The Promise of Population Health Management

New Technologies Are Required To Automate Expanded Physician Workflow

PHYTEL

Engaging Patients. Better Outcomes.

Contents

The Challenge:

The protracted debate over healthcare reform has highlighted the shortcomings of our healthcare system. While the Patient Protection and Affordable Care Act promises to expand coverage to more than 30 million people who are currently uninsured, this insurance will be worth little unless they have access to care. But with the primary care workforce declining, and a big increase in the demand for care anticipated, access is likely to shrink in the coming years (Phillips and Bazemore).

Quality is also an issue. The U.S. has a "sick care" system that is not designed to take good care of chronically ill patients, who generate about three-quarters of health costs, or to prevent people from getting sick (Institute of Medicine, Crossing The Quality Chasm, 3-4). According to a famous RAND study, American adults receive recommended care only 55 percent of the time (McGlynn, Asch, et al.). The gaps in treatment lead to unnecessary complications, ER visits and hospitalizations—a major component of the waste in our system. So even if we had enough healthcare providers, the rising costs of chronic disease care would soon exceed our collective ability to pay for it.

The fragmentation of our delivery system and the poor communication among providers are prime reasons for the poor quality of care that many patients receive. For example, readmissions of patients with congestive heart failure have been on the rise for years. Today, about 20 percent of Medicare patients with CHF are readmitted within 30 days after discharge from the hospital. Some researchers have speculated that this may be related to shortter lengths of stay in the hospital (Bueno, Ross, et al.). But other studies show that better care management on the outpatient side could eliminate the majority

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of these readmissions (Berwick, Nolan and Whittington). In many cases, that care is not being provided because of poor handoffs from inpatient to outpatient care and lack of follow-up with the patients after discharge. In addition, there is no financial incentive for physicians to engage in the home care of patients, beyond the general supervision of home health nurses. In the case of heart failure, this continuous care is required to prevent emergencies that can lead to readmissions.

Except in a few large, integrated healthcare systems and government systems that take financial responsibility for care, physicians are not generally paid to treat patients outside of office visits or to coordinate their care across care settings. Partly as a result, the continuity of care is disrupted at many points (Sharma, Fletcher, et al.).

At the same time, non-medical determinants of health—which have a far greater impact on health than medical care—are not being properly addressed. Overeating, smoking, unsafe sex, lack of exercise, and other personal health behaviors are major components of health spending, yet physician counseling of patients is poorly reimbursed and usually confined to office visits for other problems.

For these and many other reasons, the United States spends roughly twice as much on healthcare as other advanced countries do, yet the outcomes of our patients are inferior in many respects (Davis, Schoen, et al.). Healthcare is rapidly becoming unaffordable for many people, and both the federal and state governments are being bankrupted by skyrocketing medical costs.

Clearly, we need a radical change. We must reorganize the financing and the delivery of healthcare to provide greater value to both patients and society.

Myriad proposals have been made to restructure our system. One of the most promising is the "Triple Aim" of the Institute for Healthcare Improvement, formerly headed by Donald Berwick, MD (Berwick, Nolan and Whittington). The Triple Aim program seeks to:

1) Improve the experience of care

2) Improve the health of populations

3) Reduce the per capita costs of care

This paper will address the second aim, "improve the health of populations." We believe that, by applying population health management principles, physicians and other providers can also improve the healthcare experience for patients while reducing cost growth to a manageable level.

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What Is Population Health Managent?

As Berwick and his colleagues point out in a paper on the Triple Aim (Berwick, Nolan, and Whittington), much of the current quality improvement efforts, such as "pay for performance" and Medicare's quality reporting programs, focus on single sites of care, including acute-care hospitals and physician practices. To really make a difference in outcomes, however, reformers must try to raise the quality of care and improve care coordination across all care settings. Also, this approach must be applied over a much longer period than that of a single episode of care.

These concepts lie at the core of population health management, which has been defined as a healthcare approach focusing on "the health outcomes of individuals in a group and the distribution of outcomes in that group." Former Kaiser Permanente CEO David Lawrence, MD, observes (Lawrence),

"Patients are just one of many such groups within a community. At any given time, most people do not worry about illness or wonder if they have one. They are not under treatment, and they see a physician infrequently. Yet for all people, lifestyles and behavior; race, culture, and language skills; and the environment in which they live are all important determinants of their individual health…Effective population health care includes interventions to moderate the impact of these powerful determinants [of health]."

So population health management, or PHM, as we will hereafter refer to it, addresses not only longitudinal care across the continuum of care, but also personal health behavior that may contribute to or prevent healing or disease. Based on the experience of Kaiser Permanente and other organizations that are dedicated to PHM (Lawrence book), here are some of the other aspects of this approach to care:

- An organized system of care. Healthcare providers must be organized, even if they're only electronically linked and have agreed to follow certain clinical protocols to improve the quality of care.

- Care teams. Physicians and other clinicians work in care teams to provide multiple levels of patient care and education on a consistent basis.

- Coordination across care settings. Patients have a personal physician who coordinates their care and guides them through the system.

- Access to primary care. Primary care is vitally necessary to make sure patient receive necessary preventive, chronic, and acute care.

- Centralized resource planning. Resources are allocated to make sure that individual patients receive all necessary care and that available resources are optimally applied across the population.

ACOs will have to stress non-visit care and disease management, including home monitoring of the sickest patients. They will have to build care teams that are capable of tracking patients' health status and ensuring that they receive recommended care.

• Continuous care. Providers are available to patients both during and between office visits, and all forms of communication, including secure electronic messaging, are appropriately utilized.

• Patient self-management education. With the help of printed and online materials, care teams help patients learn how to manage their own conditions to the extent possible.

• Focus on health behavior/lifestyle changes. Providers and the educational materials they offer reinforce the need for healthy lifestyles across the population.

• Interoperable electronic health records. EHRs are used to store and retrieve data, not only on individual patients, but on the status of the population. They are also used to track orders, referrals, and other care processes to ensure that patients receive the care they need. And by exchanging data with other clinical systems, interoperable EHRs provide physicians with information that help them make better decisions.

• Electronic registries. Whether or not registries are part of EHRs, they are important components of PHM, because they enable caregivers to track and manage all of the services provided to or due for their patient population, as well as subgroups of that population.

PHM or the major components of PHM are found mainly in group-model HMOs like Kaiser Permanente and Group Health

Cooperative of Puget Sound; large integrated delivery systems like Intermountain Healthcare, Geisinger Clinic, and the Henry Ford Health System; and the Veterans Affairs Health System and the Military Health System. Aspects of PHM are also being used in some other countries, such as the U.K. and Sweden (Berwick, Nolan and Whittington).

Obstacles To PHM

In the U.S., the biggest barriers to population health management are the fragmentation of care delivery; perverse financial incentives; a lack of managed care knowledge; and insufficient use of health information technology.

According to the Institute of Medicine's 2001 report, Crossing The Quality Chasm, "The current health care delivery system is highly decentralized…In a population increasingly afflicted by chronic conditions, the health care delivery system is poorly organized to provide care to those with such conditions…The challenge before us is to move from today's highly decentralized, cottage industry to one that is capable of providing primary and preventive care, caring for the chronically ill, and coping with acute and catastrophic services." The fee-for-service reimbursement system is the opposite of the payment approach that is suited to PHM. Fee-for-service incentivizes physicians to perform more services, rather than helping patients get well or preventing them from getting sick. Because third-party

payers usually pay doctors only for services performed in their offices, the hospital, or some other institutional setting, physicians have no incentive to communicate with patients online or on the phone or care for them at home. There are perverse incentives in other payment approaches, including capitation, which motivates doctors to do as little for patients as possible, and straight salary, which doesn't encourage them to work hard (IOM, Crossing The Quality Chasm, 181-206). But a new payment approach is needed for PHM.

Because most physicians are used to practicing

is going to become a reality. This includes not only EHRs and health information exchanges, but also registries and applications that use clinical protocols and sophisticated algorithms to identify individuals with care gaps and to trigger communications to those patients and their physicians. Despite the federal incentives that will start becoming available in 2011, and the threat of financial penalties later on, it will take some time before most doctors and hospitals have EHRs. But in the meantime, organizations that do acquire information systems

TEC plans to qualify as an ACO for Medicare's shared-savings program in 2012. The group's leaders believe that budgeting is the future of healthcare and that ACOs could be a key driver of that transition.

in the fee-for-service system, they have no idea how to manage care within a budget (Terry, 177-178). Budgeting is part of the central resource planning referred to above. Since there are limits to the available healthcare resources, physicians must learn how to order tests and perform procedures more appropriately. Many doctors will object that they must practice defensive medicine to guard against malpractice suits. Because physicians are so concerned about this, malpractice reform could help accelerate the evolution of PHM.

Finally, the healthcare industry needs to make much better use of information technology and improve the quality of data in the system if PHM

can begin to take advantage of the new information technologies to practice PHM.

Beginnings of Change

Over the past 15 or 20 years, approaches such as pay for performance and disease management have had a very limited effect on quality improvement. Pay for performance programs focus on a relatively small set of measures, confuse physicians with conflicting goals from multiple health plans, don't reward improvement, and often use sample sizes that are too small to show how well individual physicians are doing on particular metrics (Rosenthal, et al.)

Automated PHM tools ensure that the routine, repetitive work of managing population health is done in the background, freeing up doctors and nurses to do the work that only they can do.

Disease management, a systematic approach to caring for patients with chronic diseases, has taken two different forms. The Chronic Care Model, a method of integrating all of the care for particular chronic condition across providers and over time (Bodenheimer, Wagner, and Grumbach), requires the resources of a large organization, such as a group-model HMO, and cannot be readily applied in small practices, although they can undertake parts of it (Bodenheimer, Wagner, and Grumbach, part 2). The insurance-based model of disease management tries to overcome the fragmentation of the market by taking a more patient-focused approach. The insurers and third-party disease management firms rely on nurse care managers, who telephonically interact with patients to educate them about their condition and their health risks and work with them over time to effect behavior change. The major flaw in this model is that physicians are involved in the process only peripherally.

More promising models have emerged in the past few years. These include the patient-centered medical home (PCMH) and the accountable care organization (ACO).

The PCMH, which will be described in more detail in a later white paper, is designed to help primary-care practices of all sizes provide comprehensive primary care. Among its key components are a personal physician who is responsible for all of a patient's ongoing care; team care; a whole person orientation; care coordination facilitated by the use of health IT; a care planning process based on a robust partnership between physicians and patients; and enhanced access to care, including non-

visit care (AAFP, AAP, et al.).

While much progress is being made on the PCMH, practices that try to become medical homes encounter some significant obstacles. First, small primary-care practices may lack the time and the resources to transform themselves and acquire the necessary information technology (Nutting, Miller, et al.); second, they may find it difficult to gain the cooperation of specialists and hospitals; and third, most physicians do not receive adequate financial support from payers for coordinating care (Landon, Gill, et al.).

Accountable care organizations—the subject of another upcoming white paper—consist of hospitals and physicians that take collective responsibility for the cost and quality of care for all patients in their population. While related in some respects to the original HMO concept, the ACO grew out of the ideas of Elliott Fisher, a professor at Dartmouth Medical School, CMS Administrator Donald Berwick, and Commonwealth Fund President Karen Davis (Fisher, Berwick and Davis). It is complementary to the PCMH in the sense that it could enable primary-care physicians to benefit financially from improving care coordination. Conversely, ACOs cannot function without a strong foundation of primary care (Rittenhouse, Shortell, and Fisher).

ACOs may be single business entities, such as a group-model HMO or an integrated delivery system. But they could also involve an "extended medical staff" or a contracting network that includes a healthcare system. IPAs that have evolved into clinically integrated organizations could also serve as ACOs. While few ACOs exist today, the health reform legislation encourages their formation by allowing ACOs to share in savings they create for Medicare, starting in 2012 (Kaiser Family Foundation). Many healthcare organizations are interested, because they foresee that future changes in Medicare reimbursement may require hospitals and physicians to coordinate their efforts.

The widespread development of ACOs, perhaps with medical homes at their core, would provide a powerful impetus for a shift from the current care delivery model to PHM. With the backing of large organizations and the introduction of financial incentives that encouraged an outcomes-oriented, patient-centered care model, PHM could become the dominant model of healthcare.

The Crucial Role of Automation

Some observers have raised serious objections to this rosy scenario. Consultant and healthcare expert Jeff Goldsmith, for example, points out that the effort of insurance companies to pass financial risk to providers proved to be the Achilles heel of managed care in the 1990s (Goldsmith). This doesn't necessarily doom ACOs, however, because they will have to be accountable for quality as well as for cost. This should prevent a public backlash similar to the one that defeated

HMOs. In addition, information technology has advanced to the point where all patients in a population can be identified, risk-stratified, and provided with advanced self-management tools to prevent exacerbation of their illnesses. Physicians didn't have these tools in the heyday of HMOs.

David Lawrence, the former CEO of Kaiser Permanente, points to another problem: the difficulty that primary-care physicians would have in making the transition to the new delivery model. (While he cites this difficulty in regard to the medical home, the same criticism could be applied to ACOs, because primary-care physicians are the linchpin of care coordination in both models.) Lawrence believes that to increase access to primary care, we need to make use of "disruptive innovations," including retail clinics, employer-based wellness programs, home telemonitoring of patients with chronic conditions, and new methods of educating patients in self-management (Lawrence).

To be able to manage all aspects of health from wellness to complex care, healthcare organizations must assess the entire population, taking advantage of online or web-based programs. Patients can then be stratified into various stages across the spectrum of health. Those who are well need to stay well by getting preventive tests completed; those who have health risks need to change their health behaviors so they don't develop the conditions they're at risk for; and those who have chronic conditions need to prevent further complications by closing care gaps and also working on health behaviors. Technology can be very

helpful in assessing and stratifying patients and targeting interventions to the right people. The automation of the processes

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provides a more efficient and effective way to do population health management.

What's really needed for successful PHM is an electronic infrastructure that performs much of the routine, time- and labor-intensive work in the background for physicians and their staffs. Fortunately, most of the tools for building such an infrastructure already exist, although they tend to be scattered and underused. When these tools are pulled together and applied in a coordinated, focused manner, they will be a powerful force for change.

Technology is not a substitute for the physician-patient relationship, which is the basis of continuous care and can have a major, positive effect on health behavior. But to the extent that automation tools are used to strengthen that relationship and enable physicians to provide value-added services that help patients improve their health, this technology can help drive population health management (Lawrence).

Three Pillars of PHM

To do PHM properly, physicians and their care teams must strengthen their relationships with patients in a variety of ways, including making sure that they come in for needed preventive and chronic care. Care teams, which include physicians, midlevel practitioners, medical assistants, and nurse educators, must optimize the services they provide to patients during office visits. And they must extend their reach beyond the four walls of their offices to provide a continuous healing relationship. The

appropriate IT tools can facilitate achievement of all three goals while lessening the burden on practices.

One of the best ways to strengthen the doctor-patient relationship is to combine an electronic registry with an automated method of communicating with patients who are overdue for preventive and/or chronic care services. The patient demographic and clinical data in the registry can come from billing systems or electronic health records, as well as labs and pharmacies. The registry provides lists of patients with particular health conditions and shows what has been done for them and when. By using evidence-based clinical protocols, the registry can trigger outbound calls or secure online messages to patients who need to make an appointment with their doctor for particular services at specific intervals.

Besides improving the health of the population, this automated messaging also brings patients back in touch with their physicians—in some cases, after long intervals of non-contact. Without requiring any effort from the doctors or their staff, this combination of tools enhances the doctor-patient relationship while also increasing practice revenues as a byproduct.

Optimization of visits requires preparation by both the patient and the care team. The first thing patients should do is fill out a health risk assessment, either online or in the office, that shows the state of their health and what they're doing about it. The patients should also receive educational materials, including online

multimedia tools, to prepare them for the office visit.

wPhysicians and other care team members need actionable reports that combine data from their EHRs with data from registries, other providers, and HRAs to show what has been done for the patient and the gaps in their care that need to be filled. They also require reports that can help them figure out how to improve the quality of care. While advanced EHRs include health maintenance alerts, they may lack clinical dashboards that present key markers of the patient's status, may be unable to compile data across a patient population to support quality improvement, and may be unsuited for patient care by a multidisciplinary

For a diabetic patient, a report related to that condition would show the patient's blood pressure and body-mass index, whether they had had an HbA1c test within a certain period of time, and their HbA1c level, among other data points. If the reports were combined with the registry and the patient messaging software, the physician or midlevel practitioner would be able find out whether and when the patient had been contacted to come in for an office visit or get a test done and whether they had made an appointment. In addition, the care team can use these reports to reach out to patients who need educational materials or one-on-one educational sessions to learn how to manage their conditions.

What's needed is a sophisticated rules engine that can incorporate disparate types of data with evidence-based guidelines, generating reports that provide many different views of the information.

care team (Fernandopulle and Neil Patel).

What's needed is a sophisticated rules engine that can incorporate disparate types of data with evidence-based guidelines, generating reports that provide many different views of the information. For example, the entire patient population could be filtered by payer, activity center, provider, health condition, and care gaps. The same filters could be applied to patients with a particular condition, such as diabetes, to find out where the practice needed to improve its diabetes care.

The same approach could be used to produce reports for care teams at the point of care.

Extending the reach of the care team beyond the office requires both the willingness of providers to stay in touch with the patient and modalities that help patients care for themselves. Automation can help both sides achieve those goals without excessive effort. For example, when a patient fills out an HRA, they could receive educational materials tailored to their conditions and they could be directed to appropriate self-help programs for, say, smoking cessation or losing weight. And if physicians had automated methods to contact patients and remind them of what they needed to do to improve their health, they would be more likely to perform that component of PHM.

Conclusions

To create a sustainable healthcare system that provides affordable, high-quality healthcare to all, we will have to adopt a population health management approach. While the transition to PHM will be difficult for providers and patients alike, the change could be facilitated and accelerated through the use of health information technology, self management tools, and automated reminders that are persistent in changing behaviors.

It will be several years before the majority of physicians and hospitals are using EHRs, and current EHRs lack many of the features required to improve population health. But by combining EHRs with adjunctive technologies that already exist, physicians can rapidly move to PHM strategies that will benefit all of their patients and enhance the physician-patient relationship.

About the Author

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Dr. Richard Hodach is the Chief Medical Officer of Phytel. Dr. Hodach has long been recognized as an advocate of integrating IT with the practice of medicine. Before joining Phytel, Dr. Hodach, a board-certified neurologist, was the senior vice president, chief medical officer at Matria Healthcare, where he provided strategic direction and clinical expertise in the development of evidence-based, patient-centric population health products. He also has served as medical director and vice president of Medical Affairs at Accordant, where he developed the medical concept and structure of Accordant's patient-centric website and converted disease management programs into web-enabled disease management tools. He co-founded MED.I.A. (Media Interactive Applications), a company that designed, developed and produced medical interactive educational materials to be used by patients in their doctor's office. Dr. Hodach has a PhD in Pathology and an MD with Board Certification in Neurology and Electrodiagnosis, as well as a Master's Degree in Public Health.

About Phytel

Phytel creates consistent and sustainable patient engagement through automated coordinated care tools and services that extend the reach of the physician beyond the office. This results in improved quality outcomes and increased profitability. Phytel's outreach solution combines an electronic registry utilizing evidence-based protocols triggering outbound messaging to patients who are in need of preventive and chronic disease care. By increasing compliance with physicians' treatment plans, our services substantially improve patient compliance with recommended care, leading to better patient outcomes and assisting our clients in reaching their quality and financial goals.

Notes

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