HEALTH CARE NEWS In-Depth
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Saving Lives: Eliminating Infections

Improving quality and patient safety is at the forefront of every health care leader's agenda. The challenge is to implement strategies, processes, and protocols that can be sustained so that care is improved over the long run. GNYHA, in partnership with the United Hospital Fund (UHF), has risen to this challenge and identified the reduction of central line–associated bloodstream infections (CLABs) as a model project to help achieve sustainable quality improvement and thus save thousands of lives. The goal of the project—known as the CLABs Collaborative—is twofold: to eliminate CLABs in intensive care units (ICUs) and to create a quality improvement model for optimizing patient care. Early indications from 60% of the participating hospitals show remarkable results—many have eliminated CLABs in their ICUs for several months in a row—thus reaching a first step toward meeting one of the project's main goals.

Infection control has emerged as a top priority of hospital leadership, as evidenced by the overwhelming response and commitment of hospitals participating in the GNYHA/UHF CLABs Collaborative. GNYHA and UHF are working with 38 hospitals in the Greater New York region to help them eliminate CLABs acquired in the ICU setting.

CLABs are infections that are often caused by a failure to implement all sterile barrier precautions in patients who are given central venous catheters. According to the Centers for Disease Control and Prevention (CDC), 48% of ICU patients have central-line venous catheters and, thus, are at risk for developing CLABs. There is also significant evidence that most hospital-acquired infections can be prevented, which can save lives, eliminate complications, and reduce health care costs. Nationally, according to the CDC, services delivered in ICUs account for 30% of acute care resources and cost approximately $180 billion annually. The CDC also estimates that hospital-acquired infections attributable to CLABs can cost up to $70,000 in additional costs per patient.

Background: The CLABs Collaborative was established under the direction of GNYHA's Quality Steering Committee and Infection Control Workgroup, with UHF providing funding to launch the Collaborative in February 2005. In March 2005, all GNYHA hospital members were invited to complete a comprehensive application to participate in the CLABs Collaborative, which required CEO support for participation. Hospitals were asked 1) to identify staff members for a CLABs Collaborative team; 2) to supply information on hospital ICU demographics and current central-line insertion protocols; and 3) to identify key contacts for ongoing communication. Team members had to include someone in a hospital leadership position, a chief medical officer, and professionals within the nursing, materials management, housekeeping, quality, emergency, and infection control departments—a multidisciplinary approach supported by research showing that team members who can help drive improvement are not limited to infection control staff. Hospitals that identified multidisciplinary teams and successfully completed the application were invited to join the Collaborative.

Getting Started: GNYHA and UHF were guided in developing the CLABs Collaborative by a Project Advisory Committee (PAC) consisting of local experts in infectious disease medicine, surgical critical care, materials management, quality management, and nursing. The PAC members continue to provide ongoing expertise to all team members. In addition, GNYHA and UHF committed to 1) hosting three in-person learning sessions to provide team members with the needed tools to implement CLABs-reduction strategies in their hospitals, 2) holding biweekly educational conference calls, 3) offering an online forum for sharing best practices and overcoming barriers to success, 4) updating hospital leadership regularly on the progress of the Collaborative's activities, and 5) ongoing electronic communication to all CLABs team members.

Learning Sessions: The first learning session was held on May 6, 2005. Richard Shannon, M.D., Chairman, Department of Medicine,

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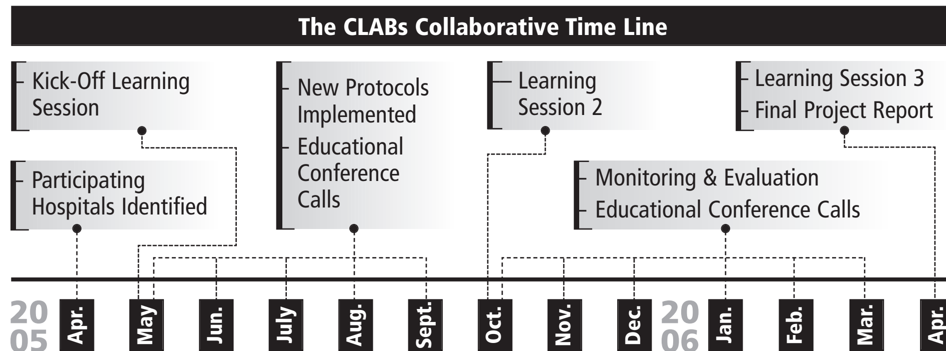
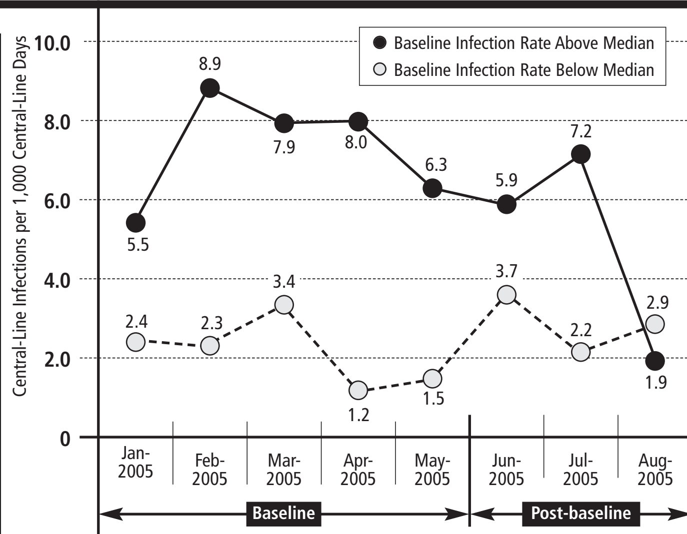
The CLABs Collaborative Time Line



Allegheny General Hospital, the keynote speaker and a national expert on reducing CLABs, reviewed the key interventions for eliminating CLABs, which require teamwork, vigilance, and system redesign. Dr. Shannon provided background and guidelines on how to insert a central line, materials that should be available at the time of a central-line insertion, types of central lines, central-line selection, maintenance of a central line, and identification of central-line infections. Dr. Shannon participates in the ongoing educational calls and is available to answer questions as they arise.

HOSPITALS WERE divided into two groups using a median split of their baseline infection rates. The graph at right shows, for both groups, the central-line infection rate for a five-month baseline period (January to May) and for three post-baseline months (June to August). Hospitals with baseline infection rates above the median show an improvement in their monthly infection rates while the monthly infection rates of those hospitals that started below the median have tended to remain stable.



The second learning session, which will address team-building using the Toyota model for quality, is scheduled for Oct. 19, 2005, and will feature Paul O'Neill, former U.S. Treasury Secretary, President of Alcoa, and currently Non-Executive Chairman, Value Capture, LLC and Value Capture Policy Institute.

Team Structure, Protocols, Communication: A team structure is critical if a new CLABs-reduction protocol is to succeed. A challenge that all hospitals met when completing the original application was selecting the best team members and recognizing the essential value of including non-clinical staff.

Hospital teams also had to reach a consensus on the materials that were needed to ensure that bacteria could not be introduced into the patient's bloodstream during a CLABs insertion. It was ultimately agreed that a central-line insertion "bundle," or custom packing of materials, was the answer. A bundle includes hand-hygiene products, a large sterile drape to cover the entire patient, mask, cap, gown, gloves, chlorhexidine, and sterile dressing supplies. Hospitals that have succeeded in reducing CLABs found it most useful to provide all of the CLABs supplies in one package or cart to make sure that all the proper supplies are available at the patient's bedside when needed.

The most critical task undertaken initially by GNYHA and UHF was to develop a system for ensuring ongoing communication with all team members. IPRO, New York's quality improvement organization, thus became a partner in the project and committed resources to develop online support through its Joint Effort New York (JENY) Web site. The site serves as a resource for communication with the team and is the portal to archive educational programs, data, and program templates. GNYHA, meanwhile, developed a comprehensive e-mail list of participating hospital staff.

Achievements to Date: The infection rates for hospitals whose rates had been above the baseline median decreased from 5.5 to 1.9 infections per 1,000 central-line days (see figure). GNYHA, UHF, and members of the CLABs Collaborative have identified the following critical steps to sustain those gains.

Step 1. Continue to engage senior medical leadership and clinical staff.

- *Implementation Tip:* Ask CEOs to designate a senior medical leader (for example, the Chief Medical Officer) to check in periodically with teams to identify whether their efforts are succeeding or they are facing obstacles. Consider implementing executive walk-rounds.

Step 2. Ensure that resources and systems to support the team's efforts are available to sustain the project's successes and momentum.

- *Implementation Tip:* Ask CEOs or senior medical leaders to participate in a monthly team update to identify opportunities to further support the project.

Step 3. Motivate staff to change practices that are not working and sustain the success of infection-reduction improvements.

- *Implementation Tip:* Encourage CEOs and senior medical leaders to support needed organizational and operational changes.

Step 4. Develop a strategy to disseminate new protocols and the central-line bundle.

- *Implementation Tip:* Ask CEOs and senior medical leaders to provide reports on the CLABs Collaborative at department-head meetings, utilize the hospital's intranet to publicize project progress and achievements, and offer Collaborative tools to other departments as a resource. ■

CLABs COLLABORATIVE MILESTONES

Communication Strategies

- *Bi-weekly Conference Calls*—For sharing information, materials, and tools specific to reducing CLABs. CME and CEU credits are provided.
- *Learning Sessions*—In-person Learning Sessions for all team members.
- *JENY Web Site*—Located at **http://jeny.ipro.org/clabs**; can also be accessed via **www.gnyha.org**.
- *Bi-weekly CLABs E-mail Updates*—*CLABs Update* newsletter is e-mailed to Collaborative teams.

Standardizing Data Collection Tools and Definitions

- *Standardized Data Collection Tools*—Teams developed and use standardized data collection tools.
- *Standardized Data Definitions*—The teams now use one set of standardized definitions.

Tracking Success

- *CLABs Team Reports*—Participating hospitals share monthly updates; aggregate results are reported.
- *Site Visits*—Site visits planned to identify the Collaborative's progress and areas in need of support.