First Steps for Population Health

By Elizabeth Gardner

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Asthma afflicts one in 10 U.S. children and costs $3.2 billion annually to treat—often in the form of emergency visits and inpatient stays. One pediatrician at a children's hospital has taken to prescribing HEPA vacuum cleaners for her asthma patients, to keep their homes' air freer of the tiny particles that can trigger attacks. Though it's not "health care" in the medication/procedure/therapy sense, that prescription has cut the kids' ED visits by half and their inpatient stays by 60 percent.

"She doesn't get paid for writing that prescription and the hospital loses money, but it's an incredibly powerful intervention," says the physician's friend, A.G. Breitenstein, chief product officer, provider markets, for Optum, a leading vendor of population health tools and services.

More providers are going to be looking for these types of powerful interventions as the nation seeks to cut its health care bill while simultaneously improving its health. Healing the sick is no longer enough.

Increasingly, they'll be responsible (and paid) for keeping people well. They'll need to go beyond health education, vaccinations and checkups: figuring out who's likely to need a ride to the clinic, who's not filling their prescriptions at the local pharmacy—or who needs a new vacuum.

Population health is a cornerstone of both the Affordable Care Act and the larger effort to reduce costs by preventing the preventable and managing chronic illnesses better.

It's going to require new data, new tools and new ways of working, not just within an institution, but in collaboration with payers, public health departments and community organizations.

A survey of C-suite executives released late last year by Premier, a group purchasing alliance, showed that three out of four health care organizations are planning to join or create an accountable care organization, which requires providers to take overall responsibility for the health of the populations in their service area.

Half will have made the ACO move by the end of 2014. The majority of providers are also making investments in the infrastructure needed to manage population health, including investing in advanced analytic capabilities.

Nearly 75 percent of respondents reported integrating clinical and claims data to better manage population health. Half are using predictive analytics to forecast patient or population needs, and almost half are using an integrated data solution to reduce silos.
Outreach requirements don't stop with ACOs. Because the ACA is likely to reduce the number of uninsured patients who use the charity care services of not-for-profit hospitals, they may lose a significant part of the halo that justifies their exemption from taxes. Therefore, the ACA added a new IRS requirement that hospitals conduct a Community Health Needs Assessment (CHNA) once every three years. These assessments must describe the community served, identify existing health care resources, and prioritize community health needs. Hospitals must also develop an implementation strategy to meet the needs identified through the CHNA.

"They're going to be fined for not doing it, so everyone's doing it, but many aren't doing it usefully or well," says Michael Stoto, professor of health systems administration and population health at Georgetown University School of Nursing and Health Studies, who wrote last year's report "Population Health in the Affordable Care Act Era" for Academy Health.

Stoto says many providers don't have a good working definition for population health, which goes beyond both "health care" and "public health." Such a definition should include:

- Health promotion and disease prevention
- A focus on socioeconomic factors and the physical environment
- A broad system of partners that share data, including health care organizations, public health departments, social service entities, school systems and employers.

While all providers address population health, approaches vary widely, according to a survey conducted last year by the American Hospital Association. About 25 percent of hospitals responded. About 40 percent said they give population health responsibility to one department; about the same number spread the responsibility across three or more departments.

It may be a part-time responsibility for one middle manager, or a full-time responsibility for an entire team led by a top executive, or anything in between. Community partners said they usually include school districts, the local health department and the chamber of commerce, but only 43 percent of respondents reported working with their state health departments.

**The medical neighborhood**

Organizations like Kaiser Permanente in California or Geisinger Health System in Pennsylvania have long taken a population-based view of the services they provide—helped in large part by a reimbursement model that rewards them for more efficient and effective care. However, even they must expand their scope.
Denise Price, Geisinger's system vice president for value-based care and population health, says the organization is working with new partners in its effort to take care of a larger Medicaid managed-care population, as well as people newly insured under the ACA. She calls it a "medical neighborhood," which includes other hospitals, home care agencies, federally qualified health centers, and foundations that are trying to improve quality and access for low-income populations.

Part of the job is fitting the service to the need. "We recognize that nurse case management is an expensive resource," Price says. "Sometimes we can help people by providing someone more available day to day who is closer to them, part of their community, and can help them navigate the system." Geisinger is providing such "health coaches" as part of a collaboration with a local foundation.

An important part of population health is patient stratification: identifying not just the sickest patients, but the ones who will benefit most from the interventions that the organization can offer. "You can't engage everyone, and you don't need to," says Dominique Morgan-Solomon, vice president for population health at Steward Health Care Network in Boston, one of Medicare's 33 Pioneer ACOs. She uses predictive analytics to identify people who haven't yet turned up in the ED but probably will, using data from claims, the EHR, and health risk assessments filled out by patients. They're paired with a care team that identifies social issues like isolation, homelessness or lack of transportation, in addition to strict "health" concerns, and works to address them.

The Minnesota model

Ideally, population health efforts must involve all organizations in a community—even those that may compete with one another. For an idea of how it's all going to work, take a look at Minnesota, which often leads other states in adopting new approaches to health care. It has the best health outcomes of any state, according to the United Health Foundation. It's the home of the original "center of excellence," the Mayo Clinic, founded more than a century before centralized excellence was fashionable.

The majority of Minnesota's physicians practice in large multi-specialty groups, a growing trend, even though 60 percent of physicians nationally are still in groups of 10 or fewer. Fee-for-service medicine is already disappearing in favor of fixed-cost contracts.

"Sixty percent of commercial lives in Minnesota are covered under a total-cost-of-care contract, and patients are blissfully unaware of that fact," says Mark Sonneborn, vice president of information systems for the Minnesota Hospital Association. Minnesota also leads in the kinds of cross-organizational collaborations that population health requires.

It boasts several organizations that coordinate regional and state quality improvement projects: The Institute for Clinical Systems Improvement (ICSI), funded by about 50 medical groups and four health plans; MN Community Measurement, also funded by a coalition of payers and providers; and Stratis Health, which serves as the state's Medicare
QIO but also involves itself in quality improvement projects for the health care system as a whole.

A statewide collaboration, Reducing Avoidable Readmissions Effectively (RARE), began in 2011. It has engaged more than 80 hospitals, physicians, along with community health organizations, home care providers and nursing homes. It focuses on five key areas: Comprehensive discharge planning; medication management, patient and family engagement, transition care support and transition communications.

The interventions can be simple, says ICSI Project Director Kathy Cummings. "In those first seven days post-discharge, we have found it's very effective to make a purposeful call to the patient: 'How are you doing? Have you been able to get your medications? Do you have a plan if a warning sign happens again? Do you have your follow-up appointment with your physician and do you have a way to get there?'"

The project relies on claims data from hospitals to identify which patients are most at risk for readmission. The Minnesota Hospital Association analyzes it using software purchased from 3M and returns it to each hospital, flagging potentially preventable readmissions. The hospitals dig deeper to identify ways to improve, through better communication, medication reconciliation and transitional care.

Minneapolis-based Allina Health, which has 15 hospitals and more than 90 clinics, has an enterprise data warehouse fed by more than 30 different data sources, both internal and external. Ross Gustafson, vice president of performance resources, oversees the warehouse and the staff and tools for using it.

One of his two Ph.D. statisticians has created a framework of 500 variables that he says can predict almost anything. While the team has concentrated initially on length of stay, likelihood of readmission within 30 days and likely need for a skilled nursing facility after discharge, Gustafson says it's also working on the next step for population health: catching potential patients before they need to be hospitalized and working with their primary care physicians to get them assigned to a case manager.

"We can identify patients at risk for developing chronic disease, and the goal is to have targeted strategies for each layer of the pyramid," he says.

The RARE campaign estimates that it's prevented more than 6,000 avoidable readmissions and reduced inpatient costs by $55 million. Cummings says the next step is to make those improvements permanent. "Campaigns come to an end, but the work to close the chasms should continue."

Crunching

While very large health systems may choose to develop their own analytic capabilities, most providers will probably turn to vendors for help. EHR vendors are beginning to
address population health concerns more broadly, and stand-alone vendors are developing new products.

Optum's A.G. Breitenstein says the data aspect of population health breaks down into four realms:

• Gathering the data
• Making sense of it
• Applying sophisticated analytics
• Delivering the results via tools that are useful at the point of care.

"Our job is to take big data and make it into little data," she says.

A vendor's ability to clean data might be worth at least as much as its analytic services. Optum normalizes data from multiple sources: for example, correcting 50 different misspellings of the drug "lisinopril" and correctly classifying it as an ACE inhibitor. When the technology has seen a variation once, it recognizes subsequent occurrences, making the data progressively easier to clean.

"It's not magic, it's just a lot of hard work," Breitenstein says. "We have some of the most anal-retentive people I've ever met in my life validating this data."

Sometimes that validation leads to surprising discoveries. One client had a set of lab values that seemed not just a little off but downright crazy, included among others that looked fine. Was there something horribly wrong with the equipment, or with the patients? On further inquiry, Optum analysts discovered that the lab in question also did business with the town's veterinarian, and the values being used for humans were for dogs and cats.

Even providers who have years of experience with managed care, risk-based contracts and the patient-centered medical home are finding population health challenging. "We are finding out that our clients are going to need a lot of support," says Richard Hodach, M.D., chief medical officer for Phytel, Dallas, whose population health management software is used by more than 160 hospitals and health systems. "They're used to managing the people who come in, not the ones who could become high-risk patients if they're not identified. If you have a diabetic with an A1C value over 9, they're on track for a heart attack or stroke or renal failure. And sometimes they're not coming in [for follow-up care], for whatever reason."

Phytel analyzes billing, scheduling and EHR data. Like Optum, it spends a lot of energy on tidying up the data, and can pull it out of 50 different billing systems and all the major EHRs.

"There's a lot of difference between them and within them," Hodach says. "You'd think those A1C values would be ready to be pulled out, but they aren't. They may be in four or
five different places, or scanned in from a lab. We have to go in with a team that knows where they are and maps them. It's a lot of work but the results are great."

Peter Edelstein, M.D., CEO of MEDai, a subsidiary of Lexis/Nexis, extols his company's ability to analyze not only a provider or payer's own records, but the massive number of public records available from its parent company. "One of the most frustrating things for a clinician is trying to understand who's at risk for not picking up their meds, not following up with appointments, not getting good wound care—all the things that lead back to the ER," he says. "It's amazing how much you can learn from non-health care records: who doesn't have a vehicle, who's financially troubled, maybe homeless. Providers have limited resources, so if you have an experienced social worker, you can steer her to the 12 people she should concentrate on."

**Extreme caution**

While linking all those pieces of information sounds potentially Big Brotherish, Edelstein says the company works closely with privacy specialists and attorneys to make sure there's no occasion for paranoia. "HIPAA makes us extremely cautious," he says.

MEDai plans to release, by the end of March, a new iteration of the company's Risk Navigator product designed for front-line caregivers directly responsible for allocating those scarce resources, Edelstein says. Using a handful of criteria, it can identify patients at high risk of an ED visit, as well as those highly motivated to take care of themselves. "The touch of a button can give you a list of the patients that can benefit most from the services you have."

Breitenstein's advice is to start small. "You really only make progress when you focus on a few simple things, like ED visits and length of stay," she says. "If you try to boil the ocean, it doesn't have practical, digestible meaning to the patient. You need to be able to say, 'We're going to take your diabetic mother and keep her healthy. She's not going to lose her feet, or her eyes.' When we can do that, that's going to be the day I feel we've changed the health care system."

**FOR MORE INFORMATION**

Association for Community Health Improvement (American Hospital Assn.)

Institute for Clinical Systems Improvement: [http://www.icsi.org](http://www.icsi.org)

Minnesota Community Measurement: [http://www.mncm.org](http://www.mncm.org)

Stratis Health: [http://www.stratishealth.org](http://www.stratishealth.org)

RARE readmissions campaign: [http://www.rarereadmissions.org/](http://www.rarereadmissions.org/)

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