The 3 Must-Have Qualities of a Care Management System

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Care management is the range of activities intended to improve patient care and reduce the need for medical services by helping patients and caregivers more effectively manage health conditions. Many healthcare organizations are just entering risk-based contracts, where they will be held accountable for providing care to specific populations of patients while practicing good care management. Other organizations have extensive experience providing care management, but they use home-grown or commercial tools that cannot scale with growth. And yet other organizations, operating in the fee-for-service (FFS) environment, barely break even on their existing care management efforts and they want better performance.

What's needed is an analytics-driven care management system that addresses these issues by streamlining workflows, prioritizing daily tasks for care team members in a predictive way, and steering activity to the areas that will positively impact the most patient lives in the most efficient way.

The DNA-Driven, All-Inclusive System Approach to Care Management

A care management system must be evaluated in three areas: comprehensiveness, inclusivity, and analytics focus.

A Care Management Tool Should Be a Comprehensive System

First, a care management system must be exactly that: a system. Electronic medical records (EMR) or care coordination alone cannot meet the needs of healthcare organizations under value-based care. A true system brings a suite of products that integrate data from all sources, stratify patient risk, organize patient intake, manage patients through comprehensive care coordination, present two-way communication between patients and care managers, and measure care team performance.

The technology to support care management begins with the EMR, but goes far beyond the mere digitization of a patient's medical history. While EMRs are necessary sources for collecting and storing data, they are not the interactive workflow tool that clinicians need for timely and judicious decision making.
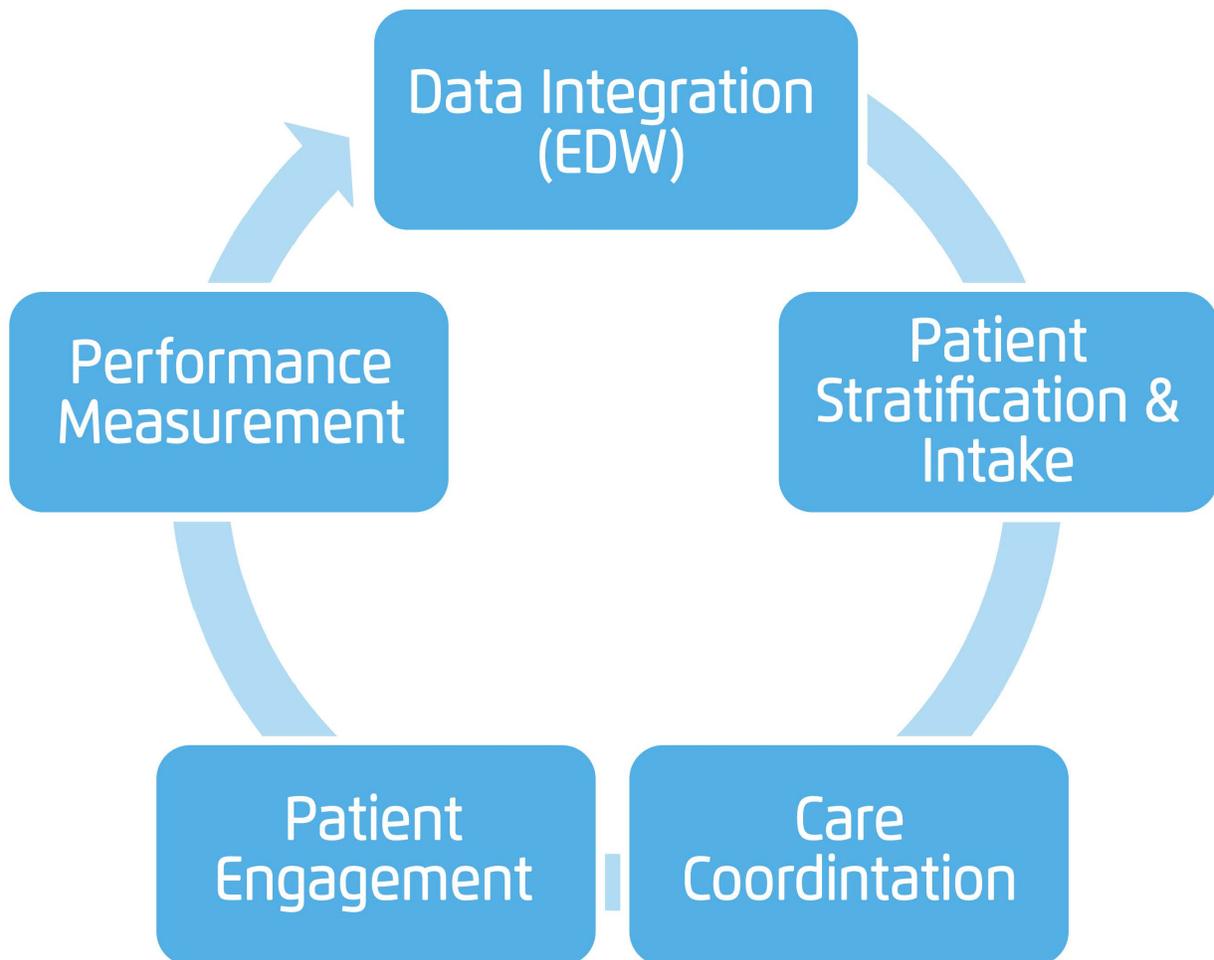

Figure 1: The 5 core competencies of care management.

What's needed is a suite of tools with features in all five core competencies of care management:

1. **Data integration**: The ability to pull data from multiple EMRs and other data sources, then aggregate, analyze, and make it available to the right people at the right time.

2. **Patient stratification and intake**: Using analytics-driven decision making to identify high-risk, high-utilization patients. This tool also supplies care managers with prioritized worklists for interventions, and greatly simplifies their work.

3. **Care coordination**: The timely, all-inclusive care team communication and collaboration on patient assessments, care planning, and interventions.

4. **Patient engagement**: Informing patients about their care planning and facilitating interaction among all care team members through application-based secure messaging, assessments, care planning and associated activities, and education.

5. **Performance measurement**: Advanced reporting capabilities to show how the care team performed after analyzing and acting on the data provided.

These are the tools that comprise a comprehensive care management system, but two other areas more acutely define its value and effectiveness.

A Care Management System Should Be All-Inclusive

A care management system should not be bound by a single EMR and should span a variety of other data sources. This enables communication across the entire care team, which can comprise patients, acute care, primary care, specialty care, therapists, social workers, and care managers. When there are multiple health systems and employers working together in a wellness program, the variety of data sources and care team members grows even more complex. Therefore, a care management platform must sit at a level higher than an individual EMR. It must pull data from every system and be the platform where communication takes place.

Care management is especially complex within ACOs, where interoperability is key. An ACO can be an amalgamation of healthcare systems working together to go at-risk for a population of patients. It can also be a single system that grew after a series of acquisitions or mergers of smaller health systems. Regardless, it's common for each health system to have a different EMR, so they are using multiple data systems. If the tool for care coordination is within just one of those EMRs, then only a subset of the data is available, excluding the information from all the other EMRs and health systems within the ACO.

EMRs typically don't have ideal data warehouse solutions for collecting claims data, socioeconomic data, and other custom data feeds that allow advanced analytics in a care management system. The data integration factor alone is why it's crucial for the data warehouse component of the care management system to span across all data sources.

A Care Management System Should Have Analytics at Its Core

The care management system should have analytics in its DNA, which means the system's developers should also have analytics in their DNA. The system must be able to analyze data to figure out trends and patterns that drive better outcomes for patients and change the day-to-day workflow for clinicians. Embedding analytics, machine learning, and data-driven quality improvement capabilities within the tools is natural when these specialties are deeply ingrained as part of the software development.

The DNA of EMRs, on the other hand, is in digitizing paper processes. They are digital filing cabinets with problem lists in one file and communications in another. To an extent, they automate manual clinical processes, but when it comes to suggesting new workflows, stratifying and identifying patients at risk for certain conditions, and enabling better decision making based on analytics, EMRs aren't the most effective choice.

Technical Specifications of Embedded Analytics

A primary use of care management is to identify and provide care for high-risk patients—those who generally have multiple comorbid conditions and socioeconomic issues. Healthcare professionals generally fall into two categories: specialists focused on a single clinical condition and primary care physicians with a thinner understanding across multiple areas. However, care management requires the talents of both, focusing on patients with eight different comorbid conditions and 20 active medications that they take on a daily or weekly basis. To expect one person to dive even superficially into the various implications is almost unrealistic. When a care manager steps in and decides to focus on one condition, like depression, then the intervention for that condition might worsen another.

There are three things to look for in a system that represents intelligent care management:

#1: Patient Stratification and Intake Algorithms

The Health Catalyst Patient Stratification and Intake tool is embedded with multiple algorithms. This creates a much more reliable readmission risk-assessment tool than commonly-used risk scores, like the LACE index, because it uses machine learning and local datasets so care managers can focus on the patients who are most likely to be readmitted.

There are three levels of maturity in the patient stratification process. Determining who:

1. is at risk for x, y, or z at present
2. is at risk for x, y, or z in the future
3. can be most impacted, independent of who is at risk

Stratification programs that don't get beyond level 2 have little ability to change outcomes for those most at risk of developing a condition. Knowing who to drive changes for is the holy grail of stratification in care management.

The Patient Impact Predictor™ is new technology used in level 3. It uses results from previously-enrolled patients to provide a score that helps determine not only who is being readmitted, but also which patients can be most impacted. Some patients always end up being readmitted, regardless of the number of interventions, so spending additional time on them is inefficient. The Patient Impact Predictor helps determine those with the highest likelihood of success (e.g., who will start exercising, who will change diet, and who will be medication compliant). This is embedding analytics to provide the biggest impact on patients.

#2: Embedding Analytics in Care Coordination

The Care Coordination tool facilitates the work of care team managers as they talk to patients and complete surveys or record information about the interaction. The tool allows them to schedule visits and confirm medication compliance. It determines actions based on goals. If a goal is set for a diabetic patient to lower his hemoglobin A1C values, then the tool proposes four different things that will have the most impact, and then prioritizes the one that has had the most impact on similar patient types. It will suggest a list of things for him to do or what care team members can do on his behalf, like scheduling a PCP or endocrinologist appointment.

The Care Coordination tool determines actions based on assessments and stratification data. If a patient has a high depression screening score accompanied by three other conditions, then what are the right steps to take? What if the score is low or midrange? There's the potential for many variables to be in play. The right step is to propose the most helpful interventions to the patient based on all the data.

It can help inform the interactions of a nurse with two years of experience based on the interactions of a nurse with 35 years of experience, giving everyone the ability to dive in deeply, ask the right questions, and problem solve. Tools like Care Coordination create a more consistent way of managing outpatients and engaging members of the care team who are not particularly skilled as consultants.

The tool can take large amounts of data to create rules and a real-time, prioritized daily work queue. Essentially, it automatically orders the work for a care manager to, for example, reach out to a patient who keeps missing his appointments, and then click a link to call an Uber driver. Or to reach out to another patient who has gone three weeks without refilling her prescriptions, and another who hasn't been contacted in six months. The technology can algorithmically identify, from a cohort of hundreds or thousands of patients, the ones who just hit the ED again and are back in the hospital. Then it determines what to do with them and queues that up for the care team.

The Care Coordination tool can also determine appropriate assessments based on patient profiles. It considers a patient's specific geographic location, socioeconomic indicators, and clinical conditions to determine if an alcohol assessment, depression assessment, or fitness assessment is most appropriate. The tool proposes the most effective, individualized care options based on all this data and allows care managers to adjust the care plan as needed. Should this patient lose weight, walk a certain distance every day, or take certain medications? This is analytics at a higher level.

#3: Using Analytics in Performance Measurement and Guidance

The Performance Measurement tool is a [dashboard](#) that enables daily views of enrollment, utilization, risk, and cost by care team, facility, and care program. It uses analytics to gauge how care managers are interacting with patients and helps guide them to the types of questions they should ask to provide better care in a more seamless fashion. As more and better data is collected, the tool can guide care managers to discover and resolve issues in a more streamlined and predictable manner.

> *Embedded Analytics Are Behind the Scenes*
>
> *To illustrate a common use of embedded analytics at work, consider when a customer places an order via Amazon.com. Roughly 10 to 20 percent of the information presented is static—the portion that's visible during the order entry process. The rest of the data informing the experience is dynamic, based on embedded analytics that prompt suggestions for the user to act upon. Similarly, embedded analytics within a care management system are hidden, yet actively and consistently guide clinicians and patients toward the right decisions and actions*

Care Team Members and the Care Management System

Care management tools can never replace care manager humans, for several reasons. Care managers are advanced specialists who pull on threads of information to derive solutions where patients didn't even know they needed help. Tools will never be able to replace this, but they can help guide decisions by leveraging all the data sitting under the hood of the care management platform.

For example, a care team has seen exactly 762 patients with similar criteria to the patient currently under consideration. Solution 1 was used on 300 patients, solution 2 was used on 200 patients, and solution 3 was used on the remainder. Their outcomes were x, y, and z, and based on these findings, the patient will have the best outcome from solution 2.

The care management system guides, in real time, new decision-making pathways to drive better care for patients based on other patients with similar clinical conditions, similar social-economic status, and similar ways of engaging in their own care. All this data gathering can help

produce a clearer path. No matter how skilled the care manager, retaining and regularly analyzing all these insights is impossible for any one person. And like Amazon.com nudges its customers about what others have purchased, an effective care management system prompts clinicians on care considerations.

Embedded Analytics Drives Successful Care Management

Analytics-driven design identifies the most important things in the care management workflow and eliminates the guesswork for a care manager. It considers the patient's broader universe and then suggests the right interventions. Without the guidance of embedded analytics, care managers are on their own, which could lead to neutral or poor outcomes.

About Health Catalyst

Health Catalyst is a next-generation data, analytics, and decision support company committed to being a catalyst for massive, sustained improvements in healthcare outcomes. We are the leaders in a new era of advanced predictive analytics for [population health](#) and [value-based care](#). with a suite of machine learning-driven solutions, decades of outcomes-improvement expertise, and an unparalleled ability to integrate data from across the healthcare ecosystem. Our proven data warehousing and analytics platform helps improve quality, add efficiency and lower costs in support of more than 85 million patients and growing, ranging from the largest US health system to forward-thinking physician practices. Our technology and professional services can help you keep patients engaged and healthy in their homes and workplaces, and we can help you optimize care delivery to those patients when it becomes necessary. We are grateful to be recognized by Fortune, Gallup, Glassdoor, Modern Healthcare and a host of others as a Best Place to Work in technology and healthcare.

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