

Successful collaborative project serves as model for GNYHA's emerging infection prevention efforts



Effort dramatically reduces central line associated bloodstream infections in intensive care units at participating member hospitals

When Greater New York Hospital Association (GNYHA) embarked on plans to raise awareness about hospital infection rates in late 2004, it succeeded in much more than changing the hearts and minds of lawmakers and clinicians. Its efforts not only led to more effective patient safety legislation, but also to improved patient care and swift, dramatic reductions in central line associated bloodstream (CLABS) infection rates in the intensive care units of nearly 50 participating GNYHA hospitals.

Further, in less than two years, thanks to implementation of proven, evidence-based infection control practices and innovative supply solutions coordinated by GNYHA and Premier, the CLABS collaborative now serves as a model for a host of new infection prevention programs designed to achieve sustainable quality improvement and save lives. CLABS infections are a serious, growing problem in U.S. hospitals, claiming the lives of about 20 percent of patients with central lines – as many as 50,000 patients a year. A single CLABS infection in an ICU can prolong hospitalization by as long as seven days and lead to additional costs of as much as \$70,000.

In October 2004, GNYHA began exploring ways to raise members' awareness of healthcare associated infection with a steering committee of association and hospital clinicians.

“At the time, we recognized that infection prevention was a very important area to focus on and started exploring projects that would best drive not only improvements in one type of infection, but multiple infections through changing systems and redesigning programs,” said Terri Straub, RN, MBA, vice president, quality and patient safety.

The following March, the steering committee approached GNYHA's board with a proposal to pursue legislation requiring public disclosure of infections among New York hospitals; such disclosure efforts were becoming increasingly popular among hospitals to increase transparency on patient safety and quality with consumers. Concurrently, the committee began laying groundwork for a CLABS collaborative with members.

With the board's endorsement, GNYHA worked with consumer groups and lawmakers. In just two months, New York became the sixth state to adopt a disclosure law requiring hospitals to track and report surgical site, central line and ventilator-related infections.

“The stars were really aligned on that particular issue and everything came together rather quickly and effectively,” Straub said. The goals were simple: Eliminate CLABS in ICUs and create a quality improvement model for optimizing patient care.

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In the collaborative's formative stages, New York's United Hospital Fund offered to provide much needed technical resources and seed money. In April 2005, GNYHA got invited members to participate. A month later, 38 hospitals had signed on and more than 250 clinicians and administrators attended the New York City kickoff. (In August 2006, a new CLABS group began, bringing participants to 47.)

EVIDENCE-BASED BUNDLING

At the heart of the collaborative is a compelling yet simple assumption: Make consistent use of five proven, evidence-based best practices that individually improve patient care and, combined, result in substantially greater improvement. The five components IHI calls a “CARE” bundle are:

1. Proper hand hygiene.
2. Maximal barrier precautions upon insertion.
3. Use of chlorhexidine as skin antiseptis.
4. Optimal catheter site selection.
5. Daily review of line necessity with prompt removal of unnecessary lines.

“We targeted central line associated bloodstream infections to launch a broader infection prevention initiatives because it seemed quite compelling to tell someone if you followed five practices together and had needed supplies handy, ICU patients' infection rates would go down,” Straub said.

“We also knew that ICUs provide care for the most vulnerable patients and consume the largest chunk of hospital resources (30 percent). We wanted a project that would achieve dramatic results quickly.”

The CLABS project's success also hinged on a multi-disciplinary approach. Each collaborator was expected to appoint an interdisciplinary team of representatives from such areas as nursing, materials management, surgery and anesthesiology – led by the hospital's chief medical officer or chief of ICU. All collaborators committed to rapid-improvement change concepts and to:

- ▶ Complete the Agency for Healthcare Research and Quality patient safety culture survey at the project's beginning;
- ▶ Collect and report data bi-weekly;
- ▶ Participate in two to three on-site meetings and bi-weekly teleconference calls; and
- ▶ Track and share best practices and lessons learned.

GNYHA and the United Hospital Fund provided expertise (one contribution, the “Expert on Call,” is a clinician who provides assistance and advice), ongoing technical and educational assistance, peer support, site visits, and data and best practices sharing. Most notable was “JENY” (Joint Effort New York), an online resource for sharing tools and ideas. The Web site (<http://jeny.ipro.org/clabs>) is

a partnership with IPRO, the state quality improvement organization, which manages the site. It features streaming educational conference video, recorded conference calls, data collection tools, best practices and interactive discussion threads.

STANDARDIZING SUPPLIES

GNYHA Services, developed the supply effort overseen by Tim Glennon, RN, MSN, MBA, vice president, clinical resource management. Working with clinicians, infection control experts and Medical Action Industries, a Premier contracted supplier, Glennon's team devised four barrier, insertion, maintenance and helper kits, each with special configurations designed to address all possible scenarios involved in inserting and maintaining central lines.

Glennon also educated purchasing and materials staffs, using comprehensive clinical field guides to help in transition. The guides included contract summary information, product overviews and suggested implementation action plans. “These guides were designed to help the non-clinical supply chain executive have intelligent and informed conversations with the clinicians about important product and supply chain issues,” he said. The guides outlined issues from a clinical standpoint while pointing non-clinical staff in a non-biased way toward suppliers in the



Premier and GNYHA portfolios whose products were a good fit.

Basic kits included a cap, mask, gown, sterile gloves, extra large fenestrated drape, alcohol swab, chloraprep swab prep (10 ml), tincture of benzoin, a large transparent dressing, tape or other catheter securing device and a BioPatch®, a small chlorohexadine-impregnated disc with that goes around the catheter at the insertion site.

Barrier kits were developed in six configurations, three with and three without a BioPatch® three choices of Tegaderm™; and two choices of ChloraPrep®. Maintenance kits also come in six configurations, three with and three without a BioPatch, and three with different choices of Tegaderm.

“The large sterile drape was a critical part of the kits,” said Straub. “In the past, hospitals typically used a very small drape and placed all the equipment and supplies for the procedure on the patient’s bed. This was not the optimal way to maintain sterility.”

Flexibility is key to the success of the kits. “Some hospitals customized the kits with other antimicrobial patches or impregnated central lines with special silver-coated antimicrobial coatings,” Straub said.

“Some wanted to use the bio-patch at the time of first catheter insertion, while others preferred using the patch only if the line was going to be in longer than four days, which was supported by the literature,” Glennon added.

EARLY SUCCESSES

After only a few months, collaborators’ enthusiasm grew. Glennon witnessed it firsthand during his weekend psych nursing stint at a local Staten Island hospital. Reviewing a nurses’ log book, he read notations about ICU nurses on the night shift who were asking how to volunteer for the CLABS initiative “because they wanted their results reported as well. At the rank and file level, down in the trenches, on a hospital-by-hospital basis, the work on this project had generated a lot of resonance. I was very impressed.”

Enthusiasm translated into dramatic results. Overall, infection rates dropped more than 70 percent in less than two years to 1.62 per 1,000 ICU inpatient days from initial rates of slightly more than 5 per 1,000 ICU inpatient days. (Nationwide, CLABS infection rates average about 5.3 per 1,000 ICU patient days.) Moreover, the majority of collaborators *eliminated* CLABS infections altogether, “and for sustainable periods of time – I’m talking nine months to a year in some ICUs. It’s been a dramatic success,” Straub said.

For many, the CLABS project led to sweeping changes in safety mindset. The project created a dramatic culture change at Mount Sinai Medical Center in Manhattan, where ICU nurses were empowered to stop a central line insertion procedure if compliance dropped under 100 percent.

Successes at other hospitals were no less dramatic. Many posted successes on public Web sites. At New York Health and Hospitals Corp., 13 ICUs went four consecutive months or more without a single central line infection in 2006. At North Shore-Long Island Jewish Health System, CLABS infection rates dropped from 3.15 per 1,000 in 2005 to 1.68 per 1,000 through June 2007.

Straub and Glennon were equally impressed with the momentum the effort created among participants.

“What makes this collaborative different from other collaboratives is its sustainability,” Straub said. “And it shows no signs of slowing down. Many collaborators now are actually demanding transparency among themselves and their peers. They are committed to self-reporting and feel quite passionate about the rights of consumers to know.”

“ The larger message here for all of us is that by working with the business side of GNYHA and Premier, we’ve been able to ensure our members have the right supplies at the right time for the right patient, and that is critical to quality and patient safety.”

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The CLABS initiative has been so successful it is serving as a model for emerging infection control prevention programs now underway at GNYHA, including collaboratives addressing rapid response teams and *C. difficile*. “Just as we did in the CLABS initiative, we hope to partner with Premier suppliers to create bundled custom kits that support whatever standard of care the group decides upon,” Glennon said.

“The larger message here for all of us is that by working with the business side of GNYHA and Premier, we’ve been able to ensure our members have the right supplies at the right time for the right patient, and that is critical to quality and patient safety,” said Straub. GNYHA will continue working with the Premier Safety Institute to help promote best practices and methodologies for preventing central line infections and sepsis.

“What Terri’s clinicians are doing is what makes the business side of things have a purpose,” said Glennon. “All of that activity now becomes my rallying cry to hospitals to use the Premier programs more because then we’ll have more funding to further these and other important quality and safety efforts.”



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