**MERCY MEDICAL CENTER:**

Multi-program approach significantly reduces hospital-acquired infections and improves outcomes

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**Hospital:**
Mercy Medical Center
Canton, OH

**Size:**
476 beds

**Challenge:**
To reduce the incidence of both catheter-associated urinary tract infections (CAUTIs) and ventilator-associated pneumonia (VAP) by implementing education and best practice methods in order to achieve improved patient care and outcomes.

**Results:**
Reduced VAP by 85% and CAUTI by 44% in 2012, producing:

- Cost savings of approximately $640,000* in VAP incidence reduction
- Cost savings of up to $8,000* in CAUTI incidence reduction
- Reduced risk of patients developing VAP and CAUTI
- Standardized practices in both catheter insertion/removal and oral care throughout the facility

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The Joint Commission estimates that 75% of all healthcare-acquired infections (HAIs) are either urinary tract infections, surgical site infections, bloodstream infections, or pneumonia.\(^1\) Organizations including the Centers for Disease Control and Prevention (CDC), the Association for Professionals in Infection Control and Epidemiology (APIC), the Society for Healthcare Epidemiology of America (SHEA), and the Infectious Diseases Society of America (IDSA) have put forth a “call to action” to move toward the elimination of HAIs. Since Mercy Medical Center strongly holds to providing the best care for the community, boasting an average performance on both CAUTI and VAP prevention was good, but not good enough. Knowing CAUTI was already a non-reimbursable hospital-acquired infection (HAI) and that in the near future, VAP likely would be as well, it became vital to find sustainable practices to implement in our facility. Interested in providing the best care possible, we wanted to go latex-free with our catheters, and include silver coating for its antimicrobial actions. Mercy Medical Center also chose to adopt the Institute for Healthcare Improvement (IHI) best practice recommendation of using 0.12% chlorhexidine gluconate (CHG) mouthwash as part of the daily oral care regimen for vented patients. All measures were taken with the overall goal of improving patient care and clinical outcomes.

**Facility Demographics**

Owned by The Sisters of Charity Health System, Mercy Medical Center is a 476-bed acute care hospital in Canton, OH, serving five local counties and parts of Southeastern Ohio. It employs 2,500 staff and operates outpatient health centers in Carrollton, Jackson Township, Lake Township, Louisville, North Canton, Plain Township, and Tuscarawas County. Mercy Medical Center has championed excellence and healing for more than a century, committed to being the best because the community depends on it.

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\(^*\) based on facility-assigned cost to treat of $40,000/VAP and $1,000/CAUTI
Mercy Medical Center’s many services include:
• Breast Care Center
• Cancer Center
• Cardiac Rehabilitation
• Family Education
• Heart Center
• Intensive Care
• Laboratory Services
• Maternity
• Occupational Therapy
• Pediatrics
• Physical Therapy
• Radiology Services
• Robotic Surgery
• Stroke Center

In 2009, Mercy provided $19 million in community benefits. Mercy offers community education programs and screenings, clinics for uninsured and underserved patients, and immigrant health outreach. Mercy strives to be a model of community health care, demonstrating service excellence and providing wellness, education, and outreach to their community.

Our Challenge
Mercy Medical Center has been monitoring its compliance on CAUTI and VAP prevention, and while average performance was acceptable, we strive for higher goals to promote a positive healing experience for our patients. Early evaluation of our ICU revealed that staff was only performing oral care on ventilated patients 31% of the time. Significantly improved consistency was necessary not only for our staff development, but also for the outcomes of our vented patient population, especially since our number of ventilator days averaged around 306 per month in 2012. We also had an initiative to go latex-free with our catheters, wishing to evaluate a silver-impregnated catheter for its antimicrobial action, along with an initiative to drop our CAUTI occurrences by 50 percent.

During this period, we identified additional gaps in training, practice, and awareness that were contributing to our higher-than-desirable outcomes. Both the Medline Oral Care kits and the ERASE CAUTI® trays were designed by nurses for nurses, and laid out to not only be intuitive for use, but also to encourage compliance in practice.

With Centers for Medicare & Medicaid Services (CMS) reimbursement tied directly to quality outcomes on high-cost, high-volume issues including CAUTI, and the possible addition of ventilator-associated events such as VAP, there is even more incentive to ensure our patients receive the best care and experience the best outcomes.

The Solution
Medline’s clinical programs were introduced to Mercy Medical Center in late 2011. The Oral Care Program was first in line. Its setup, mouthwash variety, and education were all primary reasons for evaluation. We chose to incorporate the Q4 (every 4 hours) CHG Oral Care kit in order to meet emerging industry standards and provide the most up-to-date care for our vented patients.

Following the successful implementation of the Oral Care Program, we added the ERASE CAUTI Program, tying that education and product together to promote further practice improvement and aid us in our goal of a 50 percent reduction in CAUTIs.

Both Medline programs offer tools to reduce identified inconsistencies. Aside from intuitive product design, the ERASE CAUTI and Oral Care Programs both incorporate training courses accessed via Medline’s online education platform, Medline University® (www.medlineuniversity.com). Education for each program includes a Product Demonstration Video, offering a short overview of and introduction to the product along with practice demonstrations, as well as a Course & Competency piece, which involves a pre-test, post-test, education modules, and interactive competency.

The interactive competencies are self-correcting, guiding learners to choose the correct course of action before allowing them to move on to the next step, and helping them gain familiarity with the kits and trays before working with the physical products.

Execution
Being dissatisfied with our own performance compared with the National Healthcare Safety Network (NHSN) measures and charged by our vice president and chief nursing officer to improve practice and outcomes, Mercy Medical Center turned to our main supplier, Medline, who directed us to well-researched proven products and programs that would help us meet and exceed our infection prevention goals for VAP and CAUTI.

Step 1 – Awareness and Prevention Plan
After establishing the changes we wanted to see in our outcomes, we began both the Oral Care and the ERASE CAUTI Programs with an
awareness week involving posters and other awareness materials announcing the new products and associated education programs. In conjunction with their evaluation period, staff also received onsite hands-on training from Medline staff. By the time the new product made its way to the storeroom shelves, the staff had seen the awareness materials for a week, trained on the new products, and was prepared to experience the shift.

The new oral care kits are arranged to encourage timely oral care, neatly dropping each component kit down at the appropriate time. Pre-measured bottles of CHG ensure that every patient receives the correct dosage when needed. The kit design streamlines practice, encouraging positive outcomes for both nurse and patient.

Similarly, the single-layer ERASE CAUTI Foley catheter trays lay out each piece in the order necessary to complete an insertion procedure, all while maintaining the sterile field and negating the need to stack or unstack various items. The one-layer design provides not only a supply solution, but a clinical solution as well. Evaluating the SILVERtouch® 100% silicone Foley catheter also allowed us to meet our latex-free initiative, while the silver’s antimicrobial properties augmented our preventative CAUTI measures.

Step 2 – Education
In conjunction with the product trial, nurses and staff at Mercy Medical Center accessed the Oral Care and ERASE CAUTI education programs offered by Medline via their online education site, Medline University, which was one of the things that appealed most to us about working with Medline. There is reinforcement value to the education because it is interactive and through self-correction, directs the learner do the right thing. Medline University’s education offerings are completely different from any other education program we use from any other source.

We also received regular feedback on the education progress from a dedicated program manager at Medline, who supplied us with reports showing education access, completion, and test scores. Managers could then see who was compliant and who had not yet met the deadline. Not only did the staff earn one CE credit for the ERASE CAUTI education and a certificate of completion for Oral Care, but they also experienced a significant increase in knowledge for both VAP and CAUTI prevention.

Beyond the online education, the new products themselves continued to educate staff in the store room and at the bedside. Oral Care kits boasted the Institute for Healthcare Improvement (IHI) VAP Bundle on the front, and set-up instructions on the back, with more specific component instructions on each individual kit contained within. For their part, the ERASE CAUTI trays provided a pictorial label showing each component within the tray, and bear a peel-back front label that contains step-by-step instructions nurses can review before approaching the patient.

Step 3 – Implementing the New Products
To pave the way for easier product changeover, we conducted “pre-kick off” education in-services for all nursing and tech staff who worked with oral care or Foley catheters. This education included not only introductions to the new products, but also background education on both of the targeted hospital-acquired infections–VAP and CAUTI–to refresh staff on the importance of prevention. After all the pre-work we had done to educate the staff and promote the outcomes we were seeing with the new products, it was a swift and easy transition to the new product. Those who were initially resistant to the change realized the benefits and ease of the new products once they were fully in practice, and soon became the biggest supporters.

Results
After implementing full Oral Care and ERASE CAUTI Programs, we saw a dramatic change in our infection reports. Infection incidences continued to fall every month, and over the course of a year, Mercy Medical Center’s CAUTI rates dropped 44% and VAP occurrences reduced by 85%, saving the facility thousands in costs to treat these infections, on top of positively impacting patient outcomes.

Staff members continue to access Medline University for education, and both the Oral Care and the ERASE CAUTI education pieces are mandatory components of new hire orientation.
It was a combination of three things that really led to Mercy Medical Center’s success. First, we needed to use the right product. Second, we implemented the right education. Medical staff may do things incorrectly because of a lack of education. As our improved performance showed, the opportunity to access interactive training was another bonus to the Mercy Medical Center staff.

Finally, we noted the importance of reinforcing the changes and giving positive feedback to the staff. Frequent education reports allowed managers to recognize staff who had completed the education and follow up with those who had not yet accessed the resource. We also post quarterly infection data, creating some healthy competition between departments to see who can achieve an entire quarter without CAUTI or VAP incidence. The staff even had the opportunity to personally report their successes with HAI reduction to Mercy Medical Center’s board of trustees in May 2012.

Summary of Clinical Outcomes
- Increased education and awareness on both oral care and Foley catheter care
- Improved compliance in oral care practice
- 85% reduction in VAP incidences in 2012
- 44% reduction in CAUTI rates in 2012
- Significant cost savings due to infection reduction

Mercy Medical Center proudly partners with Medline on both the Oral Care and ERASE CAUTI Programs. Both programs encourage consistent practice, improving patient care dramatically. Medline’s dedication to being at the hospital spreading the word and involving the staff in every aspect of the program evaluations and implementation alleviated the burdens that can come with change, even when it is change for the better. Staff members now have access to oral care kits and Foley catheter trays that minimize confusion with their intuitive setup, resulting in better care and improved outcomes. Monthly education occurs to ensure all new staff are signed up with Medline University and brought up to date on the prevention initiatives as well as the features and benefits of the Oral Care kits and the ERASE CAUTI trays. Outcomes management from our Medline team also keeps us abreast of the programs’ performance, alerting all with education and incidence information and analysis.

As we see our infection incidences continually trending downward, the staff of Mercy Medical Center feels great pride in knowing that we are continuing to do all in our power toward the reduction of hospital-acquired infections and achieving the best possible outcomes for our patients.

References

About the author:
Richard Lyon, BA, MA, JD, RN, CIC, serves as infection control coordinator at Mercy Medical Center. He has extensive experience in infection control, serving as infection control practitioner at two different hospitals within the Cleveland Clinic Health System (CCHS) over the course of eight years. Prior to that, Rich worked in critical care departments in CCHS hospitals, and was an RN Case Manager for Ohio Visiting Nurse Service. Rich’s dedication as Mercy’s infection control coordinator has driven key HAI improvements, producing impressive reductions in CAUTI, orthopedic surgery surgical site infections (SSIs), VAP, and post-coronary artery bypass graft surgery (CABG) SSIs.