



"Smart" IV Pumps Help Keep Patients Safe

One of the more common issues leading to medication errors involves the use of intravenous (IV) pumps, devices used to dispense controlled amounts of medicine and other fluids to patients. In an effort to improve the safety of IV pumps, the Sisters of Mercy Health System (Mercy) has begun to replace standard pumps with Smart Pumps, state-of-the-art infusion devices designed to reduce the chances of a medication error.

"These new wireless pumps are at the forefront of safety technology," said Glenn Mitchell, MD, vice president of clinical safety for Mercy. "Use of these devices is another big step toward reaching Mercy's goal of zero medication errors."

Smart Pumps reduce medication errors by accessing Mercy's drug library and comparing the instructions entered into the pump with preset standards for minimum and maximum doses, which enables the pumps to detect potential over-or-under infusions. Smart Pumps are electronically programmed to alert

co-workers if a dose or rate of administration is too high or too low for an individual patient. A "soft alarm" indicates that the dose or rate is slightly outside normal administration guidelines and a review for safety is indicated before proceeding. A "hard alarm" sounds if the dose or rate is outside of safe limits established by the facility, and the Smart Pump automatically stops the medication from being administered. If the order is found to be outside normal limits, the entry must be corrected by an authorized clinician or a new order must be obtained for the patient.

Early Successes

St. John's Mercy Medical Center in St. Louis and St. John's Mercy Hospital in Washington, Mo., were the first Mercy facilities to introduce the new devices in late 2008 and the Smart Pump technology is already helping patients.

"Good catches have already been made," said Jeffrey Johnson, a clinical nurse in the intensive care unit at St. John's Mercy in St. Louis. "The alarm feature has prompted earlier interventions than would have been possible with our old pumps."

For example, the Smart Pump's Respiratory Rate/End-tidal Carbon Dioxide Monitor provides greater safety for patients

receiving a prescribed narcotic. In the past, nurses checked on these patients every two to four hours to count their respirations and ensure they remained at normal levels. However, this process often woke patients up. Since the respiratory rates would sometimes return to normal when patients woke up, low rates experienced while they slept often were not reported. Now, Smart Pumps constantly monitor respirations without waking patients and immediately alert caregivers to respiratory depression. This allows caregivers to detect issues early and pre-empt respiratory emergencies.

According to Judy Dulle, a clinical informatics nurse at St. John's Mercy in Washington, the new features of Smart Pumps have also helped co-workers program medication and monitor patient status more effectively. "Co-workers are really starting to see the value of this new tool," she said.

Future Expansion

Smart Pumps show promise for adding even greater value to Mercy's future safety efforts. For example, Smart Pumps will be wirelessly integrated with Mercy's new electronic health record system, eventually automating documentation and pump programming. The Smart Pumps technology



Leslie Weir, surgical RN at St. John's Mercy Hospital in Washington, Mo., programs one of the hospital's new Smart Pumps.

also will enhance Mercy's ability to control glucose levels in diabetic patients.

The new devices further support Mercy's ability to measure and monitor patient safety. Smart Pumps' Continuous Quality Improvement data collection application, which obtains information from the pump software, allows Mercy to track programming errors that may have resulted in patient harm. The data then can be analyzed by the Mercy Safety Center to identify patterns of common errors and develop corrective actions and best practices. In St. Louis, physicians are already beginning to use this tracking feature to evaluate their strategies for narcotic administration.

Mercy plans to expand the use of Smart Pumps to all hospitals over the next several years. •



Sister Gayle Evans, RSM

Like many Sisters of Mercy, Sister Gayle Evans, RSM, was influenced to follow a religious vocation by the Sisters who taught her throughout her youth in New Orleans. Three of her four brothers, however, thought it unlikely that she would stay with the community, going so far as to place bets on when she would return home.

Having recently celebrated the 50th anniversary of her entrance into the community, Sr. Gayle long ago proved her brothers wrong, and the spirit of the Sisters of Mercy has stayed with her throughout the years. "I think we are very authentic – we say what we do and do what we say. We also have a special love for people who are struggling. We care about everyone, but we'll particularly walk with those in difficult circumstances," she said.

Sr. Gayle currently serves as director of mission services for St. John's Mercy Health Services, which provides ancillary services such as hospice, home health care, retail pharmacies and occupational medicine to patients in St. Louis and Washington, Mo. In this role, Sr. Gayle focuses on new co-worker orientation

and "rounding," a personal interaction with co-workers where she can serve as a sounding board for them to confidentially express their thoughts and feel heard. She also is active with new leader orientation at St. John's Mercy Medical Center in St. Louis and is a co-leader of the Sisters of Mercy Health System's (Mercy) advanced formation program, which prepares lay leaders and board members to carry on Mercy's mission. In addition, she is on the board of Mercy Health System of Northwest Arkansas.

Sr. Gayle entered the community in 1958 and began her education to become a teacher at Mercy Junior College. She completed her undergraduate degree at Webster University in St. Louis, where she majored in English and minored in science. Her first assignment, in 1963, was to teach "seventh grade everything" at Annunciation School in St. Louis. The next year she transferred to Mercy High School in the St. Louis suburb of University City, where she taught biology for five years. Assignments at junior high and high schools in Mississippi followed before she returned to St. Louis to teach once again at Mercy High School.

After earning a master's degree in pastoral studies at Loyola University in Chicago,

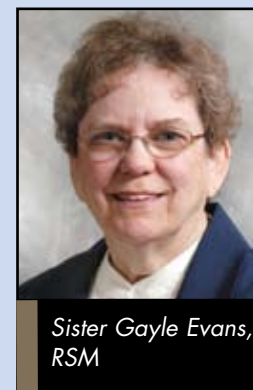
Sr. Gayle moved to the Sisters of Mercy regional community headquarters in St. Louis. For nine years she coordinated communications for the community and for two years served on the formation team, where she worked with young women preparing to become Sisters of Mercy.

Following a one-year sabbatical at Boston College in the mid-1980s, Sr. Gayle joined St. John's Mercy Health Care in organizational development, with a special focus on producing videos used for training. "It made me very proud as a Sister of Mercy to interview former patients and hear how far they had come in their recovery and how they felt they could not have done it without the care they had received," she said.

Her next assignment, in 1994, involved participating in a mission internship program at the health system level. A year later, when Unity Health System was formed, Sr. Gayle moved to St. Anthony's Medical Center to serve as director of mission. She assumed her current responsibilities in 2000.

Since her favorite hobby is working with computers, if she were not a Sister of Mercy, Sr. Gayle thinks she would "be right there in the technology world – probably working for Mercy Information Services Division, which is a scary thought since I know just enough to get into technological trouble, often."

TOP 10 "FUN FACTS"



Sister Gayle Evans, RSM

1. **Favorite sports team:** Green Bay Packers
2. **Favorite food:** A good steak
3. **Favorite holiday:** Thanksgiving
4. **Favorite book:** *A Woman of Substance* by Barbara Taylor Bradford
5. **Favorite color:** Blue
6. **Favorite travel spot:** Grand Canyon
7. **Favorite flower:** Coral roses
8. **Personal motto:** "Love serves joyfully."
9. **Favorite season:** Autumn
10. **Talent I would like to have:** Playing the guitar

But she is happy with her choice. "I bring a spirit of joy because I love what I do. You don't always accomplish what you set out to do, but in the end I'd like to be known as someone who cared about people and did my best," she added. •

The Mercy Difference continued

we are engaging our physician leaders in understanding and internalizing the Mercy Difference so that they can teach and lead other physicians and clinicians through word and example," Sullivan said.

Supporting the Mercy Difference

A three-year plan has been created that outlines specific initiatives and goals to help guide the initial areas of focus related to the Mercy Difference. Four key areas are:

1. Technological innovation – Providing Mercy caregivers with the tools "to get it right the first time and every time." Recent examples include the Mercy SafeWatch electronic ICU program, the Epic electronic health record system, Smart Pumps to better monitor the administration of intravenous fluids and bed alarms to prevent falls. This is an area that will expand as innovative healthcare technology continues to emerge.

2. Industry-leading performance

– Improving clinical performance and eliminating errors and injuries. This includes reinventing how physicians and co-workers deliver care and work as teams through:

- **Unit-level Multidisciplinary Teams** – Holding teams accountable for improving patient outcomes in particular areas, such as emergency departments, operating rooms and ICUs.
- **Patient Safety Best Practices** – Rigorously implementing evidence-based practices to prevent ventilator-associated pneumonia, central line blood stream infections, catheter-associated urinary tract infections and surgical site infections.
- **Red Rules** – Empowering co-workers and physicians to speak up and stop procedures when rules are not being followed or if they see something that might harm a patient.
- **No Bill/No Collection Policy for Preventable Adverse Outcomes** – Not seeking payment

for services associated with preventable adverse outcomes.

3. Telling our story – Improving how we promote Mercy's services and showcase our distinctive performance, with the goal of strengthening customer loyalty and generating increased revenues. Internally, this includes ensuring that Mercy co-workers and physicians understand and embrace their role in the Mercy ministry. Externally, the focus will be on enhancing communications and marketing efforts to highlight what the Mercy Difference means to patients and the community.

4. New strategic initiatives – Reshaping care delivery models to create lifelong relationships with patients. This includes greater physician integration and having more doctors in leadership roles, as well as listening to our patients, improving access to care and making the delivery of services seamless across physician offices, emergency

departments and hospitals.

As part of this plan, leaders in each Strategic Service Unit have been asked to reflect on what the Mercy Difference means to their organization and to them personally, communicate this message to their co-workers and reinforce the need to continually elevate performance.

Even in the face of increasing competition and a challenging economy, Sullivan is confident that co-workers and physicians are well-suited to make the Mercy Difference a reality. "Like never before, we are 'one Mercy' with a history of implementing innovation and driving change," he said. "We have been handed a strong and vibrant ministry from those before us and we are now obligated to enrich and deepen that ministry as we eventually hand it on to those who follow in our footsteps." •