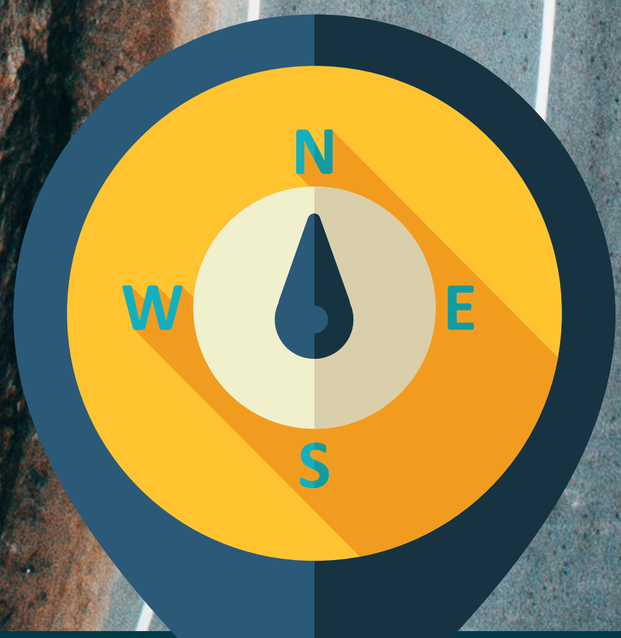
JOURNEY to high reliability

Conquering Sepsis

incorporate these characteristics to reap rewards, avoid penalties and deliver improved healthcare.



PREMIER

high reliability

Contents

Introduction

High Reliability Organization Challenge: Eliminating the Unacceptable

Part of becoming a highly reliable healthcare system means eliminating errors, system failures and ultimately, harm, including harm such as hospital-acquired infections (HAIs) like sepsis.

We believe that following the Agency for Healthcare Quality and Research's High Reliability Organization (HRO) characteristics will result in increased physician engagement, better patient satisfaction and most importantly, an improved level of patient care. And not just facing off against sepsis but patient care overall. After all, isn't that what it's all about?

Sepsis is the leading cause of hospital deaths in the U.S., and nearly 5.3 million people globally die from this infection. Of the 10 percent of U.S. hospital patients that acquire sepsis, about half of them will die while admitted, and at a cost of more than $20 billion annually in the U.S. alone.[1,2] Sobering facts. What's frightening about sepsis is its prevalence. What's maddening about sepsis is its potential preventability. We can help you tackle both.

Let's start the journey, shall we?

01

Deference to Expertise

[*turn to the experts for help*]

It's been said that it 'takes a village'; while perhaps a trite saying, it's nonetheless quite accurate, especially when applied to the complexities of healthcare. In fact, we believe the more challenging the healthcare task, the more of a team effort it requires.

No surgeon heads into an OR flying solo. No administrators make decisions without consulting clinicians. So naturally, you need a team to tackle sepsis.

We have experienced a common characteristic in most successful healthcare HROs is a **deference to expertise** – that is, an organization's leaders and supervisors are willing to listen and respond to the insights of staff and others who know how processes really work, and the risks patients really face.

Through Premier's collaborative, a group of 350+ hospitals teamed together to address quality improvement – including patient safety efforts around HAIs like sepsis – found strength, and results, in numbers.

Through Premier's collaborative, a group of 350+ hospitals that teamed together to address quality improvement – including patient safety efforts around HAIs like sepsis – found strength, and results, in numbers.

01

How They Did It

One of those hospitals, East Alabama Medical Center (EAMC), sought out the assistance of top performing hospitals to learn how they were reducing mortalities. EAMC found that top performers had implemented a sepsis care bundle, which standardized how clinical staff should screen, respond and manage this serious infection.

After applying learnings from the top performers, EAMC estimates its mortality rates have dropped more than **70 percent**, saving **163 lives** and more than **$34 million** in three years by avoiding sepsis-related complications, misdiagnoses and readmissions.[3]

02

Sensitivity to Operations

[*share and share alike*]

Another core component prevalent in a majority of HROs: **sensitivity to operations.** Successful leaders and staff are keenly aware of the current state of all systems and processes that directly or indirectly affect patient care, which is key to identifying risks and ultimately preventing them.

We believe sharing data transparently allows the analysis and assessment of what's working and what's not. We have experienced that hospitals that gathered and shared data collaboratively, found that sepsis topped the list for patient mortality drivers.

> We believe sharing data transparently allows the analysis and assessment of what's working and what's not. We have experienced that hospitals that gathered and shared data collaboratively, found that sepsis topped the list for patient mortality drivers.

02

How They Did It

To tackle the problem, member hospitals set up specific sprints around sepsis, taking best practices from the top performers. These included techniques for early detection in the emergency department, early measurement of serum lactate levels, prompt initiation of antibiotics after blood cultures and aggressive fluid resuscitation.

Interventions like these moved sepsis from the leading driver of death to the bottom of the list, showing members avoiding about **1,700 sepsis-related mortalities** per quarter. As a result of these interventions, absolute sepsis mortality rates among member hospitals **dropped by 18%**. Data shows those hospitals did as much as **10% better** in the area of mortality than other hospitals, in addition to saving nearly **$18 billion** overall.[4,5]

03

Preoccupation with Failure

[*learn, then learn some more*]

Healthcare is a high-stakes business, where even infrequent failures in critical processes can mean the difference between life or death. That's where the high reliability mindset comes in. It's about creating a culture and implementing processes that dramatically reduce system failures and garner an effective response when failures do occur.

Which leads to another core component of most healthcare HROs: a **preoccupation with failure.** These organizations view "near-misses" as evidence of a system that needs improvement, rather than evidence of a system with effective safeguards. The areas where these near-misses occurred? They need more attention.

We have experienced that when an organization is able to use the findings from existing success stories and case studies as a point of reference and then compare their current state to that standard, improvement occurs.

> We have experienced that when an organization is able to use the findings from existing success stories and case studies as a point of reference and then compare their current state to that standard, improvement occurs.

03

How They Did It

A opportunity assessment performed by a Premier embedded clinical expert at Frederick Memorial Hospital (FMH) in Maryland revealed that the hospital was not performing as expected in caring for patients with a sepsis diagnosis. The Premier clinical partner worked with a multi-disciplinary hospital task force to identify early recognition of sepsis signs as vital, along with the appropriate clinical management for severe sepsis.

An action plan was developed to address these points, including implementing new emergency department and management guidelines as part of an upgraded sepsis protocol. FMH experienced significant outcome improvement, with sepsis mortality observed to expected (O/E) ratio dropping almost **60 percent**, from **1.53 in 2012** down to **0.65 in 2016**, with a few months as low as **0.10**.[6]

04

Reluctance to Simplify

[*simple isn't always the best approach*]

There are many complex and layered circumstances that occur in the healthcare arena, it's virtually an endless barrage of if/then scenarios that are equal parts expertise and instinct. But we believe there's one constant: strategic planning provides organizations with a sense of confidence and readiness when facing difficult challenges.

Planning aligns with another common characteristic most HROs possess, the **reluctance to simplify.** High reliability mandates that simple processes are good but simplistic explanations for why plans succeed or fail, are risky. We believe organizations need to dive deeper into issues, procedures and methods, avoiding simplified explanations such as "unqualified staff" or "inadequate training" to understand the true reasons patients are at risk.

05

Commitment to Resilience

[*never forget the patient*]

Since we know any system, well-oiled as it may be, will fail at some point, it's paramount for the HRO to possess the next core component: **resilience**. Resilience starts with training and preparing the organization's leaders and staff to respond effectively when system failures occur – because they eventually will. For healthcare organizations, a large part of the drive to fix what's not working comes from having a sense of purpose.

Let's also keep this in mind: even the 'wins' can have consequences. Patients who survive sepsis are often impacted with detrimental effects on their wellbeing and everyday life.

We believe that HROs remember behind every case of sepsis is a person – someone's spouse, parent, sibling, loved one, with family depending on them, their income, their companionship.

We believe that HROs remember behind every case of sepsis is a person – someone's spouse, parent, sibling, loved one, with family depending on them, their income, their companionship.

05 How They Did It

Knowing sepsis was their number one driver of mortality, Bon Secours Health System partnered with Premier to improve its mortality review process. With an eye toward instilling a sense of purpose in their review process, the Bon Secours team committed to reviewing three cases a week for 12 weeks. By the sixth week, they confirmed patterns of opportunities to improve care, such as; using sepsis order sets, revising standard fluid resuscitation order forms and revising the best practice alert system. By week 10, the team noted a trend in bi-level positive airway pressure administration that prompted their next 12-week cycle. By week 12, each member of the mortality review team related to the actual people behind the statistics.[7]

Conclusion

The Journey Won't Be Easy. Worthwhile Pursuits Seldom Are.

Change can be challenging to manage. Especially when millions of dollars – and more importantly, lives – are at stake. Fortunately, applying high reliability concepts within your organization doesn't require a huge campaign or major investment of resources. It starts with leadership, across all levels, thinking differently about how the care they provide can be improved.

Implementing and developing initiatives and programs to flesh out these concepts can result in meaningful improvements, including:

- Change and respond to the external and internal environment
- Plan and implement improvement initiatives
- Adjust how staff members do their work
- Implement improvement initiatives across a range of service types and clinical areas
- Spread improvements to other units and facilities

We believe that forward-thinking organizations are successful at seeing what's possible and taking the steps necessary to effectively get there. We hope you're able to use these concepts to help you begin the process of transforming your organization into one that delivers safe, high-quality and efficient care to each of your patients.

Ready to start your journey to high reliability?

Contact Premier today to assess where you are in the journey to high reliability, determine best next steps and optimize your strengths to help you reach your end destination – a high reliability organization.

Call 877.777.1552

Visit PremierInc.com/HRO

Premier Inc. (NASDAQ: PINC) is a leading healthcare improvement company, uniting an alliance of approximately 3,750 U.S. hospitals and more than 130,000 other provider organizations. With integrated data and analytics, collaboratives, supply chain solutions, and advisory and other services, Premier enables better care and outcomes at a lower cost. Premier, a Malcolm Baldrige National Quality Award recipient, plays a critical role in the rapidly evolving healthcare industry, collaborating with members to co-develop long-term innovations that reinvent and improve the way care is delivered to patients nationwide. Headquartered in Charlotte, N.C., Premier is passionate about transforming American healthcare. Please visit Premier's news and investor sites on www.premierinc.com for more information about the company.

Premier Inc. 13034 Ballantyne Corporate Place, Charlotte, NC 28277 | 877.777.1552

References

1 Fleischmann C, Scherag A, Adhikari NK, Hartog CS, Tsaganos T, Schlattmann P, Angus DC, Reinhart K; International Forum of Acute Care Trialists. (2015) Assessment of Global Incidence and Mortality of Hospital-treated Sepsis. Current Estimates and Limitations (article). Retrieved from www.atsjournals.org/doi/10.1164/rccm.201504-0781OC

2 Celeste M. Torio, Ph.D., M.P.H. and Roxanne M. Andrews, Ph.D. (2013) National Inpatient Hospital Costs: The Most Expensive Conditions by Payer (statistical brief). Retrieved from www.hcup-us.ahrq.gov/reports/statbriefs/sb160.pdf

3 Premier QUEST Year 4 whitepaper – Premier. (2013). QUEST ®: High-Performing Hospitals Quality, Efficiency, Safety Transparency (White paper). Retrieved from www.premierinc.com/transforming-healthcare/quality-improvement-in-healthcare/quest/

4 We compared QUEST members at baseline (two years prior to joining QUEST) with their performance benchmark (three years of program participation). A sepsis-related death was defined as a patient expiring in the hospital with a principal diagnosis of sepsis or septicemia, excluding pediatric and maternity patients and diagnoses for systemic inflammatory response syndrome (SIRS), severe sepsis, and septic shock. Sepsis mortality was calculated as the number of inpatient deaths divided by the total number of septic patients. Mortality rates for QUEST members at baseline was 0.143 (s.d.=0.064) and 0.117 (s.d.=0.050) for the performance period. This represents a significant reduction in QUEST's sepsis-related mortality rate of 0.026 ($p<0.0001$) or an 18 percent decrease in absolute mortality. These unadjusted rates compare favorably with national statistics that indicate U.S. community hospitals report an annual 14 to 17 percent sepsis mortality rate.[8]

5 Dollars Saved is an improvement metric calculated by comparing individual QUEST members' yearly cost per discharge to their baseline cost per discharge and aligning the difference against the number of discharges.

6 Debra J. O'Connell, BSN, RN, CPHQ. (2017, September 13). Sepsis Mortality Prevention to Survivorship (Webinar). Premier Advisor Live® Webinar.

7 Rice, E. (2015, August, 18). Six steps to revive the mortality review process (Blog post). Retrieved from www.actionforbetterhealthcare.com/six-steps-to-revive-the-mortality-review-process

8 Hall MJ, Williams SN, DeFrances CJ, & Golosinskiy A. (2011). Inpatient care for septicemia: a challenge for patients and hospitals. NCHS Data Brief, 62. Retrieved from www.cdc.gov/nchs/data/databriefs/db62.pdf