

The Top Six Early Detection and Action Must-Haves for Improving Outcomes



IMPROVING OUTCOMES

3 Systems Approach

- Best Practices
- Analytics
- Adoption

Barriers to Overcome

- Logistical
- Technical
- Cultural

6 Must-Haves for Improvement

- Multidisciplinary Teams
- Analytics
- Culture Change
- Creative Customization
- Proof-of-Concept Pilot Projects
- Health Catalyst® Tools

Outcomes improvement work in healthcare isn't about enforcing cookie-cutter medicine—it's about standardizing care around best practices, which is a highly customized experience. For example, everyone knows that a consistent, evidence-based approach to sepsis screening is critical; but what's just as critical is implementing a screening process and tool in a customized way that meets the health system's needs, culture, workflow, and goals. Continuous, sustainable improvement demands this sensitivity to context.

Health Catalyst's outcomes improvement work embraces the standardization-customization paradox in healthcare by empowering health systems to make it easy to do the right thing through evidence-based best practices that truly work in their unique environments. In Health Catalyst's work with clients on clinical care processes (e.g., sepsis, heart failure, and pneumonia), early detection is a frequent outcomes improvement focus. Prioritizing improvements in early detection and action can yield significantly better clinical, financial, and patient experience outcomes.

This executive report explains the importance of focusing on early detection and action, identifies the top three barriers to improvements in this area, and describes the six must-haves (including the most effective tools) for improving early detection and action. It also features an early detection and action success story—a real-world example of how Health Catalyst® applied its Three-Systems Approach to outcomes improvement to yield measurable, sustainable results.

A THREE-SYSTEMS APPROACH TO OUTCOMES IMPROVEMENT

Health Catalyst® tackles the standardization-customization paradox using its [Three-Systems Approach](#) for achieving meaningful, sustainable outcomes improvement. In this approach, best practice (standardization), [healthcare analytics](#), and adoption (customization) come together to garner system-wide support for improvement work, engage all stakeholders (administrative, technical, and clinical), and inspire a system's best thinking about what works best for their system.

Outcomes-based healthcare also targets a more proactive approach to healthcare: creating a healthcare system that can maintain healthy populations and prevent illness. Early detection embodies a proactive approach to healthcare; and it is often a very promising focus area for outcomes improvement work.

- **System #1—Best Practice:** The synthesis of evidence-based content helps systems focus on best practices. Answers the question, “What should we do?”
- **System #2—Analytics:** Tailored analytics surface and communicate performance in key areas. Answers the question, “How are we doing?”
- **System #3—Adoption:** Improvement services help outcomes improvement teams drive adoption. Answers the question, “How do we transform?”

PRIORITIZE EARLY DETECTION AND ACTION TO IMPROVE OUTCOMES

Healthcare is transitioning away from fee-for-service toward value-based care; a switch that necessitates [outcomes-based healthcare](#). As healthcare organizations strive to make the switch, they must balance the reactive and proactive aspects of outcomes-based healthcare. On the reactive side of the balance, for example, systems must improve how they care for their sick or injured patients—continually find ways to make care safer, more effective, and less costly.

Outcomes-based healthcare also targets a more proactive approach to healthcare: creating a healthcare system that can maintain healthy populations and prevent illness. Early detection embodies a proactive approach to healthcare; and it is often a very promising focus area for outcomes improvement work. Most conditions have better outcomes (require less intensive treatment or allow for interventions that prevent complications) the earlier they’re detected.

Taking a look at sepsis, for example, early detection is particularly important when it comes to improving sepsis outcomes because sepsis progresses rapidly and has a high mortality rate. The patient frequently presents with multiple non-specific complaints that make it easy to misdiagnose the problem and fail to recognize the seriousness of the patient’s condition. In severe sepsis, timing becomes the most important component of the patient’s care. According to a [2006 study](#) by Anand Kumar, each hour that care is delayed increases mortality by 7.6 percent.

Health systems need to improve early detection and shorten the time to treatment by focusing their efforts first in the ED, where the majority of sepsis patients present, and make screening part of triage. Although standardized care, such as a sepsis screening tool,

Overcoming logistical, technical, and cultural barriers to improvement efforts requires a variety of tools and strategies, from analytics and multidisciplinary teams to a willingness to shift an entire culture and get creative about customized ways to implement standard best practices.

is widely understood and targeted, it's the adoption (customization) aspect that tends to stand in the way of meaningful, sustainable outcomes improvement.

THREE COMMON BARRIERS TO OUTCOMES IMPROVEMENT

Health systems understand the importance of early detection and standardized tools, but struggle to overcome logistical, technical, and cultural barriers to outcomes improvement.

Barrier #1: Logistical

Health systems frequently mention the logistical barrier of not having the right people or enough people to implement best practices. Logistical barriers related to work flow and clinical processes (e.g., having IV supplies available at triage), such as scheduling and supplies, can be a barrier to improving early detection. Truly understanding who does what and implementing a standardized way of doing it are logistical barriers health systems must overcome.

Barrier #2: Technical

The availability of and access to [healthcare data](#) is a technical barrier that can be overcome with an [enterprise data warehouse](#) (EDW) that aggregates data and puts the right information into the right hands at the right time. Analytics is one of three vital systems in Health Catalyst's Three-Systems Approach for improving outcomes; without it, systems will struggle to improve early detection and action efforts.

Barrier #3: Cultural

Cultural barriers tend to present the most nuanced challenges, ranging from clinicians who resist standardized tools because they "know sepsis when they see it" to problems escalating concerns without an effective feedback loop, especially in a chaotic ED environment. Many health systems take the "check box" approach to improvement, in which they accomplish a goal, check it off the list, and move on. Multidisciplinary teams can help remove this cultural barrier by integrating change into the workflow and sustaining it. For example, regarding a sepsis screening tool to be administered at triage, multidisciplinary teams can help redesign the workflow in a way that increases adoption of this early detection initiative.

Health systems can't improve outcomes without a system-wide culture that embraces change and the inevitable challenges that come with it. Leadership-driven buy-in for this improvement culture transformation is vital. It must be clearly articulated, consistently reinforced, and continually modeled and demonstrated at all levels. Leadership's role in transforming organizational culture must be continuous and sustainable.

Multidisciplinary teams bring diverse roles, expertise, and responsibilities together; a diversity of experience that's critical for managing care transitions. Teams united around a patient focus can improve care transitions, workflows, and outcomes.

According to the Journal of the American Medical Informatics Association article, [Managing Change](#), "The major challenges to system success are often more behavioral than technical. Successfully introducing such systems into complex health care organizations requires an effective blend of good technical and good organizational skills." Health systems and clinicians may have a strong understanding of sepsis best practice, for example, but still aren't achieving their outcomes improvement goals. To move beyond understanding to implementation, health systems need to focus as much on the "how" of adoption and intervention as they do the "why" of best practice.

SIX MUST-HAVES FOR IMPROVING EARLY DETECTION AND ACTION

Overcoming logistical, technical, and cultural barriers to improvement efforts requires a variety of tools and strategies, from analytics and multidisciplinary teams to a willingness to shift an entire culture and get creative about customized ways to implement standard best practices.

Must-Have #1: Multidisciplinary Teams

Multidisciplinary teams have the power to drive adoption by garnering broad support for standardization and integrating necessary changes into the workflow. Multidisciplinary teams include the variety of roles, expertise, and responsibilities necessary for safe and seamless transitions of care and sustainable improvements. These teams are critical for improving care coordination and communication because they're united around common, patient-centered goals. Health Catalyst® works with health system teams at all levels in all departments, and carefully addresses competing concerns and unite everyone's focus around the patient.

Must-Have #2: Analytics

Health systems need to prioritize analytics and data-driven decision-making. Analytics should surface data to improve and support early detection efforts—showing, for example, where

patients enter the system and where variation in practice and outcomes is greatest. These are actionable insights that help systems know where to focus improvement efforts. Health Catalyst's clinical analytic visualizations, for example, use health system data to communicate current and historical performance in areas that, based on evidence, are most likely to improve outcomes. Visualizations are outcome-focused, aim-directed, and actionable.

- **Outcome-focused:** connected to the health system's clinical, financial, and patient experience performance indicators and expressed in a way that matches the system's quality improvement vision. For example, one client features a sepsis-related visualization for the number of "Lives Saved."
- **Aim-directed:** tailored to specific aims intended to improve system outcomes (e.g., process aims, such as improved compliance with a care bundles).
- **Actionable:** enabling drill-down to granular data at the order or patient level, which helps staff get to the "why" behind the data. This leads to the necessary refinement of interventions to improve performance. For example, one client has a view that reveals and guides the antibiotic choices for pneumonia treatment in sepsis patients.

Must-Have #3: Leadership-Driven Culture Change

Health systems can't improve outcomes without a system-wide culture that embraces change and the inevitable challenges that come with it. Leadership-driven buy-in for this improvement culture transformation is vital. It must be clearly articulated, consistently reinforced, and continually modeled and demonstrated at all levels. Leadership's role in transforming [organizational](#) culture must be continuous and sustainable. Leadership support extends beyond the start of outcomes improvement work it should become the persistent, permanent driving force behind all improvement efforts.

Must-Have #4: Creative Customization

While high-tech interventions, such as EMR alerts, are valuable, don't underestimate the power of low-tech interventions. For example, one health system found that simply putting red blankets on patients who screened positive for sepsis were powerful visual cues that engaged clinicians better

Health Catalyst's Care Process Improvement Maps get clinicians, data experts, and system leaders on the same page—literally—by merging analytics, improvement opportunities, and best practices into one simple visual map. They provide a visual overview of the care process across the continuum of care and includes four helpful items:

- Key, evidence-based best practices for each phase of care.
- Storm clouds indicating areas with the greatest improvement opportunity.
- Metrics and data visualizations available in the application.
- Knowledge assets (e.g., order sets and screening tools).

EARLY DETECTION AND ACTION SUCCESS STORY: THIBODAUX IMPROVES SEPSIS OUTCOMES

Sepsis ranks high on Health Catalyst's key process analysis of opportunity based on financial and volume metrics from a large, normalized data set. Sepsis is a serious medical condition caused by an overwhelming immune response to infection that can lead to tissue damage, organ failure, and death. Between 28 and 50 percent of people who get sepsis die, and it has the highest mortality rate and cost of any condition treated in U.S. hospitals.

Thibodaux Regional Medical Center [achieved sepsis mortality rates below the national average](#) using Health Catalyst's Three-Systems Approach to outcomes improvement.

- **System #1—Best Practice:** Thibodaux performed research and gathered data to identify problems, root causes, and best practice for care of patients with sepsis.
- **System #2—Analytics:** Thibodaux provided analytic support and applications to give faster access to valid and actionable data. The team leveraged the electronic health record (EHR) to provide decision support through order sets, protocols, and alerts.
- **System #3—Adoption:** Thibodaux adopted an agile methodology for application development and implementation. The team also employed education, training, and road shows to ensure a high level of clinician buy-in and adoption.

System #1: Best Practice

To improve early recognition of sepsis in the ED, the team

ABOUT THE AUTHORS



Kirsten Scott has a background in instructional design. She began work at Health Catalyst in 2014 after 12 years as a medical writer at Intermountain Healthcare. There she worked primarily with Women and Newborns and Pediatric Specialty Clinical Programs.



Tracy Vayo joined Health Catalyst® in 2014 as Director of Knowledge Development, bringing over 25 years of experience in various facets of healthcare and clinical writing and education. Immediately prior to her work at Health Catalyst®, Tracy spent nearly 13 years directing the efforts of a clinical publication team at Intermountain Healthcare – creating innovative care process models, patient education, and implementation tools for clinical best practice improvement. Prior to that she directed multidisciplinary education programs at Primary Children’s Hospital and created and managed cardiac rehabilitation and wellness programs for several hospital systems. Tracy holds a Master’s degree in clinical exercise science and a Bachelor’s degree in health education with a communications emphasis.