

Population Health *Matters*

Impact of Culture and a Performance Improvement Framework on the “Superior Care Experience” at Main Line Health System

It is widely acknowledged that hospitals across the United States have a significant opportunity to improve their performance in safety and quality.¹ This article describes Main Line Health System’s (MLHS) efforts to address two strategic aims: building a reliable culture of safety and establishing a process improvement infrastructure. We committed to applying the principles and tools related to our strategic aims to areas where performance was suboptimal, including the reduction of Central Line-Associated Blood Stream Infections (CLABSI) and patient falls with harm, as well as to increasing compliance with influenza vaccination.

Main Line Health System’s vision to provide a “Superior Care Experience” for patients, staff and the community translates into consistent delivery of safe, high-quality care in the absence of preventable harm. The work and data presented in this paper supports the first superior patient experience goal in the strategic plan: eliminating preventable harm and death. We address the two objectives driving this goal which include: 1) embedding a reliable culture of safety and 2) eliminating device-related infections. We also strongly believe that all MLHS physicians and staff must be immunized against vaccine-preventable diseases that could harm our patients.

In US healthcare facilities, over 80,000 patients develop healthcare-associated CLABSIs in ICUs annually; almost 28,000 die as a result.² Similarly, from 2007-2008, over 50,000 patients reported falls, in which 50 patients died and over 200 were severely harmed.³ It is additionally known that the influenza vaccine effectively reduces infection in healthcare workers, yet only 53% of

all health care professionals receive the vaccine for a virus that has killed 59,000 Americans in the last 30 years.⁴ Given that the metrics illustrate a substantial need for quality and patient safety improvement efforts, this concerning background information underscores why these initiatives have been among our top strategic priorities at MLHS over the last few years.

Data on over 40 indicators published on the Quality and Patient Safety Dashboard compelled us to focus on three indicators where we demonstrated performance well below nationally published averages. For example, in 2009, the MLHS CLABSI rate for 5 hospitals was 1.62 per 1,000 line days, with 29 persons harmed. The MLHS “Fall with Harm” rate in 2009 was 0.10 per 98,000 patient days, with 10 people harmed and the system flu vaccination compliance for 2009-2010 was only 55%. Thus, our priority goals for 2010-11 included: 1) achievement of CDC’s reported top decile performance for CLABSI in Intensive Care Units (ICU) with prevention measures used *for all patients with central lines*; 2) reduction of falls among all inpatients, but a decrease in “Falls with Harm” for Medical/Surgical patients by at least 50%; and 3) 100% influenza vaccination compliance among individuals employed by or in a contractual agreement with MLHS.

To address these patient safety issues effectively, we needed to create a reliable culture of safety, in which the organization rigorously reinforces safe behavior expectations as work habit, by everyone in all situations, while leaders find and fix system problems that influence behavior. Furthermore, safety exists as an explicit core value, not an implicit assumption

within the organization. Another priority included the establishment of a system-wide framework and infrastructure to increase organizational competency in performance improvement. Over 100 managers, directors and VPs were trained on basic Lean and Six Sigma^{5,6} tools and methods (a disciplined, data-driven approach for improving productivity and eliminating defects) to better focus on decreasing non-value-added work (waste) and reduction of variation. Specific performance improvement concepts used by the CLABSI and Patient Falls teams included creation of standard work, visual cues, identification and elimination of waste, improved flow, inventory control and voice of the customer.

To reduce CLABSI, the Hospital Epidemiologist, Infection Prevention Director and clinical leaders led efforts to decrease blood draws through central lines. “Batching” of lab orders for routine testing was organized to a once/day schedule to protect sterile central line integrity. Leaders successfully launched the *scrub the hub* campaign⁷ in addition to audits providing feedback on bundle/checklist compliance. Reminders to remove lines ASAP were hardwired into daily rounds with medical staff and new workflow screens were designed by Information Systems partners to support these changes.

To support reduction of device-related infections *and* patient falls, the Nursing Department at MLHS developed a new bedside handoff process, designed to ensure that shift changes were safer and more efficient with accurate information transferred and acted upon. Incorporating the review of the falls bundle, along with reassessment of need for continued vascular access, provided another opportunity to ensure safe practice.

A new mandatory vaccination program warranted early planning, constant communication about rationale, rigorous project management and visible leadership commitment. The CEO and Chief Medical Officer decided that universal compliance was the only fair and safe strategy; therefore, vaccination was a condition of employment and requirement for medical staff privileges. Exceptions were, however, made on a case-by-case basis for employees with medical and religious stipulations. Action steps included a concise communication plan with timelines and responsible parties, town hall gatherings, a new website for staff education and automated reminders when physicians accessed the electronic medical record.

Upon implementation of these strategies, our CLABSI rate in 2010 fell to 0.78 per

1,000 line days, demonstrating a 52% reduction from the previous year. “Falls with Harm” were reduced by 80% to 0.02 per 100,000 patient days, and the flu vaccination compliance was 99.9% for 10,170 employees and 100% compliance for 2,750 physicians/advanced healthcare practitioners.

The key to success for the discussed initiatives involved taking the time to learn what other organizations in our state and across the country were doing to improve outcomes. Benchmarking with pioneers of the Comprehensive Unit-based Safety Project (CUSP)⁸ and adoption of Lean Six Sigma methods to expedite change further enabled us to create a System Performance Improvement curriculum that could be applied at any organization. Embracing rules for culture change, including setting clear

expectations, providing training, education and tools required to do the job well, then building and sustaining accountability allowed for system-wide success. Ultimately, our executives took the lead by setting fair expectations, with specific details for behavior and consequences of non-compliance in order to *reliably* deliver safe, high-quality care. ■

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