

Background

Hand hygiene is one of the most important ways to prevent the spread of infection. Healthcare providers should practice hand hygiene at key points in time to disrupt the transmission of microorganisms to patients. Most health care workers (HCW's) are aware of the rationale for hand hygiene performance, yet observations indicate that caregiver adherence to hand hygiene is low.

Introduction

In 2004, The Joint Commission added a National Patient Safety Goal requiring that accredited health care organizations comply with hand hygiene guidelines. Current hand hygiene compliance methods, such as periodic direct observation surveillance, self reporting, and aggregate volume measurements of products, are often inaccurate. Healthcare workers often overestimate the frequency and quality of their hand washing. A fair and consistent measurement of caregiver adherence to hand hygiene is necessary in order to provide accurate performance feedback and to improve caregiver compliance.

Issue

Do automated hand hygiene monitoring technologies increase individual hand hygiene compliance?



Purpose

SICU partnered with UAB Infection Control and the AMC 21 Innovation Board through a grant to fund a quality improvement project aimed at patient safety through infection prevention. The project centered around utilizing technology to provide 24 hour continuous hand hygiene compliance monitoring and hand hygiene improvement through performance feedback.

Project

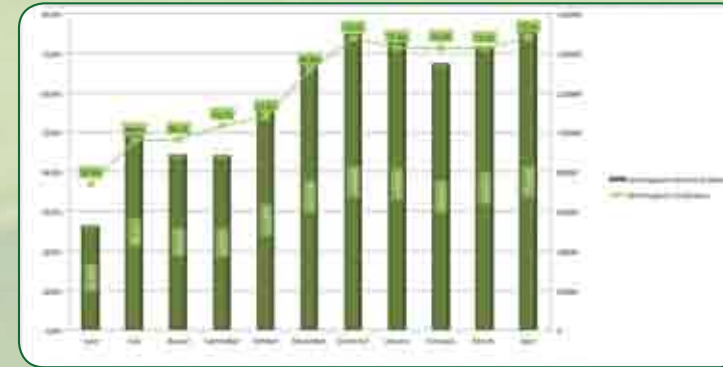
The Proventix nGage system utilizes a wireless RFID network to accurately assess HCW's movement within the patient care environment and correlate it with individual caregiver hand hygiene activity. HCW's wear lightweight active RFID badges along with their standard hospital identification. These badges communicate data, are wireless with a network of Communication Units (CU's) that are connected to each hand-hygiene solution dispenser within the area to be monitored. The system senses caregiver entry into patient rooms and other clinical care areas. Through a series of time and proximity based clinical business rules the system determines if the patient interaction is significant to require hand hygiene. When the caregiver performs hand cleansing, the CU records the hand hygiene solution dispense and assigns the hand cleansing to the appropriate individual. These transactions are specifically linked with each caregiver and define the wearer's location, amount of time spent at that location, and whether they followed hand-hygiene protocol. HCW's signed a pledge to hand hygiene compliance, an emphasis was made to promote hand hygiene prior to patient room entry and at exit.

UAB Hospital and Proventix teams cooperated to install CU's in each of the 20 SICU patient rooms and at dispensers throughout the unit's hallways and common areas. In total, UAB monitors 23 soap dispensers and 40 alcohol based hand rub solution (sanitizer) dispensers. 114 caregivers participate in monitoring. This team includes physicians, nurses, nursing assistants, clinical educators, environmental staff, respiratory therapists, pharmacists and unit support staff/clerk.

Results

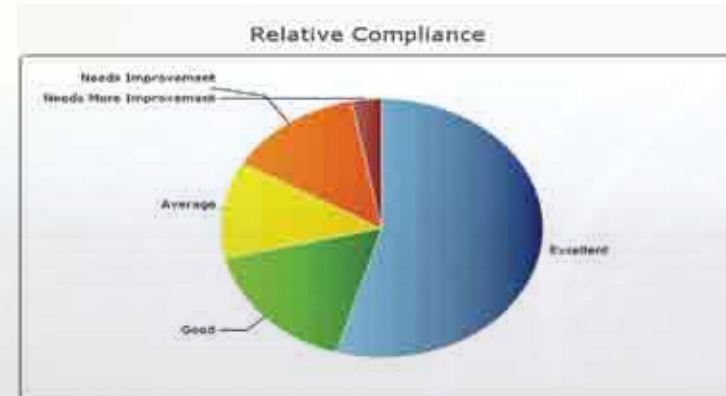
The SICU experienced increases in soap and alcohol based hand rub solution dispenses after the nGage installation. There was a 97542 quantity increase in hand hygiene solution dispenses when comparing the first month of service with the April month of service. Reports show a 36.9% improvement in hand hygiene compliance as of April 2013. During this same time period a number employees exceeded individual compliance rates of 90%, with the highest compliers exceeding 95%.

Results



Lessons Learned

It is good to measure hand hygiene compliance using a standard measure methodology to eliminate bias and provide accurate individual measurements of hand hygiene compliance. These capabilities paired with clear goals and expectation setting contribute to improvements in care and a safer environment of care. Our results indicate that implementation of the nGage electronic hand hygiene monitoring system was an important and effective first step toward increasing patient safety and improving clinical outcomes. The Hawthorne Effect of electronic monitoring is beneficial to change hand hygiene behaviors. All of the staff know that the monitoring is 24 hours a day and each person is monitored in the same way. When someone is watching and holding accountability, people tend to do right. We experienced an increase in individual hand hygiene compliance in the SICU using this technology to monitor compliance. The use of comparative results as well as weekly all staff reports were motivational for all to do right.



Special thanks to Marianne Schmitz IP for submitting the request for our collaboration with Alabama Power and the UAB AMC 21 Innovation Board. Heather Tarquino; SICU Nurse Manager, Peggy Abbott; SICU Advance Nursing Coordinator, Dr. Sam Windham & Dr. Bill O'Byrne; SICU Critical Care Co-Directors. Martha Long IP & Amanda Beverly IP for their hospital wide contributions to hand hygiene surveillance monitoring. The team of nurses and staff in the SICU for their willingness to drive change through a variety of innovative approaches to improve our patient outcomes. Velinda Block, UAB CNO for her support of nursing innovation and engagement through shared governance and empowering the point of care providers to OWN IT.