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The development of hand hygiene compliance imperatives in an emergency department

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Key Words:

Hand hygiene compliance monitoring emergency department infection control quality improvement

Background: Monitoring results showing poor hand hygiene compliance in a major, busy emergency department prompted a quality improvement initiative to improve hand hygiene compliance.

Purpose: To identify, remove, and reduce barriers to hand hygiene compliance in an emergency department.

Methods: A barrier identification tool was used to identify key barriers and opportunities associated with hand hygiene compliance. Hand hygiene imperatives were developed and agreed on with clinicians, and a framework for monitoring and improving hand hygiene compliance was developed.

Results: Barriers to compliance were ambiguity about when to clean hands, the pace and urgency of work in some areas of the department, which left little time for hand hygiene and environmental and operational issues. Sore hands were a problem for some staff.

Expectations of compliance were agreed on with staff, and changes were made to remove barriers. A monitoring tool was designed to monitor progress. Gradual improvement occurred in all areas, except in emergency situations, which require further improvement work.

Conclusions: The context of care and barriers to compliance should be reflected in hand hygiene expectations and monitoring. In the emergency department, the requirement to deliver urgent live-saving care can supersede conventional hand hygiene expectations.

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Hand hygiene is essential in preventing and controlling health care-associated infection,¹ and in many countries, it is audited as part of quality assurance based on World Health Organization (WHO) recommendations.^{2,3} Cleansing hands is important in emergency departments (EDs), where necessary treatment often includes high-risk, invasive procedures, leaving no time to assess patient susceptibility to infection or the likelihood of transmitting it. The consequences of suboptimal infection prevention through lack of hand hygiene in EDs are therefore significant.⁴ Despite knowledge of and positive attitudes toward infection control,⁵ staff in EDs demonstrate low hand hygiene compliance, compared with ward staff.^{6–10} Although intervention studies can result in high levels of compliance in this setting (90%),¹¹ such attempts usually do not lead to

sustained performance.^{7,12–16} Factors reported to influence hand hygiene and infection control compliance more generally in EDs include workplace culture, the high speed of actions required in emergencies, frequent interruptions,^{7,17} heavy workload, lack of time,^{18,19} prioritization of patients' needs over hand hygiene,⁹ the location of patients in non-clinical areas including corridors,¹¹ access to facilities and products,^{8,10,20} and overcrowding.^{17,21} Other potentially influential factors reported in health care settings more generally are lack of staff education and skills, and capacity.¹⁹ Behavioral influences, including the impact of role models, are also important.²²

Problem identified for quality improvement

We report on a quality improvement program for hand hygiene compliance in the ED of an acute national health service (NHS) hospital in the United Kingdom serving a local population of more than 250,000 people. The ED was built in 2005 and provides continuous 24-hour service. It comprises areas devoted to triage, ambulatory care, minor and major injuries, pediatric emergencies, resuscitation,

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and a clinical decision unit. Attendance increased from more than 112,500 in 2011–2012 to more than 140,000 in 2013–2014. Approximately 70 nursing staff members and more than 30 doctors and allied health professionals are employed there.

BACKGROUND

A comprehensive hand hygiene promotion, compliance monitoring, and reporting system was introduced throughout the hospital in 2008. It was adapted from an existing, validated tool²³ and incorporated the World Health Organization's "Five Moments of Hand Hygiene."²⁴ Auditing was undertaken by staff who had received special training in hand hygiene compliance monitoring. They were responsible for monitoring a random sample of clinicians for 1 hour each month in each clinical area. Hand hygiene compliance was reported as a percentage and was used to provide assurance of infection control practice. The system involved a process of peer review and validation of results, in which the same auditors, working in pairs, intermittently audited practitioners simultaneously.

The hand hygiene monitoring tool identified clinical areas with appropriate scope for improved compliance, including the ED.²⁵ The tool demonstrated that overall mean hand hygiene compliance in the organization increased from 78% in 2008 to more than 94% in 2012. However, it also showed that the ED remained a consistent outlier (Fig 1). Managers reported that staff had become demoralized by negative feedback and lack of clarity on how improvements could be made, given the particular challenges to hand hygiene in this setting. A senior member of the infection control team agreed to work with the ED staff and managers to develop a quality improvement program to improve hand hygiene compliance.

METHODS

We employed a barrier identification tool,²⁶ which has been used successfully to improve practice outcomes in other settings.^{27–29} The tool provides a systematic means of identifying, prioritizing, and removing barriers to compliance in 5 stages: (1) assemble the team; (2) identify barriers (a) observe the process, (b) ask about the process, and (c) walk the process; (3) summarize the barriers; (4) prioritize the barriers; (5) develop an action plan.

The barrier identification tool was selected because it allows for people to observe and document events in the clinical area in real time, with opportunities to question staff about reasons underlying practice, explore possible misconceptions and assumptions, and work collaboratively with clinicians to find solutions.

"Walking the process" over a 2-week period, and impromptu meetings with clinicians, identified challenges. Comments made by staff were recorded verbatim in writing and summarized into key themes. Three, 1-hour, ad hoc simultaneous audits in a 2-week period were undertaken by the infection control practitioner and auditors to assess the validity of the data collected and observe the methods used.

A new framework to monitor and improve hand hygiene compliance, tailored to meet the special requirements of the ED, was co-produced by the infection prevention practitioner, managers, and senior clinicians. Using the bespoke framework, hand hygiene facilities and barriers to performance were monitored separately from behavioral compliance (known as "must do's") and measured as opportunities for hand hygiene compliance. The framework was discussed and agreed on with frontline workers before implementation. Education and training in the use of the data collection tool and the results were led by the local education and practice improvement staff.

RESULTS

Identification of barriers

Observe the process

The comparison of simultaneous audits by 3 infection control practitioners and auditors in the ED revealed a high degree of consistency ($Kappa > 0.95$), suggesting that the observers' scores were a reliable indication of performance.

Ask about the process

Numerous potential barriers to compliance were identified by frontline staff. More than 10% reported redness or sore hands, as also reported by staff in other clinical areas where high levels of compliance were recorded.

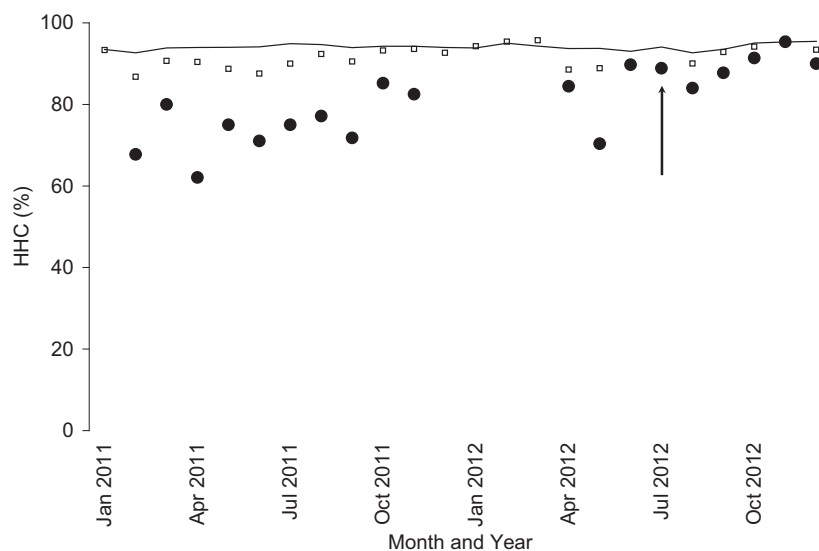


Fig 1. Hand hygiene compliance from routine surveillance: emergency department (filled circles) compared with the medical specialties board as a whole (empty squares) and all trust locations (line). The arrow indicates the month when the new reporting system started (July 2012); see text for more details. HHC, hand hygiene compliance.

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