

Elaine Larson, RN, BSN, MA, PhD;¹ Bevin Cohen, BA, MPH;¹ Meghan Murray, BA, MPH;¹ Paul Alper, BA;² Lisa Saiman, BA, MPH, MD;³ Laurie Conway, BSN, MSN¹
(1) School of Nursing, Columbia University Medical Center, New York, NY, USA (2) DebMed USA, LLC, Charlotte, NC, USA (3) Department of Pediatrics, Columbia University Medical Center, New York, NY, USA

PURPOSE

Hand hygiene (HH) is one of the primary strategies to prevent infection. Many facilities are now monitoring staff HH behavior using direct observation. Observation is costly and subject to multiple biases.

Electronic monitoring of HH has been proposed as a feasible and potentially more accurate solution for tracking trends in HH practices and for providing staff with performance feedback.

The purpose of this presentation is to describe challenges and strategies encountered during implementation of an electronic HH monitoring system.

METHODS

A group-level electronic HH monitoring system was installed at four sites in the northeastern United States in 2012:

- Three pediatric long-term care facilities (54, 97, and 137 beds)

- One acute care community hospital (140 beds)

The system counted HH events with soap and sanitizer occurring in patient care areas (Figure 1) and generated reports to assess the number of HH events, changes in HH frequency over time, and differences in HH frequency by unit or room (Figure 2).

Researchers worked with administrative staff in each facility to develop implementation plans, determine how feedback would be provided to patient care staff, and track changes in HH rates.

Reports were sent to individuals selected by each facility. Report formats could also be changed by these individuals at each facility.

RESULTS

Figure 1. Group hand hygiene monitoring system installed at facilities

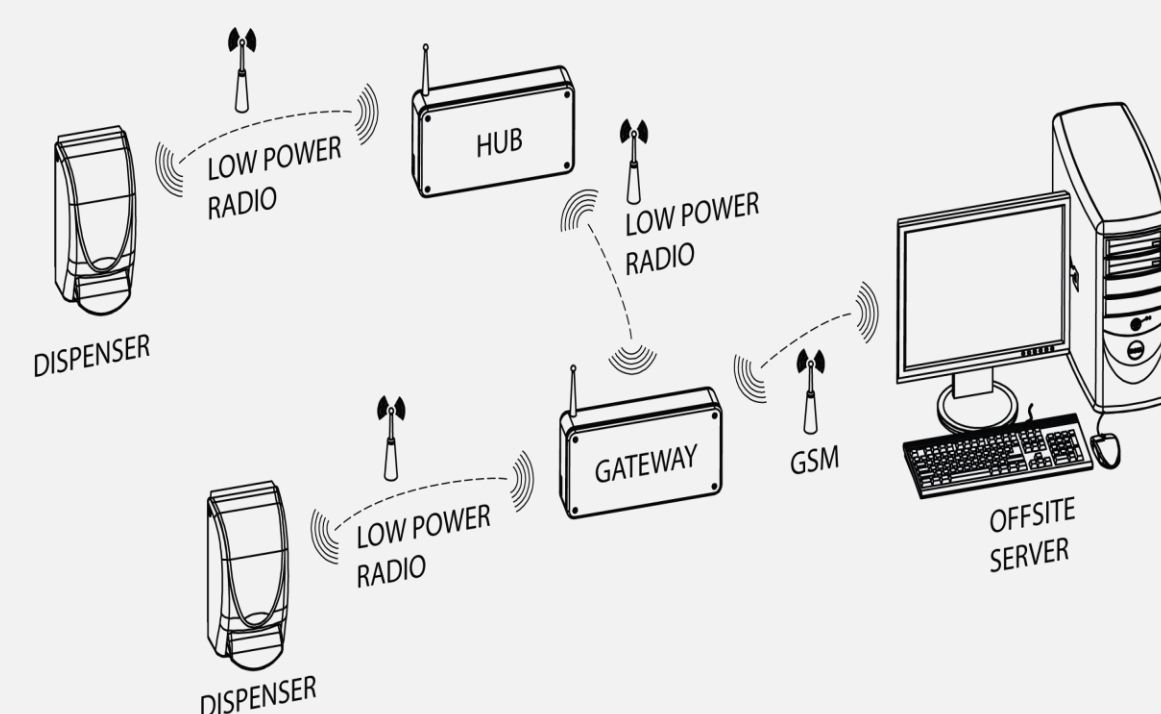
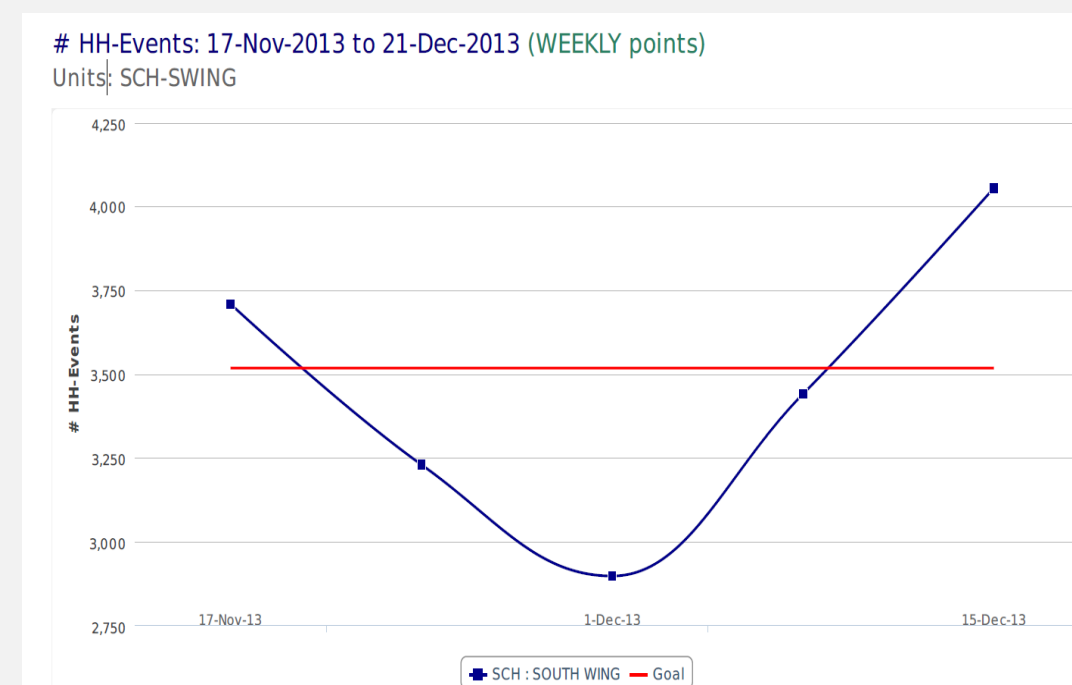


Figure 2. Sample hand hygiene feedback report generated by group monitoring system



Hand hygiene frequency at 3 pediatric long term care facilities before and after access to performance feedback reports

	Mar 2013 - May 2013 (Pre)*	Aug 2013 – Oct 2013 (Post)*	Percent Change
Site 1	9,590	8,764	- 8.6%
Site 2	3,720	3,386	-9.0%
Site 3	8,420	8,760	+4.0%
Total	21,730	20,910	-3.8%

*Total number of hand hygiene events captured by the electronic monitoring system

RESULTS

Challenges during implementation of the system included addressing staff/administrator concerns about the validity and use of data, ensuring that feedback on HH reached patient care staff, and dealing with wide variations in implementation across sites.

In the community hospital, frequency of HH for medical-surgical units, coronary care unit, and emergency department was slightly higher after providing staff feedback (mean difference=4.9% compliance, SD +/-4.3, p=0.02).

In the pediatric long-term care facilities, only one site increased HH frequency in the post-feedback phase (Table). Site 1 disseminated HH data only to unit nurse managers. Sites 2 and 3 posted data in the main entrances of their facilities. Site 3 also posted unit-specific HH data with annotated charts to describe outbreaks and other events that might impact HH.

Administrators were inconsistent in disseminating the information; several months after installation, many staff members were still unaware of the monitoring strategy and had received no feedback.

CONCLUSIONS

Electronic monitoring is an objective and reliable method to track HH, but compliance reports were not easily interpreted or widely disseminated to staff. As a result, there were limited attempts to utilize the data by the sites.

When implementing electronic monitoring, initial and follow-up education should focus on interpreting HH compliance reports and understanding changes over time, relating HH frequency to infection outcomes, and goal setting for HH improvement.