Brief report

Pharmacist participation in infection prevention: An innovative approach to monitoring compliance with the Five Moments for Hand Hygiene in a large academic medical center

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Using pharmacy residents as covert observers, we evaluated compliance with hand hygiene and contact precautions among 101 unique health care workers on entrance, exit, and inside rooms of patients with known or suspected Clostridium difficile infection. Overall compliance rates with hand hygiene upon entering and exiting patient rooms were 63.4% and 69.3%, respectively. However, there was a lack of hand hygiene inside patient rooms for the observed opportunities.

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Clostridium difficile is an increasingly common pathogen in healthcare institutions that contributes to morbidity and mortality.1 Prevention of C difficile infection (CDI) is essential but challenging. Hand hygiene is a fundamental element of a successful CDI prevention program, and several studies have identified that improved compliance with hand hygiene soap and water best practices reduces CDI rates.2,3,4 These best practices are defined in the World Health Organization (WHO) hand hygiene guideline as the Five Moments for Hand Hygiene, including before and after patient contact, before aseptic tasks, and after body fluid exposure risk and contact with patient surroundings.2,4,5 Whereas monitoring for compliance with hand hygiene among healthcare workers (HCW) coupled with feedback is essential for a robust hand hygiene program, hand hygiene compliance monitoring as performed by trained observers can often only encompass observations of hand hygiene at entry into and exit from patient rooms. Thus, compliance monitoring with the Five Moments for Hand Hygiene may often not be performed. We undertook a study to monitor compliance with the WHO Five Moments for Hand Hygiene using pharmacy residents trained by infection preventionists and embedded in the care team. We hypothesized that the Five Moments for Hand Hygiene inside the rooms of patients in contact precautions are poorly followed; thus, we focused our observations on patients with known or suspected CDI.

METHODS

Study sites

The study was conducted at a 563-bed academic medical center. The study was considered a quality improvement project and granted exemption by the University of Wisconsin-Madison Health Sciences Institutional Review Board.

Study team

The multidisciplinary study team consisted of the following: principle investigator, infection prevention team, clinical pharmacy manager, and antimicrobial stewardship pharmacist. Including the primary investigator, 8 trained pharmacy resident observers were embedded as part of the interdisciplinary medical team for data collection.

Data collection instrument

We adapted the institutional hand hygiene observation form to document compliance with hand hygiene and contact precautions.
at room entry and exit in addition to opportunities for the Five Moments for Hand Hygiene inside patient rooms.

Data collection

Data were collected by 8 trained pharmacy resident observers using the adapted form. Observers participated within interdisciplinary patient care rounds on teams consisting of physicians, nurses, pharmacists, and other HCW and were present with the team upon entering, exiting, and inside patient rooms. Despite room entry, resident observers were not included in compliance results. Each HCW had 1 opportunity for hand hygiene, glove, and gown use upon entrance to and exit from rooms in patients with known or suspected CDI (If glove or gown use was omitted on entrance, HCW did not have opportunity on exit). Opportunities inside the room varied and were defined consistent with the WHO moments for hand hygiene. Patient care rounds occurred primarily in the morning, but some evening and overnight opportunities were documented.

RESULTS

One hundred one total observations were completed between October and December 2012 (Table 1). In total, 35.6% (n = 36) and 33.7% (n = 34) of observations were of nursing staff and medical residents, respectively, with the remaining 33.7% (n = 31) including other HCW. Overall compliance rates with hand hygiene upon entering and exiting patient rooms were 63.4% and 69.3%, respectively. Compliance rates with glove use upon entering and exiting patient rooms were 85.1% and 90.7%, respectively. Compliance rates with gown use upon entering and exiting patient rooms were 88.1% and 97.8%, respectively.

Hand hygiene inside patient rooms

Of the 101 unique observations, 80 HCW had at least 1 opportunity to perform hand hygiene inside patient rooms. We did not observe any instance of compliance with hand hygiene within the room. Opportunities for hand hygiene included central line examination, examination of patient, and contacting patient surroundings. HCW already wearing gloves did not remove the gloves to perform hand hygiene while inside the room.

DISCUSSION

Compliance with the WHO Five Moments for Hand Hygiene is essential for the prevention of CDI; the WHO hand hygiene strategy has been validated as sustainable and crucial to increase HCW knowledge and compliance toward hand hygiene. However, monitoring compliance with the WHO Five Moments for Hand Hygiene is difficult to achieve. We identified an innovative approach using pharmacy residents embedded in the care team to observe and record hand hygiene practices, not only at room entry and upon room exit but also while inside the patient room.

Our study has several important findings. One, using our pharmacy resident approach, we identified that, whereas hand hygiene at room entry and upon room exit was undertaken most of the time, a deficiency existed when inside the room of patients with known or suspected CDI. Although there are limitations to the feasibility of this approach, the WHO hand hygiene guideline recommends the removal of gloves and performance of hand hygiene between all opportunities, including inside patient rooms. This applies also to patients in contact isolation. Achieving and monitoring compliance with the Five Moments for Hand Hygiene by HCW for patients who are in contact precautions for CDI is challenging, and future studies should examine approaches to address this.

Our findings have implications for infection preventionists, all HCW, and patients. First, better hand hygiene practices inside patient rooms are necessary. Second, pharmacy residents may monitor compliance with these practices while imbedded as covert observers on patient care teams. Pharmacists have traditionally participated in antimicrobial stewardship initiatives as a means of reducing CDI but, to our knowledge, this is the first multidisciplinary infection control initiative to monitor compliance with hand hygiene to include pharmacists. Third, patients would benefit from improved HCW compliance with hand hygiene practices inside patient rooms.

We did not capture reasons for noncompliance in our study, but we hypothesize that, for HCW taking care of patients in contact isolation, repeatedly removing and putting on gloves to undertake hand hygiene is a significant time constraint and a systems issue. It may also be that, because of emphasis on hand hygiene at room entry and upon room exit, such as with “gel in, gel out” campaigns, attention to hand hygiene while inside a patient’s room has lapsed.

Limitations of this study include potential for reporting variability between observers. However, all the observers were trained in a similar manner by infection preventionists to minimize this possibility. Second, our sample size may only be a small number of hand hygiene observations. However, our findings are important and may lead to hand hygiene improvement initiatives that go beyond monitoring at room entry and exit to monitoring and providing feedback during patient care at institutions.

Our study demonstrates an innovative approach to monitoring compliance with the Five Moments for Hand Hygiene by HCW for patients who are in contact precautions for CDI. Despite the challenge of achieving and monitoring compliance, this study is an example of successful interdisciplinary infection control collaboration to monitor the complex behavior of hand hygiene.

References