At Memorial Hermann Healthcare System, everyone is responsible for patient safety. Pictured left to right are Nora Benachour, infection preventionist; Carolina Espinoza, senior infection preventionist; John Butler, M.D., system medical director of epidemiology and infectious disease; Virginia Kennedy, consulting director of infection prevention and control; Robert Morehead, infection preventionist; Lawana Garcia, infection preventionist; and Tawanna McInnis-Cole, infection preventionist.

SAVING LIVES BY CHANGING THE CULTURE

Memorial Hermann Healthcare System Receives the 2011 Bill Aston Award for Quality

By Carolyn Jones

Before 2006, many people at Houston-based Memorial Hermann Healthcare System assumed that hospital-acquired infections were an inevitable drawback of medical care. Central line-associated bloodstream infections or ventilator-associated pneumonias were viewed as unavoidable side effects of hospitalization. Indeed, a CLABSI rate of 9 per 1,000 central line days or a VAP rate of 6.1 per 1,000 ventilator days was not seen as unusual. Fast-forward five years and MHHS's CLABSI rate had plunged by 86 percent while the adult VAP rate was down 81 percent.

In recognition of this achievement, the Texas Hospital Association has honored MHHS with the 2011 Bill Aston Award for Quality in the academic/large teaching hospital/health care system category. Established in 2010, the award recognizes a hospital's or health care system's measureable success in improving quality and patient outcomes through the sustained implementation of a national and/or state evidence-based patient care initiative. The award will be presented Feb. 2 at the THA 2012 Annual Conference and Expo in Austin.

Change from the Top

As often happens in success stories, the seeds of change sprouted at the top. In 2006, the MHHS Board of Directors appointed Michael Shabot, M.D., the system's chief medical officer. The board threw down the gauntlet: Lead MHHS to a zero HAI rate, and make that change sustainable across all 11 hospitals. For a health care system providing 732,000 days of care to 135,000 patients annually, that was no small task.

Energized by the challenge, Shabot teamed up with Juan Inurria, system executive for quality and patient safety, and together they hatched a plan. They started with a philosophy adopted from the aircraft industry, which boasts safe operations despite the potential for accidents. This approach, known as high reliability, demands that the organizational culture make error prevention fundamental to its business operations.

In MHHS' case, a dramatic culture shift throughout the entire system was necessary. For patient safety to be a core value of everyone, responsibility had to be taken in the boardroom. In addition, hospital leaders needed a minute understanding of the clinical processes of their facilities.

A Collaborative Analysis

Shabot and Inurria convened a task force comprising 50 multidisciplinary stakeholders from across the organization. Anyone who had a role in reducing CLABSIs and VAPs was at the table. They presented evidence-based practices for preventing HAIs and then

Memorial Hermann Northwest Hospital in Houston has achieved 12 months of zero infections for both central-line associated bloodstream infections and ventilator-associated pneumonias. Pictured left to right are Jessica Ross, infection preventionist; Susan Shaver, infection preventionist; Juan C. Barriga, M.D., pulmonologist and critical care physician; Regina Allen, ICU nurse; and Rachel Bradley, ICU nurse.

discussed the "burning platform" – MHHS' dismal infection scores compared to national standards. Such comparisons were enough to galvanize action.

In a series of follow-up sessions, the stakeholders mapped out the work processes of their units, identified where their routines conformed to national standards, and diagnosed deficiencies. A month later, the task force achieved consensus on the evidence-based practices they wanted to implement, practices that had been tested at a national level and were proven effective in reducing CLABSIs and VAPs. These were called "bundles" and were to be rolled out across the system.

A Cascading Approach

But Shabot and Inurria knew that success wasn't just about process. It was also about people. Before they implemented the bundles, they shifted responsibility for infection control from infection preventionists to the intensive care unit directors who managed team performance. Having changed the direction of accountability, they now saw ownership start at the top of the organization and cascade downward.

"By doing this, they now held everyone accountable. Everyone from management to nursing at the patient's bedside was equally responsible for ensuring patients were safe," said John Butler, M.D., medical director of epidemiology and infectious disease, who joined MHHS a year into the process.

Initially, the infection preventionists worried that their changed roles would cause clinical units to lose traction on their goals. When they saw the early results from bundle implementation, however, they became excited. Overnight, hospital staff sought them for consultation.

"Finally, they were utilized as the experts, not the infection police," said Inurria.

Collaborate. Benchmark. Review.

To make the changes systemic, MHHS also introduced comprehensive reporting measures for every team involved in infection control. Monthly operational reviews, self-assessment frameworks and strategic action plans became the daily bread of every team across the system.

Transparency was key. Bundle compliance rates were posted in clinical units and public areas, and progress was reviewed in interdisciplinary meetings. Daily and weekly audits became part of the process. Additionally, incremental changes to the clinical process occurred when nurse champions were appointed, when robust bedside routines were implemented, and when the oral care of patients in intensive care units was brought up to national standards.

By June 2008, MHHS could boast a sustained decrease in the rate of CLABSIs and VAPs. Some hospitals had gone several months without a medical device-associated infection.

Realigning around the Data

"We were well into our high reliability journey, but we needed something to get to the next level," said Inurria. "Early on, we'd manually collected samples of bundle compliance. We realized that our data had to be more comprehensive."

In 2009, MHHS upgraded the electronic medical record system to integrate bundle compliance with all clinical documentation. The system triggered daily reviews of patients with invasive medical devices, causing interventions to soar and infections to fall. More rigorous data also offered a less tangible benefit: staff buy-in.

"The hardest part of the project was getting the naysayers on board," Inurria said, "but when they saw the data, they began to realign around it."

Butler agreed. "It's hard to get people to buy in to a process change if they don't trust the data," he said.

By integrating bundles into EMRs, the project garnered the high reliability boost it needed. In August 2011, MHHS announced that one of its hospitals was free of HAIs.

New Goals

Keen to surge toward systemwide zero-infection rates, MHHS joined a collaborative project with The Joint Commission to improve hand hygiene. MHHS systematized the way in which it collected hand hygiene compliance data and pinpointed factors causing noncompliance. In five months, MMHS saw its systemwide compliance rate rise from 44 to 83 percent.

Hospital leaders know they won't see a dramatic reduction in infections until each and every employee, physician and visitor uses the appropriate hand hygiene techniques. By July 2012, hospital leaders aim to achieve a 90 percent compliance rate for every person entering and exiting a patient's room.

Still Striving

Between the board mandate in 2006 and the latest measures today, MHHS can boast 159 fewer episodes of ventilator-associated pneumonia and 296 fewer episodes of central-line sepsis. One hospital, Memorial Hermann Northwest Hospital, has achieved 12 months of zero infections for both.

"Our employees and physician partners have experienced success in the reduction of HAIs by ensuring that they use the defined behaviors that create safety every time," said Shabot. "As part of our journey to high reliability, all leaders, staff and physicians are expected to prevent critical omissions and errors before they can harm a patient."

Despite these successes, Inurria knows the journey is not complete.

"Now when we code a CLABSI or a VAP, it's an industrial accident. Everyone sees this as a failure," he said. "But we're not finished transforming the culture. When it's habit for staff to raise the head of the bed for an intubated patient, when it's habit for physicians to use the full sterile techniques for line insertions, then maybe you can say the culture is there. But there's still great room for improvement. We have not yet completed our transformation to high reliability." ★