

# Automated Hand Hygiene Monitoring and Nosocomial Infection Marker Reduction

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## Issue

In 2011, Medical Center Enterprise used a document derived from the iScrub application to monitor hand hygiene. Even with multiple personnel collecting data, they were unable to achieve large enough denominator data. The results offered little insight beyond direct observation and it was impossible to generalize the findings to the entire staff and/or all hand cleansing opportunities. The findings also could have been affected by observer bias and by changes in caregiver behavior based on the knowledge that they were being observed. With this in mind, we began to seek other opportunities and technologies to help with these challenges.

## Project



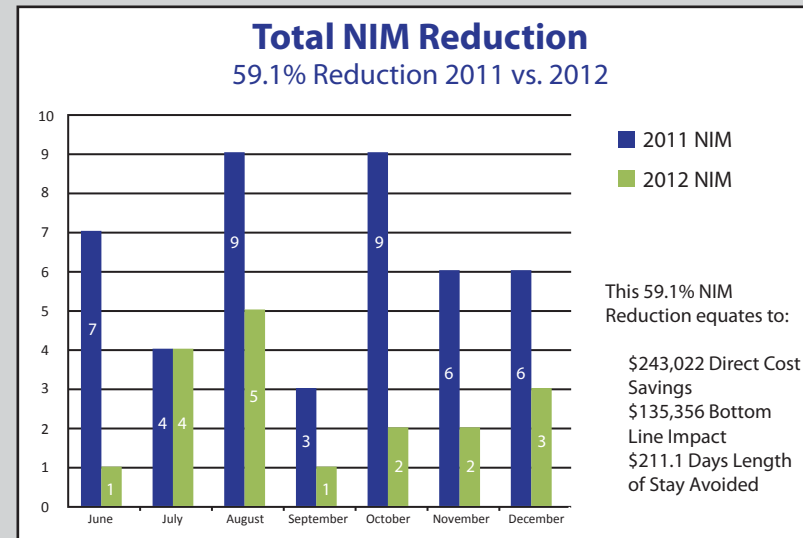
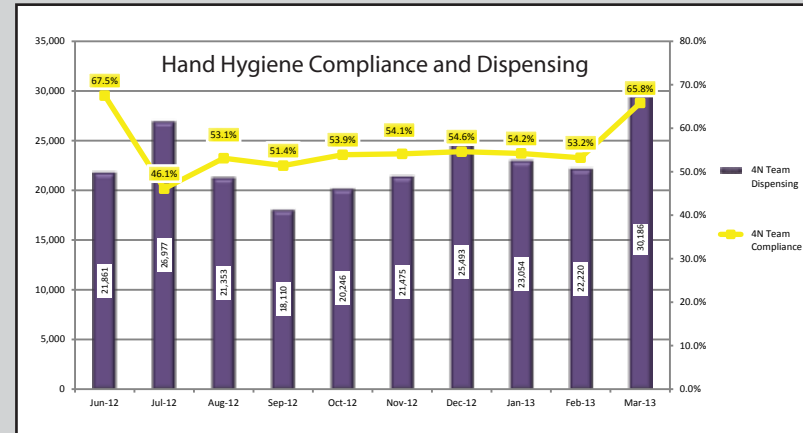
The hospital installed an automated hand hygiene monitoring system in the 29-bed 4 North medical-surgical unit. We monitored 29 soap dispensers and 31 alcohol-based hand rub (sanitizer) dispensers in patient rooms using communication units and radio-frequency identification (RFID) tags from Proventix Systems. We also monitored 6 hallway sanitizer dispensers and 1 sanitizer dispenser in a storage room. In June 2012, we distributed tags and educated five



staff members from three departments on 4 North to validate system performance. In July 2012, we badged and educated 34 more employees on the monitored unit. Hand-hygiene solution dispensing, hand-hygiene compliance and healthcare-associated infection (HAI) rates were measured from June 2012 through December 2012. In October 2012, newly hired employees were badged, and all badged staff was re-educated. In January 2013, we began

weekly audits which include: visualizing badges, checking individual compliance, monitoring battery life, direct coaching, and providing recognition among peers.

## Results



In June 2012, hand-hygiene compliance among the initial five staff members was 67%. In July 2012, compliance dropped to 46% after giving badges to the rest of the staff (34). There was a 26.3% increase (20,188-25,502) in alcohol-based hand rub (sanitizer) dispenses and a 23.4% increase in total hand hygiene solution dispenses (21,861-26,977) when compared the first and second months of using the system. With continued education and feedback, hand-hygiene compliance rose to 65.8% in March 2013. Hand hygiene compliance for all employees increased 42.7% (46.1%-65.8%) when comparing the first and last months of compliance monitoring (July 2012–March 2013). For June-December, we had a 59.1% reduction in Nosocomial Infection Marker® (NIM-Carefusion) compared to the same time period from 2011. This reduction equals an estimated \$243,022 direct cost savings, an estimated bottom line impact of \$135,356 and 211.1 days of length of stay avoided.

## Lesson Learned

Constant feedback and holding staff members accountable, while recognizing those with excellent performance and frequent patient room visits, was vital to compliance with hand hygiene and improved patient outcomes.

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Nothing to disclose.

