Technology Optimization in the Era of CQMs and Population Health

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Administrative Burden on Providers

Nowhere else in modern medicine has the administrative burden placed on providers grown as intrusive as within the US healthcare system. As policymakers and payers grapple with how to rein in decades of uncontrolled spending, many quality management and population health initiatives are being independently piloted. Each focuses on improving the IHI Triple Aim but imposes subtle changes to the way providers document and deliver care.

In the last decade, physician reimbursement models have shifted from a relatively simple fee-for-service model to more nuanced value-based reimbursement models, in which payments are adjusted to encourage providers to make fiscally sound clinical decisions, while simultaneously rewarding improved quality of care. These programs generally establish their own unique sets of quality improvement goals and, as a result, introduce different clinical quality measures that must be documented and reported on by providers and health systems. Value-based reimbursement programs come in many forms, including:

- MACRA Quality Payment Program (MIPS)

- Accountable Care Organizations (ACO)

- Patient-Centered Medical Homes (PCMH)

- Hospital Value-Based Purchasing

- Skilled Nursing Facilities (SNF) Quality Reporting Program

- Home Health Compare

- Hospice Quality Reporting Program

To date, there has been poor coordination among policymakers and payers as these initiatives have been designed and implemented. As a result, health systems and providers are being asked to report on different quality measures for their varying patient populations. Further, quality measures tracked for the individual patient change significantly as the patient moves through the continuum of care, from outpatient to inpatient to post-acute care. Beyond value-based care requirements, other ongoing legislative initiatives, such as the EHR Incentive Program, establish additional quality measures that must be documented and reported to meet program participation guidelines.

Running in parallel to these quality-reporting requirements are emerging best practices in population health. Population health programs aim to take a big data approach to identifying high-cost patient populations and proactively managing their care to reduce expensive health services' utilization. To this end, organizations have implemented homegrown population health initiatives, often imposing an additional administrative burden on providers as the need for discrete and accurate disease management data grows. In a recent BRG white paper, experts Kristen Geissler and Rebecca Altman explain:

> Population health and clinical quality are meant to capture different things, about different individuals, at different points along the care continuum. As such, the measures use multiple and disparate sources of information in their development, including state and federal vital statistics, payer claims data, and electronic health records. Specifically, the integrated EHR platform may prove critical to capturing the data needed for standardized measure development. As its use by clinicians and entities increases, a greater amount of accurate information can be standardized, aggregated, and accessed.[1]

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1   Kristen Geissler and Rebecca Altman *Measuring Population Health and Healthcare Quality Outcomes: From Concept to Reality*, BRG white paper (April 2017), available at: http://www.thinkbrg.com/newsroom-publications-altman-geissler-pop-health.html

This lack of consensus among quality measures and population health objectives is a byproduct of a US health system in the throes of an uncoordinated, data-driven approach to spurring quality improvement and systemic cost control. The administrative burden these programs are creating for front-end providers has become significant, resulting in onerous and often unnecessarily complex clinical documentation requirements.

To ease the administrative burden placed on providers, while ensuring that health systems capture the clinical data needed to effectively report on quality measures and support critical population health initiatives, ongoing electronic health record (EHR) clinical documentation optimization—combined with a diverse data capture plan—is critical to any health system's IT strategy.

A Comprehensive Data Capture Strategy

Clinical quality measures (CQM), though sometimes onerous, are explicitly defined from a data capture standpoint. Each measure is composed of a numerator and a denominator, and each element of the calculation is defined in detail, with both inclusion and exclusion criteria supporting the measurement. Further, while individual measures vary from program to program, a good deal of consensus has already developed around standardized dataset definitions. Diagnoses are referenced using ICD-10 codes, medications using their respective RxNorm codes, and laboratory values using LOINC codes. This detail provides health systems clarity when it comes to implementing data capture strategies.

EHR systems hold much relevant data, including diagnosis, procedure, medication, and laboratory values, that have been mapped to the appropriate standard nomenclature and can be easily repurposed to automate CQM reporting. State and national health information exchanges (HIEs) are rapidly becoming a reliable secondary data source to bolster the quantity and quality of clinical information available within an organization's EHR. Like CQM reporting datasets, health information exchanges have largely standardized around established national standard nomenclatures, so medication or diagnosis lists stored within an HIE for a patient can be imported into a local organization's EHR, where that data can then be put to use supporting clinical decisions, automating CQM reporting, and bolstering population health efforts.

Unlike CQM reporting, population health programs are less technically mature in nature, and national standards do not guide these programs as rigidly as they do CQM reporting or HIE data exchange. That said, population health programs generally start with the same traditional data source: EHR systems. State and federal vital statistics and payer claims data are also incorporated into population health algorithms to help health systems analyze and understand the cost of care incurred by unique subsets of the patient population.

Population health efforts look beyond traditional sources to find meaningful data. Novel data sources are being incorporated into population health initiatives across the United States, with varying levels of success. Early success stories are being reported on the benefit of incorporating patient-generated medical data. Medical devices, such as glucometers and blood pressure cuffs, are being outfitted with secure Bluetooth connections so that measurements taken at home can be monitored by local health systems and early interventional services can be delivered to patients trending in a concerning direction. Activity tracker data is being used to support physical rehabilitation treatment plans and weight loss programs. Outpatient mental health programs are being supplemented with smartphone apps that passively monitor text and voice usage and alert clinicians when patients become socially withdrawn.

At the macro level, big data analytics efforts are showing early success tracking disease outbreaks at the community level. Researchers with Boston Children's Hospital demonstrated the potential of aggregating disparate clinical datasets when they developed a geolocated outbreak map that displays reports of known local outbreaks and sends 'outbreaks near me' alerts to affected populations.
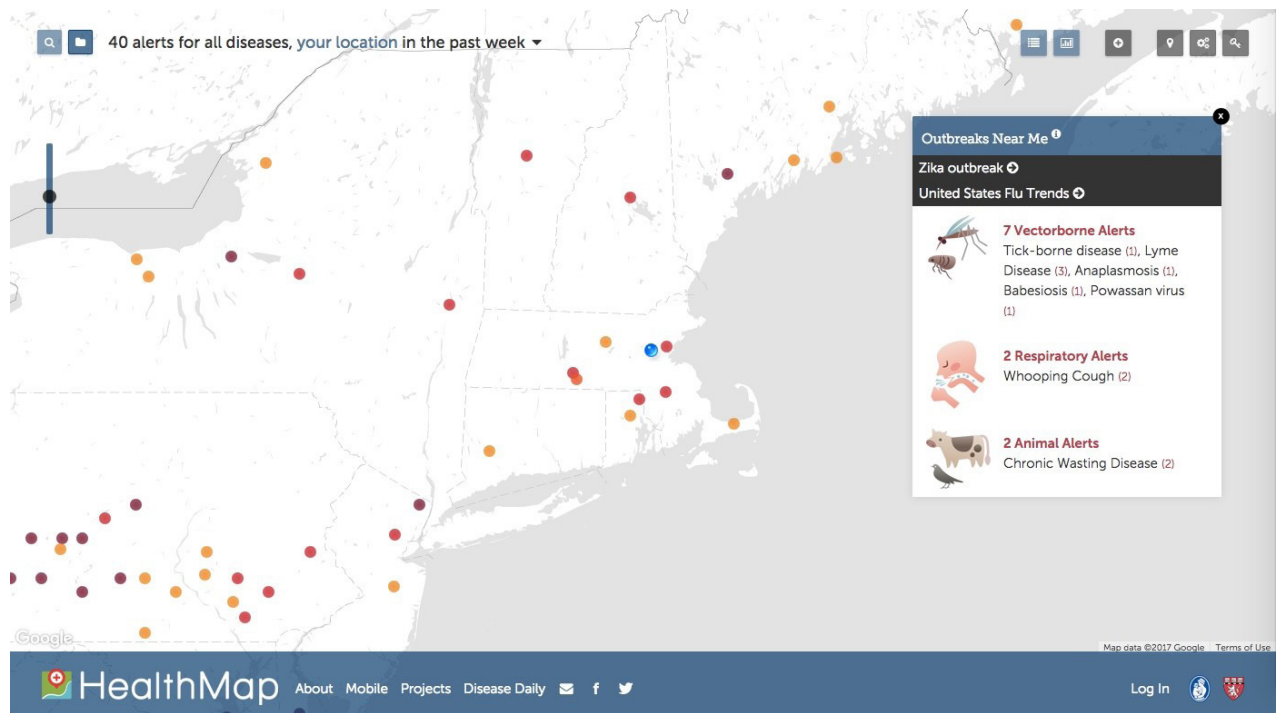
The project, known as HealthMap, consolidates data from the World Health Organization, the Centers for Disease Control and Prevention, GeoSentinel, Eurosurveillance, Google News, and others to identify outbreaks as early as possible. The project's credibility grew considerably after it successfully identified the 2014 Ebola outbreak in Central Western Africa nine days before the WHO confirmed it.

Risk Stratification for Population Health

While the data sources available to health systems may seem limitless, the goals of an effective population health program are more concrete: identify high-utilization populations, implement outreach programs aimed at reducing unnecessary care or redirecting necessary care to lower-cost care settings, and then measure the long-term effectiveness of those efforts.

Regardless of the dataset incorporated into a population health initiative, risk stratification remains the starting point of any program. The goal of risk stratification is to sort the overall population into subgroups that pose enough risk to warrant additional preventative care or services. From a population health standpoint, those subgroups comprise high utilizers.

Overutilization of expensive health services happens for many reasons, and data analysis can begin to peel back the complexity of this issue to expose common underlying causes. Often, poor understanding or management of chronic conditions results in repeated acute episodes that drive patients to the emergency department and increase overall utilization of services; in other cases, ineffective medication management drives up utilization.

Relatively simple data analytics tools can be used to highlight quickly and effectively which patients have higher-than-normal chronic disease–associated services utilization rates. Optimizing EHR problem lists and clinical documentation templates to then alert providers across the continuum of care of when they are caring for high utilizers can improve care coordination and empower providers to identify and resolve underlying issues. Additional patient education, enrollment in disease-specific outreach programs, and reinforcement of treatment plan compliance can then be more effectively provided.

Risk Stratification for CQM Improvement

Clinical quality improvement goals are also relatively straightforward: identify patients included in CQM reporting denominators in a given care area, and alert front-line providers to ensure that mandated steps are completed and documented in the appropriate format to satisfy automated reporting processes.

Unlike with risk stratification approaches in population health programs, improving CQM scores—especially in the acute care space—requires a more real-time approach to data analytics. Dashboard-based analytics has proven to be especially beneficial to clinicians, helping them identify and monitor patients at a high risk for hospital-acquired infections or injury, both of which are frequent metrics targeted by CQM. Implementing dashboards, or optimizing EHR patient census lists, to present clinicians with a high-level view of key indicators (such as prophylactic antibiotic administration time, patient temperature, and WBC count) can help reduce hospital-acquired infection rates and improve CQM scores.

Analytics-based risk stratification methods are also useful as health systems work to lower readmission rates. In this situation, the underlying challenge is using data to accurately identify which patients are at a higher risk of readmitting, so that measures aimed at controlling the transition of care for those patients can be provided.

EHR systems can also help improve quality metrics that strive to ensure specific patient populations receive nationally accepted standards of care. For example, ischemic stroke patients need to be prescribed antithrombotic drugs at hospital discharge. Effectively optimized EHR systems can present targeted reminders to providers caring for these sub-populations to help them comply with varying mandates, while relieving the pressure to remember every step needed to satisfy each sub-population's CQM requirements.

Measuring Population Health and Healthcare Quality Improvement: From Concept to Reality

As health systems continue down the path to value-based reimbursement, CQM improvement efforts and population health initiatives will continue to hold a place on healthcare executives' priority lists. Battle-hardened CMIOs will be quick to note that effectively managing an EHR platform that supports both CQM improvement efforts and population health initiatives runs a risk of driving the administrative burden on providers beyond a tolerable threshold. As EHRs evolve from tools used to automate clinical and administrative workflows to databases used to support significant data analytics projects, ongoing EHR optimization will be necessary and should be planned alongside each new project.

With an appropriately optimized EHR and a sound understanding of data analytics, health system executives have the tools to identify high-risk patients at any point along the care continuum and engage providers to increase patient satisfaction, improve patient outcomes, reduce utilization rates, and manage CQM scores.

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