What Is Population Health, Anyway?
A Five-Part Series
Part I: From a Theoretical to an Operational Definition

Last year, everyone in healthcare was talking about ***clinical integration***. This year's buzzword is ***population health***. In our previously published *Glossary of Terms for Payment and Delivery System Reform* we offered a simplistic definition of this term:

> This academic discipline, developed in Canada, studies why people who live in different locations experience different degrees of health and wellness. Research in this field focuses on social determinants of health: education, wealth, geographic location, and class. Many who study population health believe your zip code is more important than your genetic code in predicting health outcomes.

We now realize that describing population health as an academic discipline misses the mark. Instead, to provide any real meaning, we must move from a *theoretical* to an *operational* definition of population health.

To this end, population health needs to be put into the context of how to manage it, *i.e.*, what must occur operationally to achieve improved health status of the defined population.

Population health management is generally regarded as a four-step process:

1. Identifying those high-risk and rising-risk individuals in the defined population; *i.e.*, risk stratifying the population.

2. Defining and implementing clinical practice guidelines and care management programs among the provider team.

3. Engaging identified individuals using these guidelines and services.

4. Ensuring healthy individuals receive regular preventive services and wellness resources.

This implies population health has three operational aspects that must be addressed: a ***clinical*** aspect, an ***organizational*** aspect, and a ***technical*** aspect. Over the next two weeks, we will examine each of these aspects in a separate blog entry. The final entry in this five-part series will be our ***10-step plan of attack for population health***.

In our nation's historical fee-for-service-based healthcare economy, providers interact with patients only when they present to the physician's office or to the hospital or its emergency room; *i.e.*, *sick care*. To impact population health, providers must proactively interact with patients to promote healthy lifestyles; *i.e.*, *wellness care*.

In pursuit of population health, our healthcare system must shift from an *event* focus to a *process* focus. It must address the health of the whole person and all of the social, environmental, and hereditary factors that impact health. Providers must learn and deploy methods of treatment that achieve

efficiency and improve the overall health status of the population for which they are responsible. In addition, the individuals comprising the population itself must be engaged in the process and take responsibility for their health and well-being more directly and personally, while guided by the providers.

We now have set our sights on the Triple Aim: the simultaneous pursuit of improving the experience of care, improving the health of populations, and reducing per capita costs. When he first spoke of this new direction for healthcare, Dr. Don Berwick with the Institute for Healthcare Improvement (and later acting CMS Administrator) identified a corresponding three-part foundation from which to reach for the Triple Aim: (1) the enrollment of an identified population, (2) a commitment to universality for its members, and (3) the existence of an organization - an "integrator" - that accepts responsibility for that identified population. As envisioned by Dr. Berwick, the integrator's role would include partnership with individuals and families, redesign of primary care, population health management, financial management, and macro system integration.[1]

As today's healthcare organizations strive to become integrators, they must appreciate how all aspects of their current operations – clinical, organizational, and technical – must change to meet the demands of population health. Through this transition, these organizations will move from healthcare providers to population health champions.

Next Up: The Clinical Aspect of Population Health – Thursday, November 12

The Organizational Aspect of Population Health – Tuesday, November 17

The Technical Aspect of Population Health – Thursday, November 19

A 10-Part Plan of Attack for Population Health – Monday, November 23

[1] Berwick, Donald M., Thomas W. Nolan, and John Whittington. *The Triple Aim: Care, Health and Cost*, HEALTH AFFAIRS 27, no. 3 (2008): 759-769.

What Is Population Health, Anyway?
Part II: The Clinical Aspect

*In our earlier **blog entry**, we posited that the term "population health" is rather meaningless unless stated in terms of how it is implemented, which involves the application of the clinical, organizational, and technical aspects of population health management. In this blog, we focus on the first of those three aspects.*

If the key to achieving the "Triple Aim" is to address the social determinants of health for a defined population, as some have suggested, it is the providers on the front line who must create and deploy a plan of action. Hospitals are the logical focal point of healthcare in a community, and a hospital's medical staff is on the front line of interaction with the individual patients who comprise the defined population. These hospital/physician teams logically become the "integrators" Dr. Don Berwick suggested must accept responsibility for organizing efforts to accomplish the Triple Aim.

Obviously, a new and intense level of cooperation is demanded of this team of administrators and providers. In the past, hospitals and their physician staffs were competing for the same healthcare dollars, but now collaboration to achieve efficiencies is demanded. Cuts in hospital reimbursement can only be accommodated with the help of physicians who work with hospital administration to find ways to reduce costs and maximize the effectiveness of hospitalization.

Physicians need hospitals, and vice versa. If these providers are going to have any impact on the social determinants of health, which we maintain they must, then other organizations and entities in the community serving the defined population must be engaged as well. Those contributing entities naturally will look to the hospital/physician organization as the integrator - the *Organizational Hub* - to lead a community discussion and issue a call-to-action focused on population health improvement.

***Physician Engagement*.** There are many challenges to achieving the level of cooperation that is demanded. Certainly, physicians are essential to the process of shifting the focus of healthcare delivery from the existing episodic sick-care model to a system yielding value. But physicians often are the ones who are the most perplexed, depressed, overwhelmed, threatened, and downright angry about the direction healthcare delivery is headed. While physicians may, in their hearts, understand the need for change and concur with the ultimate goal, the process of getting there has many of them totally confused and defeated. Unfortunately, they don't necessarily see the hospital as a natural ally.

One of the first steps necessary for hospitals to engage physicians is to repair any broken trust that may have arisen between the hospital and its medical staff. Such schisms are common. They must be confronted directly and reconciliation achieved before the hospital/physician Organizational Hub can provide any sort of meaningful leadership in the community to address the challenges of population health and its management.

Secondly, hospitals must address the challenge of sustaining physicians emotionally and financially while engaging them in the process of change. Emotional stability flows from having the ability to control one's environment, and it is this very sense of loss of control that has physicians so out of sorts.

When we balance the enormous need to reinvent clinical processes with physicians' need to gain control of their environment, the obvious answer for hospitals is to invite the physicians into a structured process that examines everything from clinical protocol to hospital procedures and business practices that are refocused on Triple Aim objectives. Physicians will engage if their ideas and opinions are valued.

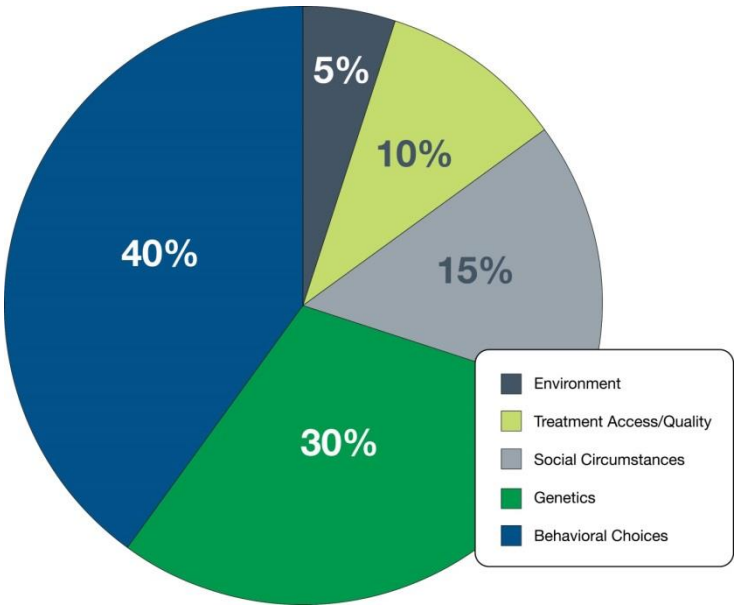
The efficiency and effectiveness of clinical processes are at the heart of creating value. Only physicians can effectively drive the development and deployment of the most efficacious treatment protocol. Only physicians have the prestige and the opportunity to meaningfully engage patients in the process of managing their own health. Only physicians can meaningfully engage their peers in monitoring providers' adherence to protocol and manage the efficiency with which care is delivered.

Physician Leadership. Identifying effective physician leadership is key to establishing a workable partnership between the hospital and its medical staff. Many healthcare organizations seeking to implement effective population health management strategies are calling upon a new C-suite leader, the Chief Population Health Officer (CPHO), to lead the Organizational Hub's efforts. This relatively new position is often a physician executive who reports directly to the hospital CEO. He or she is charged with developing and implementing the Hub's population health management strategy.

The CPHO job description includes responsibility for complex case management; overseeing disease management programs; implementing health risk assessments; devising wellness and lifestyle management strategies; developing health education programs; monitoring population health indicators such as patient activation, patient satisfaction, quality of life, actuarial analysis of risk evaluation methodologies; and overseeing managed care contracting.

Physicians have to be at the table when clinically integrated processes are developed, and they must accept the invitation to participate lest they have processes foisted upon them. It is not reasonable to expect every physician to participate actively in the role of planner and administrator of new clinical processes. Each physician, however, must at least accept responsibility for becoming aware of the dialogue and monitoring the change that is occurring around him or her.

Expanding the Team. As physicians and hospital leaders begin their collaborative efforts, they also must realize that they are part of a much larger, very diverse team that is required to achieve improved population health. Access to quality medical treatment accounted for only 10% of a person's health status. Behavioral choices such as diet, physical activity, and substance abuse; social circumstances such as education, employment, housing, crime exposure, and social cohesion; genetics; and environmental conditions all impact population health status far more profoundly.



It has been argued that one's zip code may be more important to health and wellness than one's genetic code. This concept is the underpinning of a new discipline known as healthography.

The Robert Woods Johnson Foundation has created city maps which highlight the enormous disparity in the status of nearby neighbors. For instance, babies born in Washington, D.C., separated by a few metro stops, may experience as much as a 7-year difference in life expectancy. Newborns in different neighborhoods in Kansas City, Missouri, can have a 14-year difference in life expectancy. Babies delivered in different New Orleans locations can be expected to show a 25-year difference in life expectancy.

To impact all these factors and improve population health status, the core team of physician and hospital leadership will have to involve a variety of other community stakeholders: therapists, behavioral health professionals, social workers, community healthcare organizations, educators, social service agencies, urban planners, law enforcement agencies, politicians, the judicial system, the faith community, restaurants, gyms, and retailers.

Improvement in population health will require engagement of all the social and medical systems that impact the quality of patients' lives. It will have to consider the impact of healthography and determine the causes of the dramatic disparities it illustrates. The hospital's CPHO logically should serve as the catalyst for community engagement and be tasked to develop meaningful relationships with community partners that traditionally have been ignored by healthcare leaders.

Finally, and perhaps most importantly, the expanded team of providers and community stakeholders must devise ways to engage the individual patients who comprise the population served to pursue improving their own personal health and healthy lifestyles. That may be the biggest challenge of all.

Patients have almost been trained to live in ignorance of the impact their lifestyle choices have on their health. Often, they live recklessly and expect simply to have health problems "fixed." Environmental influences such as fast food ads, the size of soft drink cups, food portions served in restaurants, the tolerance of tobacco and drug use, movies and advertising that portray risky lifestyles, and the impact of poverty create strong headwinds of social mores that must be overcome to successfully achieve gains in

population health. Patients need to know they have responsibility in this effort, and they must be encouraged to accept that responsibility.

When hospitals, their medical staffs, community partners, and stakeholders are brought into alliance to pursue population health improvement, the definition of population health will begin to crystallize. With sharpened focus, terminology will cease to be an obstacle to defining strategic objectives and developing realistic tactics that harness the power of providers to measurably improve the health status of the defined population they are serving.

Unfortunately, crystallized vision and unified effort are squandered without an effective organization to guide and direct the army of stakeholders required to effect change in a population's health status. Next up, we will discuss the organizational aspects of population health as we continue exploring this elusive concept.

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The Organizational Aspect of Population Health – Tuesday, November 17

The Technical Aspect of Population Health – Thursday, November 19

A 10-Part Plan of Attack for Population Health – Monday, November 23

What Is Population Health, Anyway?
Part III: Organizational Aspect

*In our earlier **blog entry**, we posited that the term "population health" is rather meaningless unless stated in terms of how it is implemented, which involves the application of the clinical, organizational, and technical aspects of population health management. We previously examined the **clinical aspect**; now, we focus on the organizational aspect.*

To accomplish the herculean task that lies before core hospital/physician teams as integrators and their broader resource teams of community experts, organizational functionality and discipline are essential. If the goals of the "Triple Aim" are to be realized, the process to be undertaken must result in complete culture change, refocusing the entire enterprise on population health improvement.

Consider that the hospital has thrived on a fee-for-service payment system that relies on the hospital being filled to capacity with its medical staff optimizing the use of its beds, ORs, laboratory, and imaging capabilities. The medical staff members have functioned in silos of specialties, increasing their revenues by the number of times they tested or touched the patient. Both the hospital and its physician staff have been motivated by helping patients with each isolated healthcare issue, a specific episode of illness or injury. Neither has been incentivized to collaborate to achieve better health status outcomes more efficiently.

Now consider that both the hospital and physician staff will be rewarded in the future if they demonstrate patient satisfaction scores superior to their competitors and health outcomes that actually keep people out of the hospital's expensive confines. In this zero-sum reimbursement environment, those who fail to compare favorably will be penalized financially. The funds realized from the penalties assessed will be used to reward those achieving the superior results.

In addition, metrics have been developed and the analytics capability established that will allow comparisons to be made and published. The results will become public knowledge (read: transparency). As these new payment and reporting models take hold and a grade card becomes public, the very future and continued success of the hospital and its co-dependent medical staff will only be realized through their unified attack on the detriments to population health.

The successful hospital and medical staff must collaboratively develop the systems and processes to meet this challenge. An environment of trust must be created within which both can confront their common challenges. The process also must involve the expanded group of community experts and stakeholders in some meaningful fashion.

The Organizational Hub. The hospital has the requisite organizational and administrative expertise to lead change. It is the most likely candidate to take the lead in establishing the structure and process necessary to develop a population health action plan. In taking the initiative, however, the hospital must solicit and honestly consider the input of its physician staff. The structure in which to house the planning process can be called the "Organizational Hub" for healthcare reform efforts in the community.

The structure will vary in each Organizational Hub, but the Hub must, at its core, provide an environment of trust which encourages creativity and sound decision making. It must solicit and honor

ideas and opinions from all participants. The structure also must be built for growth in order to include the involvement of community resources and be capable of morphing into an operational structure to implement the plans which are cooperatively developed.

An example of this integrative process was successfully undertaken by Flagler Hospital in St. Augustine, Florida. When challenged by community employers and commercial payers to provide better value in delivered care, the hospital board invited the members of the medical staff to help design a structure and process that would meet the challenge. The hospital board actually asked the medical staff to propose its desired organizational structure, one that would engage physician involvement.

When presented with a carefully developed and well-thought-out proposal, the board accepted and launched – with the medical staff – a separate physician/hospital-owned organization which was designed to harness the respective capabilities of both parties to achieve their common purpose. (*See* our White Paper, "Zero to CIN in Less Than Nine Months," which describes the Flagler story.)

As tertiary and quaternary hospitals work to change their culture and orient toward population health management, they also will want to secure relationships with their cohort of referring hospitals, many of which are struggling with the same pressures. Engaging those referring hospitals in the process of population health management will solidify the referral relationship and aid those smaller institutions in their efforts. The formation of collaborative networks designed to engage providers regionally to impact population health is improving patient care across the continuum from rural to quaternary and bringing urban hospital capabilities cost-effectively to the rural bedside.

The University of Missouri Hospital, an academic medical center, has formed such a regional collaborative with five rural community hospitals known as the Health Network of Missouri (HNM). Through a disciplined planning process, the hospitals created a co-owned governing entity. The governing entity provided each of the hospitals, regardless of size, equal participation in the process of creating a clinically integrated network of hospital and physician resources aimed at improving the population health of the residents of Central Missouri.

There are many other examples of structures created to promote the concept of *independence through interdependence*. Hospitals are able to do the hard work of converting their cultures from volume-focused to value-focused. Each has recognized the need for physician involvement in the process. Each has embraced the Triple Aim as a goal. Each believes that change is possible when trust is given and received in return, collaboration is rewarded, respect for another's unique capabilities is honored, and the synergy of cooperation is allowed to flourish.

The Community Hub of Wellness and Health. The hospital or health system, in harmony with its medical staff, will naturally serve in the role as the *Community Hub of Wellness and Health* (CHWH). As financial incentives change to encourage prevention, wellness, and consideration of the social determinants of health, medical care will flow from the CHWH into the community. In this model, the hospital naturally will be relied upon as the primary coordinator of community care toward the end of improving population health.

As a result of the awakening to the importance of population health management, remarkable change is starting to emerge. Take, for instance, a Kaiser program that serves as a great example of a CHWH. It brings farmers' markets into 30 hospital facilities in four states.

Dr. Preston Maring introduced the Friday Fresh Farmers' Market at Kaiser Permanente Oakland Medical Center in May 2003. Since then, the market has grown to include a system that supplies locally grown fruits and vegetables for 23 Kaiser hospital kitchens, in addition to supplying the weekly farmers' markets in those hospital service areas. Dr. Maring also has helped establish a seasonal market at GM-Toyota's new United Motor Manufacturing Inc., plant in Fremont, California, where 5,000 people work.

Kaiser also worked with Sustainable Economic Enterprises of Los Angeles to open the Watts Healthy Farmers' Market. That market provides not only farm fresh food options, but also health screenings, nutrition education, and other health promotion activities for the community. Dr. Maring noted, "Markets change the community. They provide good food, fun, and a meeting place."[1] Such programs also create new, trusting relationships among the hospitals, farmers, food distributors, and other employers and can only increase the standing of the hospital in the community, truly establishing it as the Community's Hub of Wellness and Health.

The Community Health Needs Assessment. A comprehensive Community Health Needs Assessment (CHNA) can serve as the perfect launching pad for a population health management effort. Bon Secours Baltimore Health System conducted such an assessment over the period of 2009-2012 that included meetings, interviews, community summits, and literature studies. It engaged community members with public health knowledge, the broad interests of the communities it served, as well as individuals with special knowledge of the medically underserved, low-income, and vulnerable populations, and people with chronic diseases.

Bon Secours' assessment ultimately determined that to address the community's most significant health needs, it needed to develop an action plan which:

- Helped make the Southwest Baltimore community-of-focus a place where residents could live long, satisfying lives by being proactive about their health and wellness, understand the importance of healthful eating, and have access to healthful foods in a variety of locations and outlets, including the hospital.

- Made the community a place where residents were ready to work, were self-sufficient, and had access to jobs that enabled them to support themselves and their families.

- Helped the community to become more environmentally friendly, more lush with nature and green open spaces, lead-free, and a place with fresh air to breathe and safe water to drink.

- Developed a coalition of senior leaders from the organizations which comprised the community's health safety net.

- Focused on primary care engagement, expanded primary care capacity, and prepared for healthcare payment and delivery transformation.

Launching this population health management plan-of-action not only has begun improving the lives of the patients served by Bon Secours, but it has cemented the hospital as an integral partner in securing the future of the community it serves. It is thereby securing its own future.

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[1] M. MacVean, *Kaiser Permanente Farmers Markets Put Nutrition Within Reach*, Los Angeles Times (May 20, 2009), available at http://www.latimes.com/food/la-fo-kaiser20-2009may20-story.html.

Engaging clinicians and organizing for change are the first two aspects of population health management and improvement which inform the understanding of population health as a concept. Next up, we will discuss the technical aspect of population health.

Next Up:

The Technical Aspect of Population Health — Thursday, November 19

A 10-Part Plan of Attack for Population Health — Monday, November 23

What Is Population Health, Anyway?
Part IV: Technical Aspect

*In our earlier **blog entry**, we posited that the term "population health" is rather meaningless unless stated in terms of how it is implemented, which involves the application of the clinical, organizational, and technical aspects of population health management. We previously examined the **clinical aspect** and the **organizational aspect**; finally, we focus on the technical aspect.*

Health information technology provides the foundational support for the workflow and process changes necessary for effective population health management. Those changes ultimately will foster the strong healthcare relationships needed to implement organized systems of care; coordinate care across multidisciplinary teams and settings; enhance access to primary care; centralize resource planning; provide continuous care either in, or outside of, office visits; promote patient self-management education and healthy behavior and lifestyle changes; and facilitate essential communication among providers and patients.

The Agency for Healthcare Research and Quality has identified five domains of health information system functionalities to support population health management:

- Domain 1: Identify subpopulations of patients who require preventive care or tests.
- Domain 2: Examine detailed characteristics of identified subpopulations.
- Domain 3: Create reminders for patients and providers to make information actionable.
- Domain 4: Track performance measures in real time to compare care delivered to national guidelines.
- Domain 5: Make data available in multiple forms (e.g., printed, exported, or graphically displayed).

Presently, there is a significant gap between existing and optimal functionality for population health management. Progress is being made, but the lack of cost-effective health information technology solutions remains a major impediment to fully integrated population health strategies.

Providers are particularly challenged when selecting and implementing technology solutions. Many have adopted EHRs, but that is only the first step. A wide range of other applications will be required to implement the functionalities identified above. Further, systems must be adaptable to a rapidly changing payment and regulatory environment and the light-speed change of technology itself.

The Accelerating Pace of Technological Development. Emerging daily are cutting edge applications that are making the initial iteration of health information exchange obsolete. No longer must providers query raw form records from individual episodes of patient/provider interaction in order to get the actionable data they need for the specific analysis they are conducting. Selective data extraction from multiple patient records and collation of that specific information for more efficient analysis is becoming feasible.

Increasingly, healthcare executives are looking beyond the vendors who supply their core financial and clinical information systems for the IT capabilities needed for population health management. The more specialized, creative technology developers are capturing a larger portion of the population health management space.

As a result of the dynamics inherent in identifying and deploying IT solutions to support population heath management, healthcare executives are understandably moving cautiously – developing their population health strategy, identifying gaps in IT needs to support it, and addressing the urgent IT needs such as automated patient outreach capabilities and patient communication. But they are keeping their options open when considering the more complex analytical applications that will ultimately be required for the development of more comprehensive strategies to address population health needs and effectively manage patient stratification—those actions that truly move the needle in improving population health status.

Impact of Disruptive Technology. The IT space is being further complicated by the proliferation of disruptive technologies that are likely to cause fundamental changes in access to, and delivery of, healthcare. Consider smart phone applications that harness the device's capabilities—computing power, camera, audio, video, motion sensor, and GPS—in new ways to manage health and wellness. There are fitness and weight control apps, exercise programs and progress monitoring apps, apps to monitor glucose for diabetics, heart rate and blood pressure apps, sleep hygiene apps, and stress reduction apps, just to name a few.

What happens when all the data such devices produce find their way into the medical record? How will data be used productively and applied to benefit the patient? How might that information be used to impact population health management? How will providers cope with the influx of information and effectively deal with it? What apps are being developed daily that could come online virtually overnight and will totally disrupt how healthcare is monitored and delivered?

It's somewhat terrifying to realize these rhetorical questions are already being answered. Creative digital geniuses can use established technology systems to tinker freely with ideas and develop and market new applications with no investment other than their time. Digital disruption is not only reducing the barriers of entry into the market, it is obliterating them. Development of technological solutions that used to take years from development to market can now be done in days. Large IT investments can be rendered obsolete overnight.

Rapid Change – Challenges and Opportunities. So how do leaders contend with the volatile environment of such a key component of the organization's population health narrative? First, management must obviously be prudent in making any large investment in IT. Having the ability to meet immediate needs while remaining nimble enough to capitalize on new and emerging technology that dramatically enhances capabilities is a prudent planning strategy, as we noted above.

Second, perhaps the challenge can, and should be, recognized as an opportunity. Digital innovators are having a hard time maximizing the potential that comes from their efforts and creativity. They need some connection to healthcare providers who can channel that power productively. We often encounter digital developers who have a nifty new application, but who have no appreciation of how that application can really be used to impact the healthcare environment.

Those well-meant efforts would be better channeled were there better communication between digital developers and healthcare leaders grappling with the complexity of population health efforts. Grasping

that opportunity, healthcare leaders may be able to dramatically cut their IT investment with technology solutions tailored to their specific needs. Really strong solutions could be marketed to others, perhaps creating a whole new source of revenue for the healthcare organization.

The potential benefits from the use of digital technology are illustrated by a recent longitudinal study by the Veteran's Health Administration (VHA). The VHA has been using a wide variety of technology, including videophones, messaging devices, biometric devices, digital cameras, and telemonitoring devices in its home telehealth program since 2003.

A retrospective analysis of VHA data from 2009 through 2012 found that VHA's routine use of such digital technology has been successful in coordinating care and more efficiently managing patients with complex chronic conditions. For example, after 12 months of home telehealth (non-institutional care) the mean annual healthcare costs for VHA home telehealth patients fell 4%, while the corresponding costs in a matched cohort group increased 48%**.**

Without harnessing the power of technology, the reach of population health management will be severely limited, extending only so far as an individual physician's working knowledge of his or her patients' medical conditions and social circumstances. Properly aligned with the clinical and organizational aspects, technology is the key to unlock the potential of population health management.

Next up: A 10-Part Plan of Attack for Population Health— Monday, November 23

What Is Population Health, Anyway?
Part V: A 10-Part Plan of Attack for Population Health

*In our earlier **blog entry**, we posited that the term "population health" is rather meaningless unless stated in terms of how it is implemented, which involves the application of the clinical, organizational, and technical aspects of population health management. We previously examined the **clinical aspect**, the **organizational aspect**,* and the ***technical aspect***.

Having identified the three aspects of population health, thought leaders within the **Organizational Hub** can then define the concept of population health for their own population through the strategies and tactics they develop to improve the status of health for that population. The question then becomes: what constitutes a viable, common-sense population health management program?

Let's revisit the notion that population health management is key to thriving and surviving in the new world of healthcare payment and delivery. Value will be rewarded over volume, and new methods will need to be adopted to promote wellness for the population served. Value will be determined using increasingly more precise metrics gauging patient satisfaction and outcomes. Strategies will be aimed at the entire population served while individual needs within that population will continue to be addressed.

Let's also accept the fact that the hospital and its medical staff must be the initiators of action. They must be harnessed together, developing administrative and clinical capabilities concurrently to manage population health. They must bring together other community services and resources that impact the social determinants of health and serve as the Organizational Hub for community action.

Given that starting point, the Organizational Hub should consider the following plan of attack:

1. Create the trust environment within which hospital administrative leaders and physician leaders can begin to develop a common understanding of the urgency of preparing the organization to move from volume to value, recognizing the compelling need to design processes that produce value, and immediately undertake the task of reforming their mutual business and clinical operations to succeed in a rapidly changing healthcare environment.

2. Identify the population served: *i.e.*, identify the community which comprises the population to be addressed by a planning process.

3. Conduct a comprehensive Community Health Needs Assessment (CHNA) which engages every entity in the community that has an impact on the social determinants of health for the residents of the community. Engage those constituent organizations in an honest evaluation of the community's population health status and a detailed planning process designed to address areas of concern in a deliberate and organized way. The CHNA must identify the sources of relevant clinical, demographic, and financial data associated with that population; the resources available to attempt to address population health needs; and the gaps in capabilities and resources needed to impact population health.

4. Invest in diverse, patient-oriented access to facilities and IT infrastructure. Facilities should be designed to provide convenient care sites for patients and capabilities for outpatient, office-oriented care. At a minimum, the IT system should be able to perform network-wide scheduling, provide patients with a portal to their own healthcare information, provide a patient-friendly means of communication with providers, and provide a virtual care interface for providers within the network.

5. Perform data analysis that is aimed at identifying care gaps. By integrating evidence-based medicine best practices garnered from national and local sources with the organization's claims data and clinical data for chronic disease states, care gaps for individual patients and the population as a whole can be identified. Clinical data will show what clinical plan was pursued. Claims data will show what actually was done and the effectiveness of the care rendered.

6. Stratify patients into risk groups. Using data analytics, patients can be sorted into three risk groups: healthy, intermediate or rising risk, and high risk. Resources can then be allocated toward the groups in ways that yield the greatest return on investment. For instance, strategies advocating exercise and healthy eating can be implemented at low cost and have general application across all three groups. Strategies designed to keep patients in the rising-risk category from moving to the higher-risk category should perhaps receive the most attention because of the higher return on investment that can be realized. By taking advantage of new Medicare payment codes to pay for chronic care management, providers can now receive compensation for more proactive management of high-risk, high-cost patients.

7. Engage and activate patients within the population to take responsibility for their own health. The Patient Activation Measure, developed by Judith Hibbard, and the 43 engagement behaviors, identified by Jesse Gruman of the Center for Advancing Heath, is an excellent tool for engaging the population. The effort must be aimed at both the population level (to address the community social determinants of health) as well as at the specific patient level (engaging the patient in decisions and habits that impact their personal health status).

8. Place in motion a continually evolving and dynamic plan that incrementally begins to manage care for the population. It should contemplate a team approach, led by the Organizational Hub, but employ the skills and resources of all the assets of the community in which the population resides. Care must be coordinated across the continuum of care, specialized for the patients based upon the stratification of risk groups. The healthy group should receive wellness and prevention programs; the rising-risk group will need frequent screening for the condition for which they are at risk and interventions to encourage lifestyle changes, and the high-risk group will need care strategies to prevent further complications of their disease or diseases (as is frequently the case).

9. Consider an investment in a lean, scalable care team that can expand the physician staff's capabilities to effect population health management and allow practitioners to practice at the top of their respective licenses, doing what they presumably like doing best.

   Strategically deployed advanced practitioners can greatly improve patient interaction and relieve physicians of time commitments. An expanded role for pharmacists can accelerate access to care, monitor medication therapy management, and prevent readmissions to the hospital. Robust extended-care resource teams can provide the necessary patient monitoring

and interaction to effect lifestyle change and assure patient compliance with care plans. The care team can be empowered to care, communicate, and coordinate – all keys to managing care. An integrated behavioral health function can have dramatic impact on patients' compliance with care plans and significantly assist patients with co-morbidities.

10. Measure and compare outcomes with baseline data to demonstrate progress and success. The basic IT system used will need the capability to identify clinical processes, care outcomes, cost of care, and patient satisfaction scores. A system of continual process improvement will need to be implemented wherein the outcomes measured can identify areas that are capable of improvement so that the planning team can address those gaps and continue to advance capability and improve process.

Ultimately, population health is defined by the healthcare executives, clinicians, community stakeholders, and individuals comprising the population in question. The definition emerges from the process of harmonizing the views and talents of those seeking to positively impact the population's health status. Each aspect of population health identified above – clinical, organizational, and technical – must be uniquely adapted to address the multiple needs of the defined population and the complexity of environmental factors within its community.