomes in the outcomes framework, can identify needed program components designed to impact those outcomes. Additionally, because there are many things that contribute to the financial impact of a program, explicitly outlining the predicted short- intermediate- and long-term outcomes can help stakeholders understand the full range of impacts and the expected time frame for ultimately generating cost savings.

Quality Improvement Process

The final key component of the PHM framework is the representation of the *Quality Improvement Process*. The quality improvement cycle is depicted by the arrows coming from the program outcomes box to both the health management intervention and the health assessment/risk stratification boxes. The cycle of quality improvement in the updated framework includes changes to both interventions and program processes (including assessment, stratification and engagement/enrollment strategies) based on process learnings from operational measures, as well as program outcomes.

INSIGHTS ON SYNERGIES AND OPPORTUNITIES FROM THREE MEDICARE DEMONSTRATIONS

Based on PHM providers' years of experience in pursuing these components in many settings, it is likely that ACOs will need to adopt core PHM components outlined above to achieve a high level of coordinated care for populations. Three Medicare demonstrations offer special insight into the organizational PHM features that lead to success in achieving elements of the Triple Aim that the Centers for Medicare and Medicaid Services (CMS) will seek when it evaluates ACOs:

The Medicare Physician Group Practice Demonstration

This involved 10 group practices (five integrated delivery systems, two free-standing, two academic organizations and one hospital-sponsored provider network) that continued to operate in a fee-for-service environment, but were eligible for bonus payments by meeting quality and cost-reduction targets compared with control groups and targeted expenditures. The bonus consisted of 80 percent of the Medicare savings in excess of 2 percent. All the practices initiated a variety of patient-centered care management interventions that relied on adherence to evidence-based care models and protocols, registries and provider education with data feedback supported by the greater use of HIT and remote patient monitoring. All implemented team-based disease and care management programs that were disease-specific or related to general care coordination, as well as post-discharge home care and palliative care.^{12, 13}

The Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration

The Massachusetts General Hospital (MGH) Care Management Program relied on externally provided primary care-based nurse care managers to achieve substantial and statistically significant claims savings for Medicare beneficiaries. The program's return on investment was calculated to be 2.65 to 1 for MGH's original intervention group and 3.35 for MGH's refresh intervention group. Anticipating that physicians may be apprehensive about the external introduction of additional nursing personnel in busy clinics, MGH piloted having an experienced case manager at one clinic. Using physician feedback from focus groups, it then identified local physician champions, communicated the strong support from MGH leadership and sought to reassure current clinic nurses that their work was being supplemented, not replaced. MGH also enabled the nurses to expedite referrals to additional mental health and pharmacist services, as well as act as patient advocates by being able to access the medical record and generate provider alerts and prompts. The demonstration also provides orientation programs, robust communication (including a dedicated electronic newsletter) and emotional support for the nurses. Nurse recruitment focused on strong clinical skills, critical thinking abilities and the ability to work independently.¹⁴

The Medicare Coordinated Care Demonstration

This showed that nurse-led, face-to-face contacts with patients who were determined to be at medium risk with consumerist interventions designed to engage individuals in care was a powerful care strategy. Helping patients, when possible, avoid the emergency department was a key strategy in reducing unnecessary health care costs. In addition, these autonomous nurses were assigned geographically and by physician, which enabled professional relationships with physicians that played an important role in achieving provider buy-in.¹⁵

These three Medicare demonstrations clearly outline the impact of a variety of interlocking and mutually supportive operational, clinical and care PHM components. Based on the success of these projects, it is clear that these components can serve as important tools that can help ACOs achieve the envisioned potential to improve patient care and health status, while reducing health care costs.

Part II:
Core ACO Components,
Resources and Tools Found
Among PHM Strategies

A. Population and Health Assessment

Assessment of health status and risk stratification of patient panel populations will enable ACOs to target patient support and care interventions and enable them to understand key population segments' needs, disease burdens and cost drivers. Requirements for prospective attribution of patient populations in some payment models will result in heavy emphasis on patient engagement and outreach through care management programs. Understanding who among patient populations can best benefit from such programs is the first crucial step.

Key Learnings in this section:

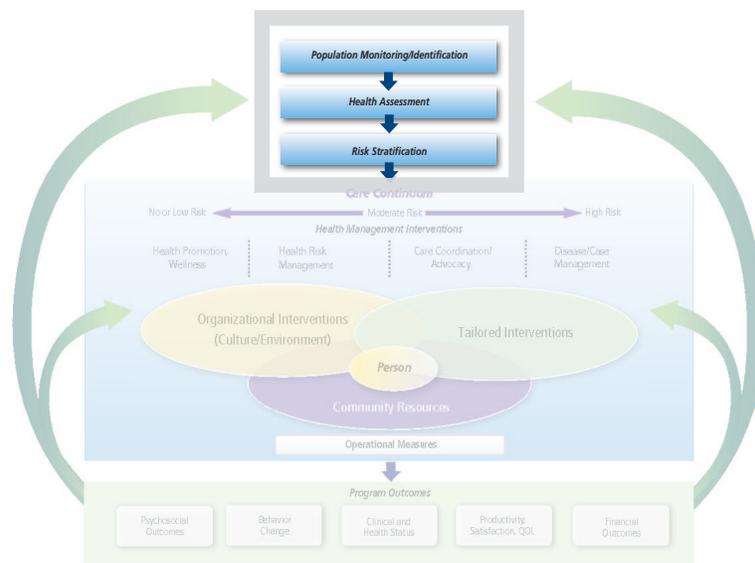
- Understand the role of health assessment.
- Learn common ways health assessments are implemented.
- Identify PHM strategies for health assessment and risk stratification.

Strategies and Tools for ACOs

The health assessment and risk stratification sections highlighted in the PHM framework (Figure 2, below) represent the full span of activities needed to assess a variety of factors that may play a role in determining the health and chronic illness outcomes of a given population. These factors include those within the health risk domain, as well as environmental, financial issues, psychosocial influences and outcomes, which could include self-efficacy, resilience and optimism.

Health status and risk has long been assessed in care settings using questionnaires to gather patients' self-reported information about current health behaviors and perceptions of health, status regarding recommended screening and preventive services, safety precautions and other potential health risks. PHM not only uses this, but other

Figure 2: Population Health Management Conceptual Framework



sources of health information, including medical claims, pharmacy and clinical laboratory data. Once the data is collected, a variety of informatics tools can be used to assess and target a full suite of care intervention opportunities.

Health Risk Assessment Tools

The “health risk assessment” (HRA), otherwise known as a health risk appraisal or health risk survey, is a critical tool for assessing an assigned or attributed population’s health status. It can be defined as any questionnaire that collects epidemiologic and vital statistics data to provide individuals with overall and condition-specific projections of mortality risk, along with recommendations for reducing that risk for the purpose of promoting desirable risk-mitigating changes in health behavior.¹⁶ Taking anywhere from 15 minutes to 45 minutes to complete, responses are weighted and mathematically transformed into numeric expressions of global or condition-specific risk for individuals and aggregated for measurement at the population level.

While surveys that assess a focal area of risk (such as coronary heart disease or breast cancer) are available in the public domain, most HRAs use proprietary language and mathematical weighting algorithms that are only available under license. HRAs typically are written at a low reading level (5th grade), exist in several languages, are confidential and secure, are Health Insurance Portability and Accountability Act (HIPAA) and Genetic Information Nondiscrimination Act (GINA) compliant, give patients incentives for completion and use psychological models, such as readiness to change, motivation, confidence and barriers to change (see Table 2).

Table 2: The Attributes of State-of-the-Art HRAs

Low Reading Level – 5th grade
Culturally appropriate
Available in multiple formats
Available in multiple languages
Linked to consumer-centric incentives
Linked to other databases
Assesses participant motivation for change
Provides timely personalized feedback for participants
Facilitates early referral for individuals at greatest risk
Provides timely population-based summary
Uses “branching logic”
HIPAA compliant
GINA compliant
Informs consumers of confidentiality
Results are shared with a PCMH team

State-of-the-art HRAs have been engineered to adapt to a variety of settings and media. In addition to being collected using pencil and paper, other media are routinely employed, including computer-based, Web-based, interactive voice response and mobile phone. Thanks to a relationship with active patients, ACOs have an important opportunity to use care settings – such as patient waiting rooms – to supplement HRA collection activities. This additional advantage can dovetail with population health management providers with decades of experience in using various strategies to drive HRA response rates of greater than 50 percent – rates that can be as low as 5 percent absent active engagement and incentive strategies.

Expertly developed HRAs also offer personalized, as well as timely, patient feedback on overall risk and which specific risks may warrant attention, and provide tailored educational guidance and resources.

Finally, HRAs also can aid in the triage of individuals with important needs or care gaps to care management interventions based on risk level. While HRA results are typically shared with a physician (if the respondent identifies one and gives permission), the PHM framework recognizes that these data are better used to aid risk stratification and guide a suite of communication and care interventions that include the physician, the medical home team members and other components of a fully functioning care management program.

Health assessment information collected through or external to an HRA can be used with other data to segment the population into categories of risk for the purpose of patient-centered, targeted interventions. A tool that can be used for this analysis is predictive modeling.

Predictive Modeling as a Tool to Understand Risk

In clinical settings, predictive modeling is defined as the use of any number of statistical or artificial intelligence approaches that detect associations within multiple and frequently unrelated databases to predict the likelihood of potential avoidable future events. These events can include hospitalization, emergency department use, high claims expenses or having or developing a complication involving a chronic condition. Predictive modeling applications customarily draw upon health insurance and pharmacy benefit demographic information and claims data, but can include public data (for example, average income by ZIP code).

Like many commercial HRAs, the methodology underlying the majority of predictive models is usually proprietary or available only through a license. Predictive models also are typically tailored to commercial plans, employer groups or government programs and might not be cross-functional. Models differ by how insurance claims are reconciled and aggregated into groups. The models use statistical procedures to assign priorities and identify outputs utilized.¹⁷ But ultimately, the purpose of predictive modeling is to identify people within an assigned or attributed population with clinically and statistically significant risk or experiencing gaps in care.

In population health management programs, these individuals are allocated into high-, medium- and low-risk categories. Once this is established, each subpopulation can be targeted with risk-appropriate care management programs that vary in scope and intensity. For example, individuals in the highest-risk population might receive the added attention of physician alerts and personalized outreach from a case manager. Those in lower categories might receive periodic telephonic coaching or mailed reminders (see Table 3).

Table 3: Possible Interventions by Care and Case Management, Based on Risk

Risk Burden	Possible Interventions
High	Priority contact by a case manager and expedited referral to the PCMH for review of status.
Medium	Targeted and risk-appropriate, remote-based coaching, periodic notification of patients of care gaps, assistance with health systems access.
Low	Reminders, with condition-appropriate educational material.

Given its access to information within the electronic health record and health information exchanges, an ACO has an important opportunity to take established predictive modeling to a next step. The inclusion of biometric and patient-linked laboratory data, discreet physician diagnoses and other information that is lacking in an insurance code set is likely to increase the ability of predictive modeling to assign risk. Managed care organizations, PHM providers and researchers are very interested in working with ACOs, either under contract or in formal research protocols, to simultaneously develop these models, while contributing to success in day-to-day patient care.

Understanding the risk burden within populations also can help ACOs allocate resources to work units, thanks to predictive-modeling-based “risk adjustment.” Risk adjustment can be used by insurers to set capitation levels, adjust payments or calculate premiums. The same principle can be used to reflect the health status of insured populations¹⁸ by assessing the predicted overall risk of a person or population compared with an average risk. While private and government insurers likely will use internal risk adjustment to assess the clinical and economic performance of ACOs, the leaders of these organizations may find that this approach is an important opportunity to manage a population based on unique organizational resources.

- **CASE STUDY:** The Hawaii Medical Service Association (HMSA) "HealthPass" program relied on a Healthways-provided health risk assessment, biometrics, counseling (which could be one-on-one, group or telephonic) and other care management interventions for a study population. Each population member was 18 to 70 years old, insured for at least nine months during 2002 to 2005, had not generated more than \$100,000 in claims annually, and had not been in a nursing home or prolonged hospital stay. Age, gender, baseline morbidity and baseline costs were used in "propensity matching" to fashion a one-for-one, non-HealthPass comparator control group for each of the four study years. Compared with the control group, HealthPass participants consistently had lower total average health care expenditures. What's more, those savings exceeded the yearly HealthPass costs (which ranged from \$204 to \$236 a year). The net savings was \$34 per participant in 2003, \$132 in 2004 and \$124 in 2005. The calculated total "return on investment" was \$1.58 in reduced claims expense for every dollar spent. Based on these outcomes, HMSA completely outsourced health, wellness, prevention and disease management – along with more than 100 employees – to Healthways.¹⁹
- **CASE STUDY:** A leading employer in health promotion, Caterpillar Inc. offers a comprehensive program that improves employee health and cost trend. Caterpillar developed an internal health risk assessment tool that gathers individualized data to risk stratify its entire population and guide program development. Each participant's health risk assessment is individually built, using self-reported and claims data. Well-positioned incentives drive a 90 percent participation rate. The health risk assessments and medical claims data guide development of specific programs, and Caterpillar's predictive modeling tool accurately identifies high-risk groups for heart disease or diabetes, allowing more cost-effective targeting for intervention.
- **CASE STUDY:** For nearly three years, Enhanced Care Initiatives Inc. has collaborated with HealthSpring in caring for the sickest and most frail Medicare patients living in the community. This effort focuses on understanding the needs of this population, identifying patients and appropriate interventions, improving clinical outcomes to improve quality of life, and reducing costs. Risk stratification is key to program success and a two-step process. The first step is a weighted cost- and diagnosis-based screen. Patients who screen in by administrative data are then contacted. The second step is a telephonic screen. Nurses call the patients who have passed the first hurdle to obtain a disability rating that enhances predictive accuracy. If the patient has a combined score above a threshold, then the member is enrolled in the program. The program has experienced 30 percent cost reductions over time.
- **CASE STUDY:** MaineHealth is a regional integrated delivery system of providers and other health care organizations serving a population of nearly 1 million in an 11-county service area. MaineHealth's members and affiliates span the spectrum of care delivery – physician practices, home care, lab services, behavioral health, hospitals and rehabilitation. Health Dialog's services – including population identification and segmentation, analytics and benchmarking, predictive modeling, care management, and shared decision-making support – provide critical tools and actionable information to support ACO activities, from managing population risk to developing patient and provider engagement programs. With the introduction of the ACO service delivery model in the industry, senior leadership from MaineHealth engaged Health Dialog to analyze ACO opportunities for serving the population. In support of MaineHealth's strategic planning activities, Health Dialog uses an all-payer claims database to conduct an "ACO Opportunity Analysis" that includes identification of geographic variations in cost and quality in the service area and attribution of patients to determine which patients and what services are being sought outside the system. This information is crucial for developing quality improvement and cost management strategies that can inform future payment modeling, infrastructure design and payer contracting.

B. Clinical and Care Management

Improved clinical care and care management through care coordination is the key goal of the ACO model. The following overview addresses the process of redesigning and aligning population health principles with active and acute care, as well as developing and deploying strategies to coordinate care across patient conditions, services and settings.

PHM providers use this approach for patient engagement and communication and health interventions through an array of delivery modalities. These effective strategies and demonstrated expertise further underscore the opportunities for collaboration and partnership between ACOs and PHM providers.

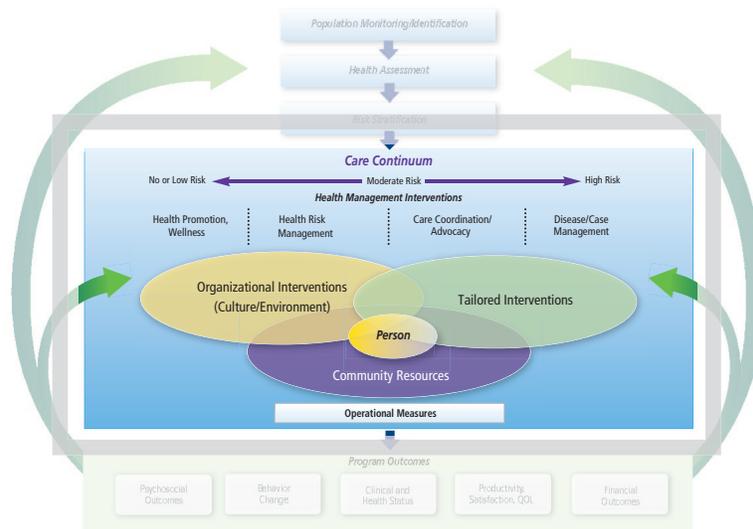
Key Learnings:

- Identify PHM process components that can help ACOs deliver population health.
- Understand the importance of engagement and tailored interventions delivered in a patient-centered way.
- Understand the multiple delivery modalities available for care and health delivery.
- Identify the role coordination and care management play in transitions of care.
- Learn how a shared services model could help achieve the goals of an ACO.

Strategies and Tools for ACOs

The Population Health Management Conceptual Framework (Figure 3, below) highlights the core PHM process components that can support ACO-led clinical and care management processes, including enrollment and engagement strategies, communication and intervention delivery modalities and tailored interventions.

Figure 3: Population Health Management Conceptual Framework



Once a patient panel has been assessed for health and risk, ACOs need a variety of care options to enroll and engage these patients. PHM has made tremendous advances in creating a suite of overlapping and reinforcing patient engagement and support interventions in health promotion, preventive services, disease risk mitigation and chronic condition management. As ACOs roll out these care strategies, two key PHM features that can improve the likelihood of success are ensuring the strategies are evidence-based and tailored to meet patients' preferences, values and needs.

Evidence-Based Clinical Guidelines

Decades of experience with promoting scientific evidence in clinical decision-making has led to the development of a wide number of medical treatment guidelines, which continue to increase in number and sophistication.²⁰ Typically developed using a combination of published medical literature, scientific expertise and impartiality, the guidelines' purpose is to give health care providers an easily accessible and flexible clinical summary of the best approach to the continuum of care at the organizational and community levels and, most important, at the provider level.

Yet, despite the guidelines' ready availability in print and online, adoption has been slowed by providers' lack of awareness, perceptions of decreased availability, poor self-efficacy, doubts about outcomes, clinical inertia, disagreements, concerns about autonomy and time constraints.²¹⁻²⁵ Overcoming these obstacles remains a stubborn challenge across multiple preventive care domains,²⁶ as well as, for example, managing LDL to recommended target in atherosclerosis,²⁷ controlling blood glucose in diabetes mellitus,²⁸ maintaining anti-platelet therapy in coronary heart disease²⁹ and reducing variation in the care of patients with chronic heart failure.³⁰

In response, employers and health insurers have turned from promoting awareness of guidelines to using guidelines as a basis for contractually-based quality measurement, reimbursement, value-based benefit designs and economically-based incentives, such as pay for performance (P4P).^{31,32} The allure of increased use of evidence-based guidelines among patients and providers undoubtedly accounts for the prominence of guidelines in other approaches to population-based care, such as the PCMH and the incorporation of decision support in the electronic health record.^{33,34} This approach will certainly underlie the evaluation of ACOs by CMS.

The strong desire to increase use of evidence-based guidelines also accounts for the health care law's emphasis on this tool. It not only requires that all health plans cover preventive services recommended by U.S. Preventive Services Task Force guidelines, but that comparative effectiveness research buttress the evidence base for future guidelines.^{35,36}

The strong desire to increase use of evidence-based guidelines also accounts for the health care law's emphasis on this tool. It not only requires that all health plans cover preventive services recommended by U.S. Preventive Services Task Force guidelines, but that comparative effectiveness research buttress the evidence base for future guidelines.^{35,36} Examples include the use of HRAs and predictive modeling to identify individual care gaps, using multiple communications channels to interact with patients, enabling patients through remote and in-person counseling to prioritize and address any care recommendations, working with providers to seamlessly incorporate this in care planning and using multiple data sources to assemble a detailed measurement of health system performance versus national and local benchmarks.

Shared Decision-Making the Key to Patient Engagement Through Tailored Interventions

Clinical guidelines are a critically important tool in health care and ACO effectiveness, but not a panacea. Commonly cited limitations of relying solely on clinical guidelines are summarized in Table 4.

Table 4: Limitations of Sole Reliance on Clinical Guidelines

Conditional recommendations may not fit all patient circumstances.
Caveat-laden with appeals to provider judgment.
Recommendations might not take patient preferences into account once benefit, risks and alternatives are known.
Evidence base might not be fully available and open to interpretation. ^{38,39}
Adoption might lead to only modest gains in quality. ^{40,41}
Adoption not necessarily linked to patient outcomes. ⁴²
Data collection systems might not be up to the task of measurement. ⁴³
Perpetually being changed and updated; works in progress. ⁴⁴
Measurement vulnerable to “gaming.” ^{45,46}
Could be used to restrict access to care. ⁴⁷
Measurement prone to errors in case-mix and risk adjustment. ⁴⁸
Reports of being associated with paradoxical patient harm. ⁴⁹⁻⁵²

A key approach in PHM to take full advantage of the potential of clinical guidelines is to link them to *patient shared decision-making (SDM)*. Closely related to patient-centered care and patient empowerment, SDM capitalizes on patient engagement when there is a choice to be made among various evidenced-based care options.⁵³ ACOs can likewise use SDM to provide patients with evidence-based guidance. By taking full advantage of the information within guidelines about care options and associated outcomes, laypersons can make informed, deliberative and specific choices relevant to personal health status and values. More than 55 randomized trials on SDM exist showing that this approach results in greater patient knowledge, fewer decision conflicts, decreased patient passivity, enhanced perception of risk and reduced variation and cost.^{54, 55} SDM has been tested in diabetes, asthma and cardiovascular care and is a basis for many chronic condition management programs.⁵⁶⁻⁵⁹ The results associated with SDM also have been promising enough to be included by name in the health care reform law.⁶⁰

Multiple Consumer Communication Delivery Modalities

As health care continues to evolve, it is becoming increasingly apparent that the delivery of outpatient services, particularly those that promote patient self-care for chronic conditions, cannot be funneled solely through provider-based, one-on-one encounters. While patient education has long relied on traditional didactic teaching and the provision of print materials, “telephony” also has become a routine feature of patient teaching.

Considerable research evidence exists that telephonic patient outreach is comparable to traditional face-to-face education⁶¹ and can be used to engage patients to be active participants in health care in concert with the physician.⁶² Telephony also may act as an important counterweight to the ubiquitous medical messaging driving health care utilization that clutters modern television, print media, billboards and the Internet. This is no accident. According to one study, these ads are garnering a higher level of perceived patient support compared with traditional health care providers.⁶³

In addition to telephony, “social networking” is emerging as an important tool in ongoing patient coaching and might become an additional option in neutralizing popular, media-based messaging that links care management, health care providers and patients. Examples include mobile phone texting, Facebook and Twitter. These communication platforms can be contrasted with “unidirectional” websites, in which users interact by being led through branching logic decision-making.^{64, 65} Social networking, in contrast, has the advantages of meeting the preferences of some patients to use this form of communication, being bi-directional, asynchronous, richly interactive and, compared with telephony, even more scalable.

Facebook is a telling example. This service maintains hundreds of health-related groups involving hundreds of thousands of users that leverage not only expert clinician support, but peer support, too.⁶⁶ While health care experts might be concerned about the accuracy of social networking’s online clinical content, one study that examined a non-Facebook patient support site did not show that there was significant levels of misinformation present.⁶⁷

PHM’s emphasis on multi-channel patient communication has led many of the industry’s service providers to accommodate individual patient communication preferences and tap into this growing phenomenon of social media. This includes the liberal use of secure e-mail and helping providers tap into Facebook and Twitter to communicate with program participants. For ACOs, this will prove to be a tantalizing and richly dynamic field, full of opportunity and risk. Considerable concurrently conducted research also will be needed to determine if social networking translates into lasting behavior change.⁶⁸

Health Management Interventions: Care and Case Management

Population risk stratification, health information technology and a strong primary care base are critically necessary elements in creating a responsive, coordinated and accountable approach to care. However, one lesson of the Medicare demos described above is that these components alone are not sufficient. Non-physician-led patient care management is no less an important ingredient in achieving accountability. While there are many non-physician professionals – dietitians, pharmacists, respiratory therapists, social workers, health educators and others – nurses generally have been favored in PHM as the foundation in the majority of primary care-based care management programs. Reasons probably include a working familiarity with and acceptance by physicians, widespread health care consumer recognition and a generalist, as well as community, mindset that fits well in primary care settings. It is important to note, however, that non-nurse care and case managers can fulfill the roles described below.

Care management is the package of physician-supervised interventions that assist patients and support systems in managing medical conditions and related psychosocial problems more effectively, with the aims of improving patients’ functional health status, enhancing the coordination of care, eliminating the duplication of services

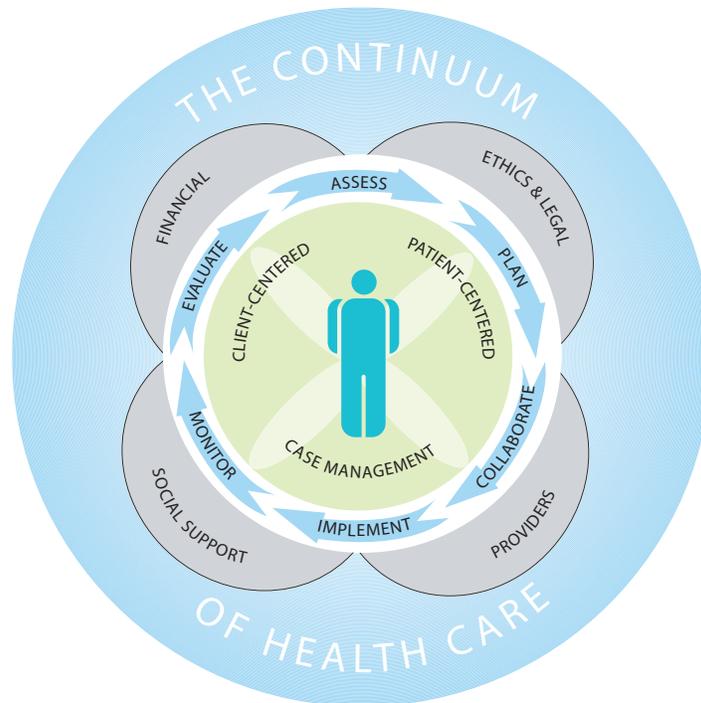
and reducing the need for expensive medical services. As noted above, it typically relies on non-physicians, such as nurses, who provide two-way and personalized outreach with patients using a variety of methodologies, including in-person (one-on-one or groups), telephony, texting and other forms of social media. Care managers seek to minimize health care fragmentation, coordinate the referral and coordination between primary care and specialist physicians, promote the use of evidence-based health care and improve patient safety, and ultimately their aim is to establish the patient as an active and empowered member of the health care team. This enables patients to develop personalized goals, change lifestyle for the better and develop strategies to overcome any barriers to obtaining those goals. These professionals typically receive additional training in the emerging science of patient engagement and a variety of credentialing programs are available.^{69,70} In addition to drawing on nationally recognized and established expert guidelines, care management also is data driven, striving to give providers ongoing individual feedback versus local peers and national benchmarks.⁷¹ A growing body of evidence from a variety of settings shows that care management can improve disease control, address variation and reduce costs.⁷²⁻⁷⁸

Table 5: Suggested Attributes of Successful Care Management

<i>Mobile</i>	Counseling and services are independent of location or level of care, including remote support, the home setting, the provider’s office or the community.
<i>Geographic assignment</i>	Providers and patients warrant linkage to a known care manager. If several medical home clinics are served, they should be in geographic proximity.
<i>Connectivity</i>	All documentation, including care plans, needs to be readily “uploadable” within the electronic record or health information exchange (HIE), with easy access by other stakeholders, including providers and health insurers, and with discrete data to assist measurement and predictive modeling.
<i>Credentialing and Training</i>	Additional skills are necessary to navigate the systems of care that characterize chronic illness, chronic condition management, physician-led care and health insurance.
<i>Special Understanding of Primary Care</i>	Training in generalism and experience with primary care is critically important.
<i>Flexibility</i>	Adaptability to special patient circumstances means care managers will need to rely on more than policy, procedures or protocols to drive patient care.

One element of care management is case management. This is defined by the Case Management Society of America (CMSA) as "the collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes." While also high "tech," one feature that distinguishes case management is its high "touch" and highly individualized approach. It provides patients and families with tailored insights about various treatment options, community resources, the role of any applicable insurance benefit designs and the impact of psychosocial issues. The CMSA portrays this in its "continuum of health care" that addresses the financial, ethical, legal, social and clinical dimensions in the continuum (see Figure 4). As a result, timely and informed shared decision-making can be achieved in a mutually agreeable, individualized and documented care plan. It is most effective when patient participation is supplemented with the input and help of family, caregivers, the personal physician, other health providers, payers and community organizations. When it also can access medical records and claims and/or administrative data, case management can further facilitate communication and coordination among all stakeholders, make more effective decision-making possible and minimize the fragmentation of care. Case managers often have national organization-sponsored credentials that recognize special expertise in helping patients navigate the health care system for maximum benefit.⁷⁹

Figure 4: Case Management Continuum of Health Care



Source: Case Management Society of America

PHM-Based Care Management and the Triple Aim

PHM service companies underscore the term patient “engagement” in scientific publications, marketing materials and policy proposals. This term is intentionally used to transcend the usual approach to facilitating physician-patient communication in a fully functional HIT environment. While clinical outcomes and lower cost are vital components of health reform, “engagement” also addresses the third “patient experience” leg of the Triple Aim. How well patients are immersed in care likely will turn out to be a key determinant of the success or failure of ACOs. As these ACOs seek to fully succeed in all the care dimensions of the Triple Aim, recognition of the importance of engagement will not only lead to more cost-effective self-care, but drive the use of care interventions that the patient chooses, based on his or her own personal preferences. This is the ultimate goal of a truly patient-centered health care system.

Care Management and Readmissions

Given the high cost of hospital-based care and the frequency of potentially avoidable readmissions, patients who are transitioning from an inpatient to an outpatient setting represent an important opportunity for population-based care and case management.⁸⁰ There are a significant number of studies demonstrating that programs to reduce medication errors, improve information transfer and coordinate follow-up care⁸¹ can significantly reduce the risk of readmissions. It is important to note that these initiatives also have relied on directed care management programs involving non-physicians, such as nurse care transition coordinators or pharmacists who provide medication education, coordinate home visits, provide telephonic monitoring, initiate one-on-one care management, refer to community services and give information to the patient’s physicians.⁸²⁻⁸⁴

Hospital discharges ultimately can be thought of as one type of a “care transition” that occurs when a patient moves from one care setting to another or is transferred from one provider to another. Poor transition management in general has been identified as a cause of hospital readmissions and avoidable emergency department use.¹⁵ Strategies that have been used to decrease the risk of readmission include clearly setting and documenting follow-up expectations prior to the transition, ensuring follow-up with a provider within a limited number of days, home visits, abundant communication with the primary care provider, close collaboration with home health agencies and close monitoring by care management services.

A Shared Services Model

By linking the case and care management elements described above to its traditional delivery network, an ACO might be challenged by time constraints and multiple clinical settings. Vulnerable patients can’t wait, while the hiring, training and credentialing of care managers can take months of training and mentoring. Innovative health insurers have responded by providing additional financial support through grants, loans and technical assistance, in addition to monthly global primary care per patient care management fees. Unfortunately, a significant shortcoming of that approach is that it limits the availability of PCMH-based care management on a payer basis. The resulting balkanization only adds to the complexity of primary care sites struggling to maintain a single standard of care for assigned patients during a time of great change.

An emerging opportunity is the potential to modify the principles of PCMH-owned care management to coordinate care across patient conditions, services and settings. Provider organizations, including integrated delivery systems, medical groups, practice associations and physician-hospital alliances, have shared external, PHM-centered, nurse-based patient coaching support among multiple primary care clinics by pooling multiple revenue streams dedicated to care management. Under this scenario, there is a standardized job description and uniform performance expectations that, at the same time, are flexible enough to adapt to the realities of multiple primary care sites. This has the additional benefit of relieving a physician of the burden of personally overseeing an unfamiliar enterprise. Examples of this approach include the primary care collaborative in southeastern Pennsylvania, CIGNA in New Hampshire (in partnership with Health Dialog) and Geisinger Health System relying on Geisinger Health Plan nurses. When multiple payers are collaborating on a statewide level (for example, Vermont's Medical Home Demonstration, as well as the Southeastern Pennsylvania Primary Care Collaborative) a central authority – such as the state itself – can be responsible for hiring the nurses and “billing” the participating insurers based on a variety of metrics, such as patient number and practice income.

In the shared services approach to care management, it is the umbrella organization that is responsible for providing the services to its clinics under a separate administrative structure and variety of financing arrangements using global budgeting and internal transfer pricing. When this approach is used, care managers are best allocated to geographically defined clusters of medical home primary care sites. The number of sites per nurse depends on the number of patients. Aetna, Geisinger and APS Healthcare used a nurse-to-patient ratio of 1:1500, although the number of patients per nurse, depending on other resources, can certainly go higher. Other considerations are geographic proximity of the clinics within a cluster (an important issue in rural systems) and whether any of the primary care sites already have onsite care management. The latter is a consideration, because some clinics may have invested in nurse-based, team-enabled patient coaching already and do not warrant an external care management nurse. Under such circumstances, organizations financially “credit” those sites. In the unlikely event that a clinic refuses to provide or work with a care manager, one option is to impose a financial penalty.

KEY TOOLS:

ENGAGEMENT STRATEGIES, INNOVATIVE INTERVENTION DELIVERY MODALITIES, CARE MANAGEMENT, SHARED SERVICES

- **CASE STUDY:** The General Board of Pension and Health Benefits of the United Methodist Church sought to help health plan participants maintain good health, but faced several barriers to engagement. Several strategies were implemented to improve engagement. In 2008, participants received a \$100 incentive for completing an HRA, and other participant-targeted incentives were developed for 2009 to encourage blood screening and walking. The General Board also targeted communications to relieve privacy concerns. Another important strategy included identifying chronic condition management candidates at a point of heightened willingness to engage in the program. These incentive strategies proved successful, with a near doubling of HRA participation (29.6 percent in 2007 to 58.6 percent in Q1/Q2 2008), a higher frequency of self-referral to the condition management program and an increase in program participation.
- **CASE STUDY:** Blue Cross Blue Shield of Massachusetts partnered with Atrius Health in the Collaborative Chronic Illness Care pilot aimed at improved patient activation through a two-fold program. Building on the positive results from Kaiser Colorado's Diabetes Priority Program, the pilot examined the impact of an Atrius Health recommendation of the BCBSMA Blue Care Connection for Diabetes Program on active member participation. Second, it examined areas of overlap between individual chronic condition management activities to identify opportunities to leverage unique core competencies and reduce redundancies through a more integrated approach. The results of this Collaborative Chronic Illness Care pilot have been an increase in member engagement from 23 percent to 47 percent and more efficient care delivery, resulting in improved clinical outcomes, exceptional care and a flexible project structure with high portability potential.
- **CASE STUDY:** Geisinger Health Plan (GHP) and Geisinger Community Practice implemented ProvenHealth Navigator (PHN) in 13 primary care sites with Medicare Advantage members. The goal of this initiative was to redesign primary care to improve experience, quality and efficiency of care for Medicare patients. The model was initially delivered in partnership with Geisinger Health System's primary care practices and insurance operations, but later expanded to community-based primary care practices, as well. PHN incorporates many established components of the chronic care and medical home models, but also includes new strategies that focus on improving quality and efficiency through all segments of the health care system. A central feature of the model is condition and case management for patients with chronic, comorbid conditions, such as CHF, COPD, diabetes, CAD, CKD. GHP case managers are embedded into the primary care office and work collaboratively with practice staff in delivering population management services. Other components of the program include 24-hour primary care access, expanded acute care services, home-based monitoring, interactive voice-response surveillance, end-of-life planning and transitions of care management. Results to date demonstrate significant impact on quality and efficiency outcomes in practice sites where PHN has been implemented

C. Infrastructure and HIT

The effective use of health information technology (HIT) for health care delivery ultimately depends on integrating multiple systems and aggregating data across multiple sites of care, while simultaneously organizing and synthesizing measures and standards for management decision-making. Population health management providers and support organizations have developed and deployed innovative HIT strategies to improve core PHM strategies. These innovative technologies hold important lessons for physician-led ACO delivery models.

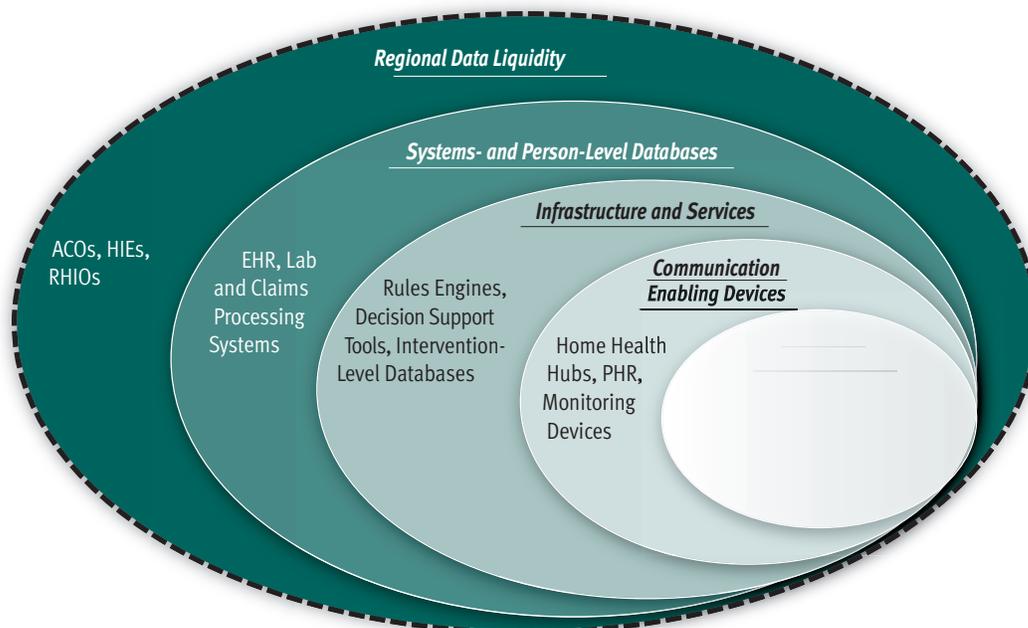
Key learnings in this section:

- Identify HIT strategies needed for ACO full deployment

Strategies and Tools for ACOs

The electronic health record (EHR), a health information exchange (HIE), a registry and decision support comprise the informatics backbone of an ACO. This will not only enable increased health care quality and safety, but drive optimum decision-making at the point of care, enhance quality improvement programs, inform population-based measures of performance, fulfill emerging meaningful use criteria and form the foundation for the successful use of other tools (described below) necessary to manage an assigned population. The HIT framework in Figure 5 identifies the key components of both health information and health technology necessary to fully operationalize population health management programs or individual PHM strategies. These technologies extend beyond electronic medical records to encompass an array of innovative technology devices and applications and can be utilized throughout an ACO to enable and enhance the delivery of high-quality, patient-centered interventions and communication.

Figure 5: The PHM HIT Framework



Source: *Outcomes Guideline Report Volume 5. Copyright 2010, Care Continuum Alliance*)

Regional Data Liquidity

To maximally leverage the insights from the data, ACOs should view an HIT model as an “enterprise-level” data hub requiring, collecting, analyzing and implementing data from and among providers in various care settings. This, in turn, can enable the use of data for a subpopulation that exist within a specific geographic region, share particular care needs or use a particular ACO service. These data can be collected from a variety of health delivery sources, including hospitals and providers, as well as non-traditional sources, such as community centers and public health agencies. Other enterprise-level data hubs are expected to emerge in health information exchanges and regional health information organizations (RHIOs). These are more fully described in Table 6.

Table 6: Enterprise-Level Data Hubs

<i>HIT Framework Level</i>	<i>Explanation</i>	<i>Examples</i>
Systems and Person-Level Databases	ACOs will need to maintain databases and systems that can identify, assess, stratify and enroll populations. The use of these databases and systems will, in turn, enable the assessment, stratification and engagement processes of PHM interventions, as well as facilitate the ability to measure program outcomes. This includes developing or securing both the data warehouses and technology needed to perform these functions.	Electronic health records, as well as lab and claims processing systems.
Infrastructure and Services	This comprises those specific information and technology services necessary for provider efforts to enhance patient services at the point of care. This infrastructure, combined with complementary care management services, enables the enrollment and engagement process, as well as the process of communication and intervention delivery.	Rules engines, decision support tools and intervention-level databases.
Communication and Enabling Devices	This PHM component is focused on devices that allow and enhance communication between and among health care providers and assigned patients. These devices also enhance the ability for providers and patients to exchange and share information and contribute to most of the processes outlined in the PHM Program Process Framework, including the processes of enrollment and engagement, program delivery and outcomes measurement.	Home health hubs, personal health records, care management records and monitoring devices.
End-User Medical Devices	This component of the PHM HIT Framework includes devices patients use to communicate and exchange information with health care providers, including, but not limited to, physicians. These devices contribute to the process of successfully communicating and delivering program components.	Personal computers, smart phones, tablet devices.

Many of the technologies discussed in the framework above are adaptable to a variety of provider organizations and will fit with emerging ACOs' informatics infrastructure, as well. It is widely agreed that a networked *electronic health record* (EHR) system will be critical to the success of ACOs. In addition, the leveraging of data liquidity, dedicated systems for subpopulations, service support solutions and care management enablement will increase the effectiveness of the *health information exchanges* that will pool and assemble demographic, biometric, diagnostic and treatment data to facilitate informed decision-making at the point of care. This, in turn, will enable providers to better access state-of-the-art guidelines that support the tailored implementation of the best available standards of care, as well as documenting clinically necessary *exceptions*, such as competing comorbidities or the need to accommodate health consumerist preferences in a patient-centered approach to care. Effective use of the pooled data in registries also will facilitate the access to longitudinal data feeds that are necessary to manage an attributed population on an ongoing basis with summary evaluations of central tendency. Capturing, interpreting and sharing outcomes data will drive provider feedback loops for feedback, quality improvement and insights required by ACO leadership and external stakeholders.

PHM's Support for Meaningful Use

The twin principles of providing useful information with decision support at the point of care, plus data capture with ongoing longitudinal interpretation, underlie CMS' release of the regulations defining the first phase of the "Meaningful Use" (MU) criteria that will support extra payments for EHR-based care. Phase 1, implemented in 2011, begins with medications orders, making electronic copies available, immunizations, drug lists, drug-drug, drug-allergy, drug-formulary, lab results, patient reminders and e-prescribing available. PHM's potential is far more important for upcoming meaningful use Stage 2, which is under development and expected for deployment by 2013. Stage 2 will include the need to support the creation of personal health records and assemble health summaries at the individual patient level, while simultaneously assembling data for public health reporting. The PHM HIT framework described above also can link evidence-based guidelines to patient order sets, inform clinical decision support and drive clinical eligibility checking.

Fortunately, as provider organizations pursue status as ACOs, most are already investing in the HIT described above, including actively incorporating meaningful use criteria and linking hospital and provider electronic records, building information exchanges and developing the ability to extract and pool data that will inform decision-making by the individual *patient*. The HIT Framework above is the paradigm that can drive the use of HIT at the *population-based* operational level.

PHM, HIT and Telemonitoring

Telemonitoring is more than the collection and transmittal of physiologic information from patients to providers. While it was originally developed to enable the bi-directional delivery of health care over great distances, the technology has grown in scope and sophistication. Commercially available telemonitoring is now routinely accompanied by supporting care management services. Research examining the combined approach has demonstrated superior outcomes versus usual care. It is this insertion of physician-directed care management to the stream of physiologic data that enables preemptive communication with patients about early warning signs and necessary medication adjustments, and triggers timely access to care.⁸⁵⁻⁸⁷ This approach has been called "transformative" and "disruptive" because it also shifts greater responsibility for

self-care to patients. Combining it with care management also avoids forcing physicians to take on large volumes of additional work and increased legal liability with diminished control.⁸⁸ Approximately 130 insurance companies now provide coverage for telemedicine in some capacity⁸⁹ and it has been used in the Veterans Health Administration system.⁹⁰

Two areas where telemonitoring has a strong track record are chronic care management and post-acute discharge monitoring.⁸⁸ That makes it a particularly important option for people with heart failure, who not only have a chronic condition but who also are at risk for recurring hospitalizations.⁹¹ It also has been shown to be effective for other conditions, such as diabetes, pulmonary conditions and hypertension.^{86, 92}

There also is evidence that care management combined with telemonitoring may be associated with better outcomes than care management alone.⁹³ This could account for the negative results of one randomized clinical trial study that compared physiologic monitoring and provider notification versus usual care.⁹⁴

Despite its growing acceptance, adoption of telemonitoring has been hampered by inadequate reimbursement by Medicare and state Medicaid programs. There also is limited patient awareness, especially among the population segments most likely to benefit: seniors, the chronically ill and caretakers of the chronically ill or elderly.⁹⁵ Technology barriers include the lack of interoperable connectivity standards, lagging adoption of electronic medical records and the lack of information technology infrastructure in rural areas.

While telemonitoring has been shown to reduce hospital admissions among patients with chronic, long-term conditions in many studies, potential challenges for ACOs are the user interface, technical problems, data loss, confidentiality, disruption of work flow and the need to prospectively monitor effectiveness and safety.⁹⁷ As a result, ACOs will need to carefully consider the sensitivity and specificity of the measurement devices, the ability to assess the location of the patient, the suitability of telecommunication systems (the integration of the local area, mobile and wide area networks), the connectivity of a contact center, the robustness of analyzing software and, finally, links to the patients' medical records.⁹⁸

KEY TOOLS:

HIT COMPONENTS, ROLE OF TELEMONTORING

- **CASE STUDY:** in the Geisinger Health System, its health information technology was used to identify the variation in its operating rooms, “hard wire” clinical guidelines into its systems and apply them to every patient going through surgery. This decreased mortality, infection rates, length of stay and readmissions and enabled the issuance of a “warranty” for heart surgery that Glenn Steele, Geisinger’s CEO, predicts will enable like-minded systems to manage through global payment approaches.⁹⁷
- **CASE STUDY:** Kaiser Permanente is using a diabetes management solution developed by BeWell Mobile that runs on common cell phones to reduce the HbA1c levels of diabetes patients. Kaiser's Riverside Medical Center began a pilot program in 2007 targeted at diabetes patients with blood glucose levels greater than 9 percent. The diabetes management solution developed by BeWell Mobile enables Kaiser's medical team to keep tabs on patients using the application anytime and anywhere. The program is easy to use and patients are "in and out" of the program in 60 seconds. Patients also can use the Web to input diary entries. The solution works across the entire diabetes patient population (type 1, type 2, pump users). It enables care managers to pick specific modules to work on with patients, including: stress, exercise, medication intake, insulin intake, meal intake, depression, smoking and weight management. For each module, the solution automatically triggers follow-up questions and appropriate action plans. Care managers review real-time reports on a computer screen that stratify each patient according to composite risk factors to focus attention on those patients who may need more intense intervention by the medical team. Many patients have reduced blood glucose by 1 or 2 percentage points by increasing adherence to a daily action plan and taking more control over day-to-day care.
- **CASE STUDY:** The Billings Clinic is one of 10 participants in the Centers for Medicare and Medicaid Services Physician Group Practice Demonstration Project to evaluate innovative approaches to chronic disease care within the provider setting. Through the use of remote telemonitoring coupled with effective enrollment, engagement and retention strategies, this project was able to reach heart failure (HF) patients in large, mostly rural area. The Interactive Telephone System with Web-enabled Data Tracking utilizes a daily monitoring system for patients via interactive voice data collection. Patients call daily from 4 a.m. until noon, and data appears immediately on a Web server. HF "Care Coaches" – RNs – call outliers, focusing on two objectives: managing the patient in the context of HF protocols and referring patients to HF clinic physicians and non-physician practitioners, or primary care physicians. This system allows for one RN to follow two to 300 patients. This project has demonstrated over the past two years extremely positive results, reducing hospitalizations in excess of 40 percent for all cause admissions when compared with this population's prior rates of hospitalization. In addition, the project has documented a total of \$2.8 million savings, which included a \$2.3 million savings to Medicare resulting from averted hospital admissions from January 2006 to December 2007.

D. Operational Management

While it is widely expected ACOs will initially rely on a combination of fee-for-service income and "shared savings" gainsharing, it is possible successful ACOs will assume increasing levels of insurance risk from multiple payers. As a result, it is important that these organizations develop a working familiarity with the concept of insurance risk and the full spectrum of payment methodologies, including bundled payments, risk corridors and full or partial capitation arrangements. Success in these new payment models also will need to be paired with measurably improved clinical performance measures. Changes in ACO operational management required by these new financial arrangements will require effective contracting with non-physician care providers, health plans and employers.

Key learnings in this section:

- Likely ACO payment methodologies.
- The importance of attribution and evaluation.
- Identify the key domains of potential impact.
- Contracting with PHM providers.

Strategies and Tools for ACOs

Prospective vs. Retrospective Attribution

The evaluation of ACOs as defined in the ACA will ultimately be based on *observed* versus *expected* utilization of an "attributed population." Attribution will likely hinge on an algorithm used by CMS that uses past health insurance claims to "assign" a beneficiary to a "predominant" ambulatory physician and then to the hospital, typically based on the pattern of inpatient services or where the physician's patient panel had a predominance of medical admissions. This is one reason why the ACA contemplates having primary care physicians be assigned to one ACO at a time. The attribution algorithms reportedly have sufficient sensitivity and specificity for virtually all Medicare enrollees.⁹⁹ Depending on the final regulations, attribution could be either a) prospective as well as "visible" to the ACO; or b) retrospective with "invisible" enrollment and no ACO awareness.

Prospective attribution may offer the best opportunity to influence interventions and provide a level of certainty for ACOs. ACOs and patients would benefit from an ability to apply risk assessment and stratification strategies described above, develop personalized, coordinated health strategies for assigned individuals and, finally, estimate baseline versus projected physician expenses for beneficiaries. Advanced awareness of cost trends can position ACOs to assess the clinical and economic risks of all population segments. ACOs may then assign various levels of intervention intensity based on different needs and risks.

Prospective attribution also can foster patient engagement. Informing beneficiaries in advance of the arrangement allows for an understanding of the benefits of improved care coordination, enhanced access and any other health support services available through an ACO. Fully informed patients tend to be more motivated and empowered in personal health matters, leading to healthful behavioral change. Last, recognizing that individuals should have the ability to exercise choice in health care, prospective attribution could include an opt-out process for beneficiaries.

Whichever attribution method CMS ultimately accepts, it will still be critically important for ACOs to closely and prospectively monitor economic and clinical outcomes for assigned patient population. This has special urgency with the observation that, even under optimal circumstances, it may take three to five years for a newly formed ACO relying on all of the interventions used in the Physician Group Practice demo to see a positive return on investment.¹⁰⁰

As will be discussed below, PHM service providers have a variety of tools that can be used by ACOs.

Payment Methodologies

It is widely anticipated that the financial reconciliation for ACO payment methodologies will ultimately consist of “two-sided” risk contracting linked to achieving a minimum savings threshold and attaining clinical quality measures. This will functionally act as a global payment that is designed to reward ACOs for the efficiency of its care management processes. Yet, while this has the advantage of encouraging the ACO to achieve maximum efficiency, this approach might not fully account for the up-front costs of organizational and cultural change. As a result, upside *gainssharing* will materialize if quality and costs exceed thresholds, but *profit* will only occur if the upside is greater than the up-front costs.¹⁰¹

ACOs should expect requests to adapt to other fixed and risk-bearing payment approaches, such as risk-adjusted “bundling” or episode payments. An example of this is the Geisinger Health Plan’s ProvenCare, which transfers the risk for services leading up to and following cardiac surgery.¹⁰² It is also possible that, as ACOs achieve success, a continued evolution will allow them to adopt fuller degrees of *downside* risk bearing under a variety of risk-adjusted, capitated arrangements.¹⁰³

Risk Pools

ACOs will vary in size and the low versus high makeup of beneficiary risk pools. Accordingly, ACOs may wish to seek a savings threshold requirement that varies with size, as well as baseline costs. ACOs could therefore ensure a degree of fairness in being above to achieve the upside bonuses that are based as much as possible on use of cost-effective treatment strategies.

Leeway in Investing in Risk Assessment and Care Management

It is unlikely that ACOs will employ a provider “gatekeeper” to control utilization. Consequently, patients will have choice of providers. As a result, ACOs will be even more reliant on population health management capabilities that proactively identify patients at risk, engage them in self-care, facilitate close coordination with a medical home and coordinate the use of specialty services. Is it fortunate, then, that gainshares, bundling and capitation allows ACOs considerable leeway in making investments in care initiatives that have been described earlier that are otherwise poorly reimbursed by traditional fee-for-service methodologies.

Insourcing vs. Outsourcing

While committing the economic resources to care management in a risk-bearing environment is an absolute necessity in the drive to become truly accountable, provider-led systems may be unable to implement a

nurse-based care management program due to other competing priorities, a lack of experience in building population health management programs and working in a risk-bearing environment, combined with a months-to-implementation timeframe. When those constraints exist, one important opportunity is a partnership with an experienced PHM program. The PHM service provider community has a wealth of experience in rapidly ramping up the non-physician resources that can provide both telephonic-based coaching (which, for appropriate patients, is an important contributor in behavior change) and “boots on the ground,” face-to-face, high-touch case management. Alternatively, PHM service providers can provide telephonic support in concert with a system-owned case management program, either as a stand-alone option or as the lead in an externally supported “shared services” design.

PHM companies also have years of experience in clinical and economic trending, health risk assessment and predictive modeling and managing populations under a variety of financial, bundled, capitated and other two-sided risk arrangements. PHM service companies can help ACOs assess the risk and care gaps within a population, manage the uncertainty from retrospective attribution and work with providers to not only secure appropriate fee-for-service revenue, but maximize the likelihood of achieving a gainshare bonus payment. In fact, the terms of such a partnership can likewise be fee-based, combined with a performance payment that depends on the successful achievement of the gainshare.

This ultimately boils down to a “build or buy” decision that, in turn, depends on the availability of internal expertise, program depth, pricing considerations and mutual tolerance for risk-based performance guarantees.

Contracting with a PHM Service Provider

If an ACO were to seek the support of a PHM service provider, a variety of considerations would come into play. ACOs have the option of contracting for any combination of services described above, such as just delivering an HRA or assisting with population segmentation or providing a narrow or wide spectrum of care management services. PHM provider organizations likely will point out that the likelihood of seamless delivery of services, minimized disruption at the patient level and service pricing will be advantaged by buying the full suite of services described above. ACOs considering this will need to examine the internal transfer pricing for these services, as well as speed to implementation.

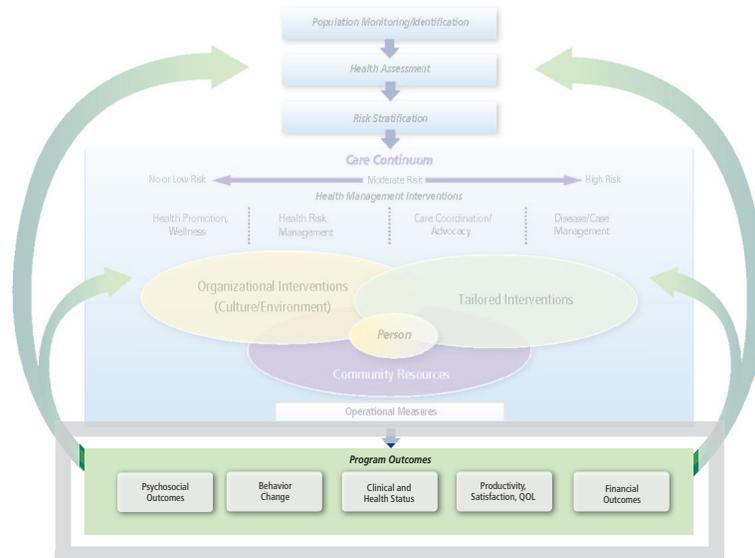
Another important consideration is the impact on physicians’, hospitals’ and other providers’ work flows. For example, high-risk patients may need to receive expedited appointments, physicians will need to see recently discharged patients promptly, clinics will need to work closely with care managers on care plan execution and care management information systems will need to be part of the “single view” available to providers at the point of care.

The cost to ACOs of PHM services will depend on the depth of services requested, but fees can be based on per member per month (PMPM) for an entire attributed population to a standard PMPM fee for every patient that is enrolled in a care management program. Since PHM service companies’ contracts with managed care organizations typically include a mix of clinical and financial performance guarantees, ACOs should be prepared to leverage this as part of the PHM contracting strategy.

Evaluation Considerations

The PHM Conceptual Framework section that corresponds to this ACO component is highlighted in the Program Outcomes section of Figure 6 (below). This section identifies the key areas that should be assessed to better understand the intervention impact and opportunities for continuous quality improvement.

Figure 6: Population Health Management Conceptual Framework



Outlining a framework for a program's outcomes can have several practical applications. It can help systematize the program design and its implementation, as well as shape both the evaluation processes and outcomes reporting strategy. Whether the outcomes framework is created before or concurrent with the development of the program, it can help with the conceptualization of the overall program strategy and specific intervention approaches.

Careful consideration of the chain of effects that will eventually lead to the ultimate program goal or outcome, and inclusion of those outcomes in the outcomes framework, can identify needed program components designed to achieve those outcomes. Additionally, because there are many things that contribute to the financial impact of programs and interventions, explicitly outlining the predicted short-, intermediate- and long-term outcomes can help stakeholders understand the full continuum of impacts and the expected timeframe for impact on both cost and health. Finally, a well-constructed conceptual outcomes framework can help with interpretation of program outcomes and shed light on the practical implications of evaluation findings.

Demonstrating to stakeholders that short- and moderate-term program outcomes are occurring as expected can provide early evidence that a program or intervention is on track to deliver a longer-term impact.

Evaluation of Clinical Measures

Accordingly, as ACOs strive to simultaneously manage and measure outcomes for populations, state-of-the-art approaches to the evaluation of population-based care management programs will become critically important.

timeframes. A PHM program delivered within an ACO setting should select an array of outcomes/domains to monitor based on the variety of interventions and programs delivered to meet the needs of all people along the health continuum.

The evaluation of programs addressing the needs of smaller numbers of patients or limited pilot programs is a greater challenge, because statistical variation can hinder accurate assessments of central tendency. Fortunately, there are adaptations possible, including being guided by estimates of effectiveness, providing a statistical context, time series analyses, grouped multiple binary tests and blended data sets.¹⁰⁵

It is important to recognize that measurement of population-based outcomes using the resources described above needs to be both repetitive over time and compactly summarized. As a result, ACOs can use trending to identify and proactively address quality and cost threats. Successful care management programs not only assemble and report key measures on a monthly or quarterly basis, but invest in visually arraying the information in easy-to-understand visual formats. This is commonly described as an onscreen “dashboard” that, in turn, communicates how the organization is fulfilling its mission and informs month-to-month clinical planning. In addition to these summary data, ACOs will need the ability to “drill down” through subpopulations to, if necessary, the individual patient or provider level. This, in turn, will enable provider alerts or outreach involving care management programs.

There is no single formula on how many or how often metrics such as bed-days, readmissions, glycemic control, medication compliance or patient satisfaction should be followed. This ultimately depends on local culture, available resources, organizational focus and patient needs. The point is that a core set of metrics that are linked to success are identified, assembled, understood and used to adjust operations in a virtuous cycle of planning, execution, evaluation and adjustment.

KEY TOOLS:

ATTRIBUTION AND EVALUATION, DOMAINS OF POTENTIAL IMPACT, PHM CONTRACTING

- **CASE STUDY:** Independence Blue Cross (IBC) provides financial incentives to primary care practices in the IBC network that have achieved certification through the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH) program. IBC's financial arrangement with primary care practices includes a base capitation payment with quality incentives, incentives for controlling the cost of care for categories of services directly influenced by primary care practices and the incentive for achieving recognition as a medical home. As primary care practices transform into PCMHs and build the infrastructure necessary to deliver care management and population health management, the practices will be well-positioned to become part of an ACO. The ultimate goal of this effort is to support the effective delivery of services that are best maintained at the physician practice level. IBC provides resources to support the practice transformation to a PCMH, including access to a discounted fee for applying for NCQA medical home recognition and a library of third-party materials practices may consult for help changing workflow and office processes to effectively transform. IBC also provides a SMART Registry, which identifies specific gaps in care for members with chronic conditions and makes available a Clinical Care Report, a two-page summary medical record derived from administrative data sources, for every member receiving care in a practice. Health Dialog delivers care management and shared decision-making support services to IBC's membership and actively supports the PCMHs with registries at both the patient and practice levels to enable proactive planning and managing of population care. Health Dialog also provides on-the-ground support and consulting and can train PCMH staff in care management and patient engagement concepts for implementation within the practice setting. Health Dialog plans to continue supporting the PCMHs with data and information integrated into the practice workflow for proactive population management.
- **CASE STUDY:** Since June 2008, when CIGNA launched its first collaborative accountable care program, the health plan has engaged in collaborations by creating a care model anchored in the principles of the patient-centered medical home (PCMH), with an emphasis on care coordination and communication. CIGNA's physicians and nurses have frequent contact with providers at the physician practices to help with coordination of patient care. One key element of CIGNA's programs is the sharing of "gaps in care" information and other patient-specific data with a care coordinator at the physician practice to foster more comprehensive care. The care coordinator then contacts the patient to ensure that, for example, follow-up appointments are scheduled, prescriptions are filled or additional medical tests are completed.

At Dartmouth-Hitchcock, a New Hampshire-based physician practice group, these care coordination practices have resulted in a 10 percent improvement in the practice's overall closure rate for gaps in care, compared with other physician practices in the market. For hypertension, Dartmouth-Hitchcock shows a 16 percent gap closure improvement, compared with the market; and, for diabetes, an 8 percent improvement.

At Cigna Medical Group, the Phoenix-based multispecialty medical group practice division of CIGNA HealthCare of Arizona, a strong focus on the patient and improved care coordination has resulted in average annual savings per patient of \$336. The cost of ambulatory surgery is down 11 percent, while preventive care visits are up 3 percent overall and up 12 percent for adults.

Conclusion

There is evidence that integrated and organized provider organizations are associated with greater “systemness” that translates into advantages in both quality and cost.¹⁰⁶ Among the ingredients that facilitate this are use of care management programs; work-unit practice data support; responding to and managing financial incentives; and supporting practice environments¹⁰⁷ with systems that can manage risk¹⁰⁸ and implement quality improvement strategies¹⁰⁹ with strong central leadership that enforces and rewards physician accountability¹¹⁰ Recognizing that these ingredients are vital to the success of ACOs and other care innovations, CMS, according to Center for Medicare and Medicaid Innovation Acting Director Richard J. Gilfillan, MD, will be on the lookout for proposals that “will always put the patient first.”¹¹¹

As ACOs take on the challenges of improving clinical outcomes and achieving gainsharing for an attributed population, it remains clear that success will depend on putting patients first. HIT and a robust primary care network are two ingredients necessary to achieve this. Other population health management interventions described in this resource guide represent important tools for ACOs to improve care delivery and outcomes and include:

- health risk assessments and predictive modeling, which create actionable information enabling the application of physician and case management services for patients with the greatest needs and who are at highest risk;
- mobile, connected, empowered and flexible non-physician-based care and care management that fully capitalizes on advantages of clinical teaming and shared decision-making;
- maximized data liquidity and data analytics to fully leverage health information technology to achieve insights and understand the underlying drivers of outcomes in an attributed population; and
- using the intellectual and financial capital necessary to accept various levels of risk transfer through health insurer contracting.

Appendix A: Additional Resources

This toolkit describes population health management strategies and tools that can round out the critically important investments ACOs make in health IT and the patient-centered medical home. The resources fall into four broad categories: population and health assessment, clinical and care management, infrastructure and HIT and operational management.

Below is a listing of Care Continuum Alliance members that offer expertise and support for ACOs, arranged by the four key areas. Visit the Population Health Resources Directory at www.carecontinuum.org (under the “Population Health” drop-down menu) to learn more and for contact information.

Population and health assessment (e.g., health assessment, health risk assessment, predictive modeling, risk stratification)

ActiveHealth Management Inc.	Health Diagnostic Laboratory, Inc.	Providence Health & Services
ADVANTAGE Health Solutions	Health Dialog Inc.	PureWellness
Aetna Inc.	HealthMedia Inc.	SCAN Health Plan
Alere	HealthNow NY, Inc.	Secure Health
AllOne Health Management Solutions	Healthways Inc.	Semeando Saude
almeda GmbH	Hooper Holmes Inc.	Sirona Health
AxisMed Gestao Preventiva Da Saude SA	Huntsville Hospital	StayWell Health Management
Blue Cross Blue Shield of Louisiana	Independence Blue Cross	Sykes Assistance Services Corporation
BlueCross BlueShield of Tennessee	Iowa Chronic Care Consortium	SynCare LLC
Capital Blue Cross	Liberty Dental Plan Corporation Inc.	The Olinger Group, Inc.
Centene	McKesson Health Solutions	Tufts Health Plan
CHRISTUS Health	Medco Health Solutions Inc.	U.S. Preventive Medicine
Daman National Health Insurance Company	MedCom Care Management, Inc.	UnitedHealth Group
Fresenius Health Partners	Microsoft	Unity Health Insurance
Geisinger Health Plan	Milliman Inc.	ValueOptions
	Nurtur	Walgreens Co.
	PreferredOne	
	PricewaterhouseCoopers LLP	

Clinical and care management (e.g., engagement strategies; delivery modalities, such as Web-based and text messaging; case management; health coaching)

ActiveHealth Management Inc.	GlaxoSmithKline	Nurtur
ADVANTAGE Health Solutions	Health Diagnostic Laboratory, Inc.	PreferredOne
Aetna Inc.	Health Dialog Inc.	PricewaterhouseCoopers LLP
Alere	HealthMedia Inc.	Providence Health & Services
AllOne Health Management Solutions	HealthNow NY, Inc.	PureWellness
almeda GmbH	HealthSciences Institute	SCAN Health Plan
AxisMed Gestao Preventiva Da Saude SA	Healthways Inc.	Secure Health
Blue Cross Blue Shield of Louisiana	Healthwise, Inc.	Semeando Saude
Blue Cross Blue Shield of Tennessee	Home Access Health Corporation	Sirona Health
Capital Blue Cross	Hooper Holmes Inc.	StayWell Health Management
Centene	Huntsville Hospital	Sykes Assistance Services Corporation
CHRISTUS Health	Independence Blue Cross	SynCare LLC
Daman National Health Insurance Company	Iowa Chronic Care Consortium	Tufts Health Plan
Deloitte Svcs. LLP Life Sciences & Health Care	Liberty Dental Plan Corporation Inc.	U.S. Preventive Medicine
EyeMed Vision Care	McKesson Health Solutions	UnitedHealth Group
Fresenius Health Partners	Medco Health Solutions Inc.	Unity Health Insurance
Geisinger Health Plan	MedCom Care Management, Inc.	ValueOptions
	Microsoft	Walgreens Co.
	Milliman Inc.	WellMed
	NaviNet Inc.	

Infrastructure and HIT (e.g., remote monitoring, mobile technologies)

ADVANTAGE Health Solutions	AxisMed Gestao Preventiva Da Saude SA	Daman National Health Insurance Company
Aetna Inc.	BlueCross BlueShield of Tennessee	Deloitte Svcs. LLP Life Sciences & Health Care
Alere	Centene	Fresenius Health Partners
almeda GmbH		

Geisinger Health Plan	Microsoft	Corporation
HealthMedia Inc.	Milliman Inc.	SynCare LLC
Healthways Inc.	NaviNet Inc.	Tufts Health Plan
Healthwise, Inc.	Nurtur	U.S. Preventive Medicine
Huntsville Hospital	PricewaterhouseCoopers LLP	UnitedHealth Group
Independence Blue Cross	Providence Health & Services	Unity Health Insurance
Iowa Chronic Care Consortium	SCAN Health Plan	ValueOptions
Liberty Dental Plan Corporation Inc.	Semeando Saude	Walgreens Co.
McKesson Health Solutions	StayWell Health Management	WellDoc Inc.
	Sykes Assistance Services	

Operational management (e.g., physician contracting and payment strategies, performance measures, program evaluation)

ADVANTAGE Health Solutions	Health Diagnostic Laboratory, Inc.	Pharos Innovations
Aetna Inc.	Health Dialog Inc.	PreferredOne
AllOne Health Management Solutions	HealthMedia Inc.	PricewaterhouseCoopers LLP
almeda GmbH	HealthNow NY, Inc.	RAND
Blue Cross Blue Shield of Louisiana	Healthways Inc.	StayWell Health Management
BlueCross BlueShield of Tennessee	Huntsville Hospital	Sykes Assistance Services Corporation
Capital Blue Cross	Independence Blue Cross	Tufts Health Plan
Centene	Iowa Chronic Care Consortium	UnitedHealth Group
Daman National Health Insurance Company	Liberty Dental Plan Corporation Inc.	Unity Health Insurance
Deloitte Svcs. LLP Life Sciences & Health Care	McKesson Health Solutions	URAC
EyeMed Vision Care	MedCom Care Management, Inc.	ValueOptions
Fresenius Health Partners	Mercer LLC	Walgreens Co.
Geisinger Health Plan	Microsoft	
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