



A ROADMAP FOR POPULATION HEALTH MANAGEMENT



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EXECUTIVE SUMMARY

Population health management (PHM) has become an important focus for the majority of healthcare organizations as they prepare for value-based reimbursement and risk contracting. According to a new HIMSS survey, about two-thirds of hospitals and health systems have a PHM initiative of some kind underway.¹ That doesn't count the many physician-led accountable care organizations (ACOs) not anchored by a hospital or health system that have also begun to develop PHM capabilities.

Many organizations, anticipating a turn in the market toward value-based care, are directing their primary care practices to form patient-centered medical homes. Some of the more forward-thinking healthcare organizations are getting their specialists involved as well, and clinically integrated networks are on the rise, bringing multiple providers across the care continuum under a single umbrella for contracting purposes. However, a majority of healthcare organizations are still at the early stage of preparing for PHM, experts say.

Moreover, most healthcare organizations don't yet understand that PHM involves not only medical services but also behavioral health. And because health care determines only 10%–25% of the variations in individual health,² healthcare organizations must also hire social workers and forge connections with community services.

Considering where most organizations are in their PHM journey, it's not surprising that less than a quarter of healthcare organizations engaged in PHM are using IT solutions specifically designed for that purpose.³ So far, the majority of healthcare systems are utilizing whatever PHM applications are available in their EHRs—however inadequate those may be today.

This is all bound to change, however, as payers increase the pressure on providers to take financial risk, either in the form of downside risk for shared savings or a flat monthly or annual fee per patient. When that happens, healthcare organizations will have to sort through the wide variety of PHM solutions on the market and select the ones that can really benefit them. And that is only a small part of the transformation they must go through.

The biggest challenge for healthcare organizations will be to change their culture in every corner of their operations, from the C-suite to their front line clinicians. They will also have to change their governance, operational, and financial model; learn how to coordinate care across the continuum; use data analytics to improve population health; measure their financial and clinical performance; make evidence-based medicine the standard of care; and use automation to drive high performing care teams.

As healthcare organizations move from fee-for-service to value-based reimbursement, they will have to apply strategies designed to avoid a near-death financial experience. What this will require is the ability to take advantage of government programs that reward providers for improved care coordination, higher quality, and more efficiency, while



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simultaneously decreasing costs across their operations. They must also create smart care teams that leverage data and analytics to deliver high-quality care as efficiently as possible, and they must use automation tools to scale up population health management quickly across their enterprise.

The Institute for Health Technology Transformation (iHT2) has created this guide to help healthcare organizations at various stages along the journey to PHM. The guide encompasses a broad range of factors—including information technology, care processes, and clinician culture—that healthcare organizations should consider as they build their PHM capabilities. The roadmap at the end of the guide, derived from studies and from interviews with healthcare executives on the front line of transformation, can help healthcare organizations develop strategies that are likely to lead to success in PHM.

While we acknowledge that every healthcare organization's situation is different, several common themes ran through our conversations with healthcare leaders. These include:

- the importance of patient-centered medical homes and team-based care;
- the need to manage the care of high-risk patients closely while also providing between-visit care to other patients, especially those who are “rising risk”;
- the key roles of analytic and automation tools in the PHM infrastructure;
- the need to address physician culture and to get primary care physicians and specialists to work closely together;
- the importance of getting other providers onboard, ranging from hospitals and post-acute care facilities to behavioral specialists and social workers;
- the proper timing for going all-in on PHM and how both Medicare and private payers can help.

The roadmap builds on these themes and other information we obtained from our research. We believe that if you use this roadmap wisely, in the light of your experience and the unique features of your own market, it can be a valuable guide to the decisions you will have to make as your organization navigates the tricky transition to value-based care.

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PATIENT-CENTERED MEDICAL HOMES

The patient-centered medical home (PCMH), a holistic approach to primary care that is designed to improve care coordination, is widely viewed as a key building block of PHM. The National Committee for Quality Assurance (NCQA) criteria for PCMH recognition include components such as patient-centered access, team-based care, and performance measurement. Medical homes are also required to show their PHM capabilities in areas such as care management and support, care coordination and care transitions, health assessments, and the use of data in PHM.⁴

A PCMH must ensure that patients receive recommended preventive and chronic care, track patients' health conditions systematically, reach out to noncompliant patients and those who don't regularly see their doctors, provide patient education and self-management coaching, and address poor health behaviors.⁵ All of these activities are hallmarks of PHM.

Some experts note that small practices that build PCMHs lack the resources to manage population health effectively on their own.⁶ Those medical homes must join a larger organization, such as an ACO or a healthcare system, to become part of the PHM enterprise. Nevertheless, most of the participants in our research project agree that the formation of PCMHs is essential to success in PHM.

"There's no other mechanism to motivate and change behavior for the provider group than to be part of a team-based care system," declares Creagh Milford, DO, president of population health management for Mercy Health, a 23-hospital system based in Cincinnati. "The PCMH includes a variety of structural measures that require providers to be a team not only among themselves, but also among other provider groups and specialists. It's the foundation for all our PHM initiatives."

Mercy Health has approximately 125 NCQA-recognized medical homes in its more than 200 primary care practices. It started ramping up these PCMHs around the same time that it began building its Mercy Health Select ACO, Milford points out.

Utica Park Clinics, a division of the Hillcrest HealthCare System in Tulsa, Okla., has focused on building medical homes among the 70% of its 230 doctors who work in primary care. Utica Park has created its PCMHs with the help of the Comprehensive Primary Care Initiative (CPCI) of the Centers for Medicare and Medicaid Services (CMS), says Jeffrey Galles, DO, the group's chief medical officer.

Northeast Georgia Physicians Group (NGPG), a subsidiary of Northeast Georgia Health System (NGHS), based in Gainesville, Ga., has also focused on medical homes rather than on an ACO. All but one of NGPG's 26 primary care practices—which include 85 of its 270 providers—are NCQA-recognized PCMHs, notes Antonio Rios, MD, president and chief administrative officer of NGPG.

Rios regards primary care, the locus of the PCMH, as the "cornerstone" of population



A core function of the PCMH is to ensure smooth transitions of care for patients across all care settings; and to do that, the PCMH must **enlist the cooperation of specialists.**

health management. “It’s what everything builds upon,” he notes. “Primary care is where you build the infrastructure. The primary care physician is the quarterback and is aware of where the patient is moving across the continuum of care.”

This is also the viewpoint of Robert Fortini, RN, MSN, chief clinical officer of Bon Secours Virginia Medical Group (BSVMG), based in Richmond, Va. Over time, BSVMG has switched its ratio of primary care providers to specialists so that the generalists now form a majority of the group. “We did that by design, strategically,” Fortini said in an earlier iHT2 report.⁷ “We knew what value-based payments were going to look like, and we saw the growing gap in the primary care delivery system and the increasing needs of the population.” Most of BSVMG’s primary care sites are now NCQA-recognized medical homes.

Stephen Cavalieri, MD, chief medical officer of inHEALTH, a division of Central Virginia Health Network that manages an ACO for BSVMG, takes a more nuanced view of how physician groups should be structured for success in PHM and as part of ACOs. “I feel strongly about the ability of primary care to play a role in cost reduction, readmission reduction, quality improvement, and in managing patients who visit the ER too frequently,” he says. “But specialists, in their day-to-day decision making, leverage a greater role on potential costs as they manage patients.”

Regardless of the primary care-to-specialty ratio within a group, the coordination between generalists and specialists is integral to PHM. A core function of the PCMH is to ensure smooth transitions of care for patients across all care settings; and to do that, the PCMH must enlist the cooperation of specialists.

From a financial perspective, PCMHs have a lot of value as healthcare organizations begin to make the transition to population health management. Many private payers offer incentives to practices that become NCQA-recognized PCMHs.⁸ CMS has supplied incentives to participants in the Comprehensive Primary Care Initiative (CPCI),⁹ and those funds have helped pay for Utica Park’s IT infrastructure. After that program ends in December 2016, the group plans to participate in CMS’s Chronic Care Management (CCM) program, which rewards practices that provide non-visit care to patients—a characteristic of PCMHs.¹⁰ Another program from the Centers for Medicare and Medicaid Innovation (CMMI)¹¹ financed NGPG’s purchase of PHM software that enabled the healthcare organization’s medical homes to gain NCQA recognition, Rios says.

In summary, PCMHs are a mechanism to change provider behavior and form care teams; their capabilities are fundamental to population health management; and they attract financial support that can help pay for PHM infrastructure. All in all, the PCMH is a good place to start the PHM journey.

CARE MANAGEMENT

Healthcare organizations define population health management differently, depending on whether they focus mainly on high-risk patients or on their whole population. Because the sickest 10% of patients generate about 70% of health spending, every organization involved in PHM must devote a substantial amount of resources to helping those patients get better, so they'll stay out of the hospital and the emergency department (ED). But healthcare organizations should also pay attention to the rest of the population, especially those "rising-risk" patients who will be the high-risk patients in the near future. An ideal PHM strategy encompasses both high-risk care management and interventions that can help low- and moderate-risk patients improve and maintain their health.

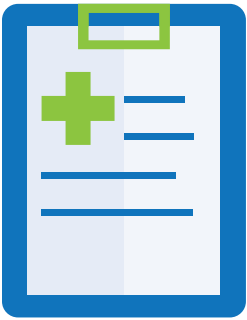
The first step in executing this strategy is to use analytic tools to stratify the population by health risk. Predictive modeling can also show which patients are most likely to become high risk within the next year. On average, only 30% of patients who are high risk today were in that category a year ago,¹² highlighting the importance of "going below the waterline" to identify patients who could become high risk or have an acute event if no interventions are taken.

The primary task of nurse care managers (often called care coordinators) is to manage high-risk patients so that they don't become sicker and require more expensive care. Second, care managers and other care team members use various analytic and automation tools, such as registries, outreach applications, and online educational materials to help patients with less serious conditions take better care of themselves. And third, the care team ensures that healthy patients—the vast majority of the population—receive appropriate preventive care and are encouraged to maintain their health.

None of this can be done cost effectively with manual methods. Just figuring out which patients need help urgently and what their issues are can take up the majority of care managers' time if they have to plow through EHRs or paper charts to find that information. Similarly, care coordinators don't have enough hours in a day to call every patient who has a care gap and bring each one in for necessary care. Therefore, analytic and automation solutions are essential to care management.

Care managers represent an added expense that healthcare organizations and practices didn't have before they engaged in PHM. Care coordination fees from health plans don't begin to cover this expense. So, until healthcare organizations start getting risk contracts that could potentially pay for the added overhead, they must find other ways to pay for care managers. Some groups have nurse care managers conduct annual wellness exams for Medicare patients or use them in Medicare's transition-of-care program to generate extra revenue.

But Cavalieri cautions that these tasks must be integrated into care management. "The most important thing a care coordinator should do is manage patients," he says. "To the extent that an annual wellness visit or a transition-of-care visit has a role in that, it makes sense. But some practices find transition-of-care visits to be labor



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intensive and not worth their while. Wellness visits offer an opportunity to manage the patient, attend to preventive care, and even attend to end-of-life planning, which is sorely needed. That’s an excellent role for the nurses, because they can fulfill many of the impactful quality metrics that are part of value-based care, and the practice receives an income.”

Some healthcare organizations and PCMHs have also discovered that, by sending automated alerts to patients about their care gaps, they can increase their visit volume enough to pay for a portion of their infrastructure for PHM, including care managers. This strategy makes a lot of sense in the early stages of the transition to value-based care, when most reimbursement is still fee for service. By the time an organization is ready to take financial risk, filling care gaps should be part of its fundamental approach.

DIFFERENT LEVELS OF CARE

Mercy Health Select’s primary care physicians—both employed and affiliated—appreciate the ACO’s care management program, because it takes much of the burden off of them for managing patients with complex chronic diseases, notes Amy Frankowski, MD, senior medical director of Population Health for Mercy Health and chief medical officer of its ACO, Mercy Health Select. But there is also a downside: The care managers have been assigned to help only high-risk patients who are covered by commercial risk contracts or the Medicare Shared Savings Program (MSSP).

For the ACO’s 1,500 physicians, this policy represents a bit of a challenge, Frankowski acknowledges. “Currently, a certain percentage of patients are enrolled in the program at the physician’s discretion. Once we show the financial sustainability of this model, our goal is to provide care coordination for all patients.”

Even in the absence of risk contracts, managing the sickest patients closely can generate a return on investment (ROI). For example, NGPG has begun footing the bill for its PHM infrastructure now that its government grant has expired, Rios says. The health system is recouping part of that investment from some aspects of PHM, including a project that focused on its ED’s top 100 “frequent flyers.” “These people had over 2,300 visits to the ED in a year,” he recalls. “Some were going in several times a week. So we had our teams work aggressively with these folks to reduce the visits to 600 plus in a year.” How did the healthcare organization save money? By avoiding bad debt, because many of the frequent flyers lacked insurance and couldn’t pay their bills, Rios replies.

IT INFRASTRUCTURE

As mentioned in the previous section, it is impossible to manage population health without the help of information technology. The question is what kind of IT infrastructure an organization requires to build an effective PHM program.

To begin with, a healthcare organization needs EHRs that have the basic functionality required to show meaningful use. That includes the ability to exchange information among disparate EHRs. While interoperability is still far from a reality, the EHR or EHRs used in a healthcare organization or ACO must, at a minimum, be able to exchange clinical summaries, either by direct messaging or through a Health Information Exchange (HIE). Even if a healthcare organization has a single EHR system that encompasses both its hospitals and its ambulatory-care clinics, it will have to exchange data with other providers who use different systems.

It is important to remember that the current meaningful use program will be phased out, perhaps as early as 2016.¹³ The successor to meaningful use will be part of the requirements for the Merit-Based Incentive Payment System (MIPS), which is authorized by the Medicare Access and CHIP Reauthorization Act (MACRA). One of two tracks for Medicare physician payment, starting in 2019, MIPS includes four components: quality, resource use, clinical practice improvement activities (such as building a medical home), and meaningful use of certified EHR technology.¹⁴ So meaningful use will become less important, and the chief goals of PHM—higher quality at lower cost—will take precedence. The other payment track, which requires participation in alternative payment models such as ACOs, PCMHs, and payment bundling, will encourage physicians to manage population health.

Although EHR vendors have lately begun to add some PHM features to their products, observers and our research participants agree that EHRs still lack much of the requisite functionality. For example, their health maintenance alerts and patient registries are limited; they make it difficult and time-consuming to generate timely reports on subpopulations, patients with care gaps, and other topics vital to PHM; and the patient outreach functions in most EHRs are rudimentary.

Cavalieri says that the EHRs used by inHEALTH clients include patient registries. “But most of the registries currently available in EHRs aren’t delivering the kind of information you need,” he notes.

The static registries in EHRs, he says, may or may not include the required information, or it may be out of date. Moreover, he says, “You have to run these reports, and you have to plan outreach. It takes a significant staff investment to do all of those things.”

InHEALTH offers its clients PHM tools from an outside vendor. These applications assemble their EHR, lab, and administrative data into a registry in near real time, identify care gaps, automate protocol-driven outreach calls, and analyze the data so that care coordinators can easily see which patients need their help right away.



“From 2014 to 2015, we saw a fourfold increase in **Medicare wellness visits**. As a result of that, colon cancer screening rates have **increased substantially**.—*Jeffrey Galles*

The PHM solution enables care teams to start looking at their populations and intervening right away, he says. “If you’re a diabetic and you haven’t had an HbA1c or had a lipid test in the last 12 months, you are at risk for hospitalization,” he notes. “This registry allows you to identify those patients on the fly, which has significantly more value than a static registry.”

Cavalieri cautions, however, that any IT solution must be paired with workflow changes and other strategies to be effective. For example, when contacting patients who have care gaps, organizations “have to make sure they have the physician bandwidth to bring those patients in and the clinical bandwidth to close the gaps. That kind of software requires planning and an understanding of your scheduling opportunities.”

BOOSTING QUALITY

Jeffrey Galles, DO, of Utica Park Clinics notes that the group also uses registry software from an outside vendor. Besides incorporating clinical and administrative data, the registry ingests data from a local HIE that is linked to Hillcrest Healthcare System, the group’s parent organization, and other healthcare systems. That feed provides timely alerts on hospital admissions and discharges of patients across the region.

The group uses the PHM software to identify care gaps and bring the patients in to see their providers. Among the conditions of the patients who receive these notifications by text, email, or phone are diabetes, hypertension, and hyperlipidemia. In addition, patients are alerted when they are due for Medicare wellness visits, immunizations, mammography, or colonoscopy.

Altogether, Utica Park runs outreach programs for 25–30 different indications. “They’ve been really successful in driving volume into the practices, which is always a good thing, and driving appropriate volume, based on clinical care needs,” Galles says.

“From 2014 to 2015, we saw a fourfold increase in Medicare wellness visits,” he continues. “As a result of that, colon cancer screening rates have increased substantially. We’ve had to contract with an outside, non-employed GI group to fill the additional capacity, because our own GI group wasn’t able to accommodate it. We’ve had to expand hours in our mammography units, because we’ve driven additional volume with breast cancer screening.”

As a result of all this activity, he says, Utica Park’s quality scores with payers have improved. Meanwhile, by combining the registry with care management software,

the group has been able to identify high-risk patients, create work lists for the care managers, track their patients' status, and document what has been done for them.

This PHM infrastructure, along with the establishment of medical homes, enabled Utica Park to generate \$2.1 million in shared savings in the CPC initiative, says Galles. "We had to subtract our care coordination fees from that, but our interventions clearly demonstrated savings for CMS. We've also seen a substantial amount of revenue from our upside contracts with Medicare Advantage plans. In addition, we've seen some improvement in our PQRS [Physician Quality Reporting System] program, which is another driver for where we're headed in value-based payments in 2019."

DATA WAREHOUSES

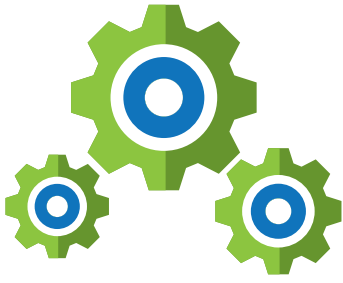
Larger enterprises tend to use data warehouses to aggregate data from multiple sources, including clinical and claims data. In some organizations, these data warehouses include registries; other healthcare organizations use standalone registries. Various kinds of clinical and business intelligence tools may be applied to the information in data warehouses to help healthcare organizations manage population health and financial risk.

ACOs and many healthcare organizations must find ways to aggregate data from multiple EHRs. InHEALTH leverages its related HIE for that purpose today where possible, but is working toward an integrated clinical-claims solution, Cavalieri says. Mercy Health, in contrast, uses a data warehouse supplied by its EHR vendor and tools from two other companies that aggregate claims and clinical data. The data warehouse can only recognize medical record numbers generated in Mercy's EHR, so one of the outside vendors' solutions is used to combine that EHR's data with information from the EHRs of other providers who care for Mercy's patients.

"It is a challenge to achieve a common patient identifier when using three different systems," notes Milford. "Providers will continue to move toward relational databases that permit ability to perform self service and to drill into both clinical and financial data to understand how PHM interventions impact the quality and cost of care."

As a result, Mercy Health relies on the vendor that connects EHRs to feed the aggregated data into a registry for closing care gaps and health maintenance. "All these functions are at the point of care, with built-in decision support."

The Mercy EHR has outreach functions, including automatically generated emails and letters to patients with care gaps. But again, this solution works only with patients who have records in the EHR database. The healthcare organization continues to identify new ways to perform patient outreach on behalf of providers not employed by Mercy, Milford says. Mercy is in discussions with another vendor to supply that functionality.



PHM requires applications for registries, care gap identification, risk stratification, predictive modeling, utilization management, benchmarking, clinical dashboards, patient outreach, and **automated work queues.**

Meanwhile, a new alternative to the data warehouse has emerged. Called a “data lake,” this is a new approach to data aggregation that uses massively parallel computing and a software framework to aggregate, normalize, and pull data when it is needed. This framework can combine all data types, structured and unstructured, and enables reports to be assembled without customization or the rewriting of business rules. According to its proponents, the data lake approach can produce ad hoc reports and populate registries in less than 24 hours, much faster than conventional data warehouses.¹⁹

This kind of turnaround time is required to give physicians and care teams the “line of sight” view they need to act on the data when their interventions can do the most good for patients. In addition, providers need information at the point of care on which patients are covered by risk or shared-savings contracts. While doctors don’t want to treat patients differently based on their insurance status, they must follow the quality reporting requirements of these contracts to succeed under them.

ADVANCED CAPABILITIES

PHM requires applications for registries, care gap identification, risk stratification, predictive modeling, utilization management, benchmarking, clinical dashboards, patient outreach, and automated work queues.

Beyond that, organizations should consider advanced forms of IT—some of which might be classified as “cognitive”—to increase their ability to optimize population health.

Cognitive computing means systems that understand, reason, and learn. Through cognitive computing, providers are now able to “see” unstructured health data that was previously not visible. One example of using this type of technology in health care is the application of natural language processing (NLP) to unstructured data in EHRs. The latest NLP solutions can convert relevant portions of free text into structured data that can then be processed.

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PHYSICIAN CULTURE

Physicians are naturally attuned to fee-for-service, because that's what they're used to and because it seems natural to get paid more for doing more. Their workflow is designed to deal with the problems of each patient they see, not to monitor and reach out to every person on their patient panel. Moreover, as an early paper on medical homes pointed out, doctors who are used to being office leaders find it disconcerting to become members of care teams.¹⁵ Rios recalls that NGPG physicians initially found it difficult to adapt to the healthcare system's new PHM direction. "Change doesn't flow naturally, especially for physicians. We had to make sure that the 'why' was answered and that we had support from the top leadership. We all agreed that this was the right path to pursue, so it wasn't optional. It was a learning process, and I give credit to my doctors who went above and beyond to learn and participate in the teams. We had exceptional physician leadership."

Similarly, it took the Utica Park physicians a year or two to grasp the point of team-based care, Galles observes. But now that they've accepted it, he says, "it's becoming part of the culture, and the practices that haven't been part of the CPC initiative are asking us to provide additional resources for them to move in the same direction."

Besides the use of physician champions and support from top leadership, any strategy to enlist primary care physicians in a PHM initiative should include financial incentives. For independent PCPs, the care management fees that many health plans pay PCMHs is a powerful motivator. If they belong to an ACO that participates in MSSP, bonuses from that program could also convince doctors that they're on the right path. Employed physicians need to see a compensation package that places as much or more emphasis on quality and efficiency as on production.

COORDINATION ACROSS SPECIALTIES

Close cooperation between primary care doctors and specialists is essential to improve care coordination and outcomes. The first step toward this cooperation is to persuade specialists to support the PHM cause.

At NGPG, the specialists initially regarded PHM as a primary care project, Rios notes. But when the group's leaders shared the positive clinical results of the PCMHs with the specialists, their attitude began to change. NGPG physician executives also explained how the specialists could benefit from increased referrals and from receiving the right information when patients visited them. Eventually, the specialists realized that PHM was the right way to go, he says.

Milford of Mercy Health also recognizes the importance of closer cooperation between PCPs and specialists. "As a primary care physician, I need to know when my patient sees a cardiologist and what meds have been prescribed or removed from the medication list, and a summary of how that cardiologist thinks my patient is doing," he says. "In population health, you need to create incentives so that the specialist feels that he or she should be accountable for the care of that shared patient."



Technology offers hospitals a simple method to help their **physicians succeed** at PHM while reducing readmissions.

One way to get that cooperation, he says, is to incentivize specialists financially, either through gain-sharing or shared savings. But it's easier to incentivize primary care doctors because they often earn less than specialists do, he observes. Care management fees are “pretty meaningful to a primary care physician,” he says. “But if you're a neurosurgeon, they are less meaningful because these new payments represent such a small percentage of specialist income.”

Moreover, he adds, it's much easier to motivate employed doctors, whether they're PCPs or specialists, than independent or affiliated physicians who receive only a portion of their income through a particular health system.

Milford's colleague Frankowski views referrals as the key to getting specialists' attention. “But part of their benefit of being in the network is sharing patient data so that the right type of referral can be made to help ensure the best outcomes for the patient.”

Technology can knit together providers across care settings, but the lack of interoperability between EHRs remains a barrier. “At the highest level, you need electronic connectivity—a common EHR or other sources of connected electronic IT systems,” Milford says. “The ability to share data and information is essential.”

He cites a Mercy pulmonologist who saw a patient for smoking cessation and COPD. Because the specialist and the patient's primary care doctor used the same EHR, the pulmonologist recognized that the patient was overdue for a mammogram. He ordered the mammogram electronically and called the PCP to let him know that he had ordered it.

“Five years ago, that pulmonologist would not have had an incentive to address prevention and close care gaps,” Milford points out. “Today, we're creating explicit joint responsibility within our network for our population health patients. There are a number of ways specialists can play a critical role in PHM, from closing care gaps to performing e-consults to connect specialists to PCPs. Early evidence shows e-consults hold promise to reduce unnecessary referrals and open specialists' schedules to see more appropriate referrals.”

HOSPITALS AND OTHER PROVIDERS

Most hospitals that are not part of big healthcare systems will be reluctant to transform themselves along PHM lines until they are offered global risk contracts. Nevertheless, many of them are preparing their employed practices for PHM, and some participate in ACOs that are involved in PHM. Moreover, hospitals have another reason to improve their coordination with ambulatory care and post-acute care (PAC) providers: Medicare penalties for excessive readmissions.

Technology offers hospitals a simple method to help their physicians succeed at PHM while reducing readmissions. The hospitals can send their doctors alerts from their admission/discharge/transfer (ADT) systems to let them know when their patients are admitted to and discharged from the hospital or the emergency department and where they went after discharge.

This kind of information is “incredibly important” in PHM, says Cavalieri. InHEALTH receives these alerts from area hospitals through its allied HIE, MedVirginia, he notes, and uses them to drive its transitions-of-care program. “We get acute-care encounter alerts, we identify patients who are high risk, and we see those patients within 72 hours of discharge so we can manage them appropriately. Those are the hottest opportunities in managed care, if you can manage those patients and prevent a readmission and find patients who could use care management.”

PAC providers are now on the radar of hospitals, as well, because of the role they play, not only in readmissions, but also in CMS’s bundled payment programs. For example, Mercy Health is expanding its clinically integrated network, which includes its ACO members, to encompass PAC facilities such as nursing homes and home care agencies, as well as ambulatory surgery centers, Frankowski says.

Mercy also wants to give the PAC providers access to its EHR and is considering the use of other tools to evaluate the quality and efficiency of care in those facilities, she notes. The healthcare organization’s goals are to transfer patients more quickly, reduce lengths of stay in the hospital, and decrease admissions from the PAC facilities.

BEHAVIORAL HEALTH AND SOCIAL SERVICES

Our conversations with healthcare executives revealed a surprising trend: Their organizations are beginning to incorporate behavioral health into primary care and to look at how they can affect the social determinants of health to improve outcomes. While the NCQA PCMH 2014 standards encourage this integration and co-location of services in the primary care practice, it is just now gaining traction.

Nearly 20% of Americans have behavioral health conditions, which cost about \$7 billion a year.¹⁶ Moreover, individuals with behavioral health and substance abuse conditions cost 2.5 to 3.5 times more to care for than do patients without such issues.¹⁷ Patients who have behavioral issues along with chronic diseases cost 46% more to treat than

those who have only chronic medical conditions.¹⁸ So behavioral health has become a focus of PHM.

Because primary care doctors have little or no training in counseling, they tend to refer patients with behavioral health conditions to mental health professionals, but the patients often don't follow up. This pattern is changing, however, among organizations that manage population health. Increasingly, their preferred method for dealing with this issue is to integrate behavioral health professionals into primary care practices.

"You can't function in most ACO environments without behavioral health support or something embedded from a behavioral perspective," says Cavalieri.

Mercy Health is placing a major focus on behavioral health. It has already embedded 20 behavioral health specialists in its primary care sites and plans to add more. These providers deal with moderate- and high-risk patients who also have a diagnosis of depression or substance or alcohol abuse.

"It's increasingly apparent that these individuals with a behavioral health diagnosis plus a chronic condition are extremely expensive," Milford explains. "Health systems have often under-diagnosed these disorders. New payment models will enable providers to better coordinate care and offer services for these patients."

Social determinants of health are also receiving new attention from PHM advocates. It has long been known that health care affects only a small percentage of the variances in individual health over time. The World Health Organization (WHO) estimates that that percentage is between 10% and 25%. Other factors, including genetic makeup, health behavior, social and economic factors, and physical environmental factors, account for the rest.²⁰ Much of this is beyond the ability of providers to influence, but there are ways to have an impact on social determinants.

For example, inHEALTH manages a physician-led ACO called MD Value Care that has a high-risk, comorbid patient population, notes Cavalieri. The fragmentation of care in the market is increasing, and patients often don't receive the help they need to maintain their health, he says. "They can't afford their meds, have transportation issues, have family support issues. The frail elderly can easily fall through the cracks. Our care coordination provides a social support network for these patients." That includes the use of social workers and community resources, he adds.

Mercy Health's ACO has taken a similar approach by forming a network of "support specialists" who work closely with its care coordinators. These care team members, most of whom are social workers, help high-risk patients with everything from "meals on wheels" to making sure they have transportation to appointments and can get their medicines.

NGPG recently hired a social worker to collaborate with its care managers, rotating among the primary care offices. She focuses on the highest priority patients, notes Rios.

WORKING WITH PAYERS

Both CMS and private health plans can help healthcare organizations in their PHM quest. In markets where payers and providers have made less progress toward value-based reimbursement and financial risk, healthcare organizations are more likely to be aided by CMS demonstrations and programs than by private insurers. By contrast, in markets where risk contracting has begun to take hold, health plans are more fully engaged with healthcare organizations in building PHM and preparing for financial risk. So healthcare organizations need to evaluate their markets to decide how and when to partner with payers.

In Tulsa, for example, Medicare funding was essential in the early stages of building Utica Park Clinics' infrastructure for PHM. Some health plans now pay care management fees to the group for its PCMHs. However, those fees have not been sufficient to cover the increasing cost of the infrastructure as Utica Park has added behavioral health specialists, diabetic educators, project managers, and software.

If the Tulsa market were ready to move to value-based reimbursement, Galles says, it would be easier to finance the transition to PHM. "Our market, like a lot of other markets, is struggling with the idea of readiness for risk. That's not just a challenge for providers, but for health plans as well. They don't understand what the capacity for change is in healthcare systems, and the providers don't understand the complexity of structuring risk in a market that doesn't have big drivers for risk."

Meanwhile, Utica Park has enlisted the support of two insurers by focusing on high-risk patients in their Medicare Advantage plans. The payers have contributed additional care managers to the clinics and analyze the group's data to identify high-risk patients, Galles says.

Another important function of health plans is to provide claims data on their members. CMS also supplies limited claims data on Medicare beneficiaries to ACOs in its MSSP.²⁰ While not as timely or as accurate as clinical data, claims data shows what has been done for patients wherever they received care. In addition, the majority of analytic tools are still designed for claims data, notes Cavalieri.

These analytic tools can be used to identify high-risk patients, which is critical for healthcare organizations and ACOs just embarking on PHM, he observes. "The modeling is usually claims-based, although it can be based on other data. There's tremendous value in claims data in population health. Having an analytical tool that includes claims and eventually, EHR information, would be nirvana for most health systems."

Claims data can also help providers understand readmissions, because patients aren't always readmitted to the same facility, he points out. And when healthcare organizations or ACOs begin taking risk, claims information is indispensable for tracking out-of-network healthcare utilization, he adds.

RISK CONTRACTING

Mercy Health Select currently holds risk contracts with several commercial and Medicare Advantage plans; it has also switched to track 3 of the MSSP, which involves downside risk, Milford notes. In total, approximately 20% of Mercy Health's primary care panels consist of patients covered by risk contracts, he says. Moreover, the healthcare organization is participating in two CMS programs (one of them mandatory) that require it to take bundled payments for certain procedures.

Mercy Health recently joined with Summa Health and Metro Health, two other Ohio-based health systems, to form a "network of networks" called Advanced Health Select.²¹ This statewide network, Milford says, will allow the participants to bid together on more commercial risk contracts than any of them could do individually. The big national insurers, he notes, don't want to do risk deals for just a few thousand patients, but are willing to make these arrangements when more of their members are pooled together.

None of this would have been possible, he adds, before Mercy Health developed its PHM capabilities. The same is true for Mercy Health Select's success in the MSSP, where it has saved millions of dollars for Medicare.

"Part of that success came from our ability to segment our population using clinical and claims data and then focus on interventions for the appropriate segment of the population," Frankowski says.

CONCLUSION

PHM represents a fundamental transformation of how healthcare is delivered and paid for. Before a healthcare organization embarks on a PHM initiative, it must be ready to change its business model from pay for volume to pay for value.

Most U.S. markets have not yet adopted value-based reimbursement to any large extent. Therefore, each healthcare organization must gauge the speed at which it should transition to PHM. If it moves too fast, it likely won't get a return on investment for a long time. If it moves too slowly, it won't be ready when the market turns.

The ability to execute on PHM depends on people, process, and technology. First, a healthcare organization's physicians must accept the idea that PHM can improve the quality of care and prepare them for the value-based future. Second, the care managers and the care processes needed to implement PHM must be put into place. And third, new health IT solutions that complement EHR capabilities must be adopted to support the new care processes in a cost-effective way.

Team-based care, growing out of the patient-centered medical home, is essential to PHM. Behavioral health professionals and social workers should be part of those care teams to address the non-medical problems that people have in coping with illnesses or staying healthy.

Finally, everyone in the healthcare organization must embrace the vision that improving population health is the only way to bend the cost curve and succeed in the new world of value-based reimbursement. When healthcare providers and staff members fully understand that, half of the population health management battle will have been won.

A ROADMAP FOR POPULATION HEALTH MANAGEMENT



DOMAIN: Form PCMHs

GOALS: Change provider behavior; Form care teams; Improve access; Coordinate care; Fill care gaps; Continuous care, including non-visit care.

CHALLENGES: Physician resistance; Workflow changes; Infrastructure costs.

INCENTIVES: CMS and CMMI programs; Care coordination fees from private payers; Pay-for-performance bonuses; Fee-for-service income from filling care gaps.

TECHNOLOGY: EHRs; PHM solutions, including registries, analytics to identify care gaps, outreach automation tools.

RECOMMENDED STRATEGY: Form physician-led champion teams; Continuously analyze population and care data to improve efficiencies and optimize budgets.



DOMAIN: Manage care

GOALS: Hire care coordinators; Risk-stratify population; Manage high-risk patients; Ensure other patients get necessary care; Coordinate with specialists; Improve transitions of care.

CHALLENGES: Identifying high-risk patients; Finding relevant data; Patient outreach; Paying for care coordinators; Tools for documenting non-visit care.

INCENTIVES: Medicare wellness visits; CMS transitions of care program; CMS chronic care management program; Health plan fees for care coordination; Risk contracts (at later stage).

TECHNOLOGY: EHRs; Data warehouses and data lakes; Registries; PHM solutions used in PCMHs, plus risk stratification and tools to help care managers prioritize cases and locate relevant information.

RECOMMENDED STRATEGY: Collaborate with clinicians to hire and construct care coordination teams; Analyze and categorize sub-populations from EHRs and data warehouses to identify high-risk patients; Leverage technology for remote monitoring; Initialize telehealth programs.



DOMAIN: Engage patients

GOALS: Manage care of high-risk patients; Use automated alerts to patients about care gaps; Provide online educational materials; Do health risk assessments; Embed behavioral specialists in primary care sites; Use social workers to help patients address barriers to care.

CHALLENGES: Insufficient number of care managers; EHR outreach tools that can't be used with disparate EHRs; Poorly designed educational tools; Lack of behavioral care and integration with social services and community resources.

INCENTIVES: Management of high-risk and rising risk patients; Integrated behavioral care to improve overall

outcomes; Continuous interaction with health system management tools to incorporate lifestyle changes and improve wellness.

TECHNOLOGY: EHRs; Outreach tools; Online educational materials; Text reminders; Telehealth consults (future); Remote patient monitoring (future).

RECOMMENDED STRATEGIES: Form strategies and select vendors to promote interoperability; Collaborate with clinicians to improve educational resources; Position EHR systems to incorporate, track, and manage behavioral health data.

A ROADMAP FOR POPULATION HEALTH MANAGEMENT



DOMAIN: Engage primary care physicians

GOALS: Enlist PCPs as care team leaders; Get PCPs to work more closely with specialists; Persuade doctors to support PHM; Teach doctors how to use IT tools to improve population health.

CHALLENGES: PCPs are used to fee-for-service and production-based incentives; Difficulty of getting PCPs used to monitoring patients between visits; Transition from being center of all activities to member of care team.

INCENTIVES: Leadership support; Physician champions; Financial incentives, including PCMH care management fees, pay-for-performance, portion of shared savings

through ACO membership, extra FFS income from filling care gaps.

TECHNOLOGY: EHR; Registry; Analytics to understand population; Automation tools for care management and bringing in patients with care gaps, patient portals, open APIs (in future); Telehealth technology; Remote monitoring.

RECOMMENDED STRATEGIES: Apply basic initial technologies that promote patient monitoring; Empower physician groups by selecting practice champions; Leverage technology to allow seamless communication across facility and specialty lines.



DOMAIN: Engage specialists

GOALS: Get specialists to share responsibility for patient care; Give specialists PCP notes, other key data; Send more appropriate referrals to specialists; Have specialists send back reports promptly.

CHALLENGES: Specialists view PHM as PCP project; Specialists don't receive care coordination fees; Other incentives may not be sufficient.

INCENTIVES: Continued referrals; Gain sharing or shared savings; Participation in risk contracts or bundled payments.

TECHNOLOGY: EHR used by both PCPs and specialists within enterprise; Health Information Exchanges; Direct messaging; Referral tracking tools that alert PCP when patient doesn't see specialist or when report hasn't come back.

RECOMMENDED STRATEGIES: Illustrate the business case for engagement with PCPs; Create processes for effective data exchange; Utilize direct messaging, HIEs, and EHR-driven referral tools infrastructures that enable seamless reporting.



DOMAIN: Engage hospitals

GOALS: Provide timely information to ambulatory care providers on hospital admissions and discharges, ED visits; Implement medication reconciliation; Coordinate care to improve handoffs; Reduce readmissions.

CHALLENGES: Most hospitals not involved in PHM, which turns business model upside down; Inpatient EHRs may not be interoperable with ambulatory EHRs; Inadequate or missing processes to coordinate post-discharge care.

INCENTIVES: Readmission reduction; Global risk contracts.

TECHNOLOGY: Health information exchanges; ADT alerts through EHRs or HIEs; Post-discharge automated calls to identify patients in trouble.

RECOMMENDED STRATEGIES: Establish regular meetings with leadership teams across health system; Use and engage care coordination teams for handoffs of care; Utilize HIEs and EHR data to share data; Establish systems for continuous follow up with patients.



DOMAIN: Engage payers

GOALS: Get payers to provide care managers; Use payer analytics to identify high-risk patients; Obtain claims data for variety of purposes; Ultimately, negotiate and establish risk contracts.

CHALLENGES: Health plans in less advanced markets not interested in working with providers; National plans more attuned to needs of big providers; Plans have limited resources to provide care managers and analytics; Plans don't want to do risk contracts for small numbers of members.

INCENTIVES: Show payers that healthcare organization

has mastered PHM on its own; Work with one or two Medicare Advantage plans to reduce costs; Form broader network with other ACOs; Partner practices, hospitals, and other providers to take global risk.

TECHNOLOGY: Data aggregation tools to combine clinical and claims data; Out-of-network tracking tools to help healthcare organization succeed in risk contracts.

RECOMMENDED STRATEGIES: Analyze data from EHR and data warehouses to illustrate PHM effectiveness; Demonstrate interoperability capabilities; Display a firm grasp on claims and payment data overtime; Negotiate payer relationships using these strengths.



RECOMMENDATIONS

- Form patient-centered medical homes (PCMHs) in the health care organization's primary care practices.
- Use the PCMHs to change physician behavior and establish care teams.
- Capitalize on the financial incentives available to PCMHs.
- Show providers how PCMHs and population health management (PHM) can benefit them and their patients.
- Persuade specialists it is in their interest to cooperate with primary care physicians in following the tenets of PHM.
- Use technology wherever possible to forge closer ties between specialists and PCPs.
- Have hospitals in the healthcare system and in other systems send ADT alerts to physicians about admissions, discharges, and ED visits.
- Integrate post-acute care (PAC) providers into the PHM program.
- Embed behavioral health specialists and social workers into PCMHs.
- Get payers on board so that they will provide care managers, analytics, claims data, and eventually, risk contracts.
- Support care managers with analytic and automation tools to increase their cost effectiveness.
- Manage the sickest patients closely but also pay attention to "rising-risk" patients and the rest of the population.
- Build a sophisticated IT infrastructure that uses the latest PHM solutions to augment EHR capabilities in a cost-effective way.

REFERENCES

1. HIMSS press release, "Population health initiatives in healthcare are gaining momentum, but adoption of vendor provided population health solutions are still in early stages," December 15, 2015, accessed at <http://www.himss.org/News/NewsDetail.aspx?ItemNumber=46055>.
2. Blatt, Edward, Eloise O'Riordan, Ljubisav Matejevic, and Martin Duggan, "Addressing social determinants and their impact on healthcare," IBM Cúram Research Institute, February 2013, accessed at <http://public.dhe.ibm.com/common/ssi/ecm/zz/en/zzw03212usen/ZZW03212USEN.PDF>.
3. O'Kane, Margaret E., and Patricia Barrett, "Sneak Preview: 2014 Patient-Centered Medical Home Recognition," NCQA webinar, March 10, 2014, accessed at <https://www.ncqa.org/Portals/0/Newsroom/2014/PCMH%202014%20Press%20Preview%20FINAL%20Slides.pdf>.
4. Shaljian, Michelle, and Marci Nielsen, "Managing Populations, Maximizing Technology: Population Health Management in the Medical Neighborhood," Patient-Centered Primary Care Collaborative, October 2013, accessed at <https://www.pcpcc.org/resource/managing-populations-maximizing-technology>.
5. Grundy, Paul, Kay R. Hagan, Jennie Chin Hansen, and Kevin Grumbach, "The Multi-Stakeholder Movement for Primary Care Renewal and Reform," *Health Affairs* 29, no. 5 (2010): 791–798.
6. Institute for Health Technology Transformation, "12 Things You Need to Know About Value-Based Reimbursement: Building an Infrastructure for Financial Risk," accessed at <http://ihealthtran.hs-sites.com/ih2-value-based-reimbursement-research-report>.
7. Patient-Centered Primary Care Collaborative (PCPCC) Map Tools, "Patient-Centered Medical Home 101: General Overview," Patient-Centered Primary Care Collaborative, slide 15, accessed at <https://www.pcpcc.org/resource/map-tools-pcmh-slide-presentations#sthash.Tcc4HZm1.dpuf>.
8. Centers for Medicare and Medicaid Services (CMS), "Comprehensive Primary Care Initiative," Department of Health and Human Services, April 14, 2016, accessed at <https://innovation.cms.gov/initiatives/comprehensive-primary-care-initiative/>.
9. CMS, "Chronic Care Management Services," Department of Health and Human Services, May 2015, accessed at <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/ChronicCareManagement.pdf>.
10. Robeznieks, Andis, "'Medical neighborhood' project has \$20 million in federal help," *Modern Healthcare*, January 4, 2013, accessed at <http://www.modernhealthcare.com/article/20130104/MODERNPHYSICIAN/301049974>

11. Nutting, Paul A., William L. Miller, Benjamin F. Crabtree, Carlos Roberto Jaen, Elizabeth E. Stewart, and Kurt C. Stange, "Initial Lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home," *Annals of Family Medicine* 7 (2009): 254–260.
12. Klein, Sarah, and Martha Hostetter, "In Focus: Integrating Behavioral Health and Primary Care," Commonwealth Fund, Quality Matters Archive, Aug./Sept. 2014, accessed at <http://www.commonwealthfund.org/publications/newsletters/quality-matters/2014/august-september/in-focus>.
13. Ibid.
14. Patient-Centered Primary Care Collaborative (PCPCC), "Why Behavioral Health Needs to Be Integrated into the Patient-Centered Medical Home," Behavioral Health Integration into the PCMH, presentation, accessed at <https://www.pcpcc.org/resource/behavioral-health-integration-pcmh>.
15. Hepworth, Adam J., and C. Frederick Geilfuss, "Final Rule Will Give ACOs Participating in MSSP Access to More Data for More Beneficiaries," *Health Care Law Today*, June 29, 2015, accessed at <https://www.healthcarelawtoday.com/2015/06/29/final-rule-will-give-acos-participating-in-mssp-access-to-more-data-for-more-beneficiaries/>.
16. Ian Duncan, *Healthcare Risk Adjustment and Predictive Modeling* (Winstead, CT: ACTEX Publications, 2011)
17. The CMS Blog, "Comments of CMS Acting Administrator Andy Slavitt at the J.P. Morgan Annual Health Care Conference," Jan. 11, 2016, <http://blog.cms.gov/2016/01/12/comments-of-cms-acting-administrator-andy-slavitt-at-the-j-p-morgan-annual-health-care-conference-jan-11-2016/>
18. CMS, "The Merit-Based Incentive Payment System (MIPS) & Alternative Payment Models (APMs)," <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MACRA-MIPS-and-APMs.html>
19. Explorys, "The Explorys Platform: Liberate Your Data," <https://www.explorys.com/uploads/4/3/9/2/43922245/explorys-platformoverview.pdf>
20. Edward Blatt, Eloise O’Riordan, Ljubisav Matejevic, and Martin Duggan, "Addressing social determinants and their impact on healthcare," IBM Curam Research Institute, February 2013, accessed at <http://public.dhe.ibm.com/common/ssi/ecm/zz/en/zzw03212usen/ZZW03212USEN.PDF>
21. Mercy Health, "Mercy Health and Summa Health create largest clinically integrated network in Ohio," News Articles, November 30, 2015, accessed at http://www.mercy.com/corporate/news_show.aspx?mode=local&id=5020.