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Improving Handwashing In Hospitals: A Patient Education And Empowerment Program

Editor's Note: Each year, about 5% of people admitted to U.S. hospitals (about 2 million people) acquire an infection there. These infections cause nearly 20,000 deaths each year, and cost an estimated \$4.5 billion to treat. Handwashing is the single most effective measure for preventing hospital-acquired infections. Despite widespread knowledge of the importance of handwashing, health care workers wash their hands far less often than is indicated. This Issue Brief describes a novel strategy to improve handwashing among hospital personnel, by involving the people with the most to gain—the patients themselves.

Handwashing compliance is low and resistant to change

More than 150 years ago, medical professionals demonstrated the importance of hand hygiene for controlling transmission of infection in hospitals. Today, handwashing is widely accepted as effective in preventing nosocomial infections (infections acquired in the hospital, usually at least 48 hours after admission). However, compliance with handwashing standards among hospital personnel is low, and has proven to be remarkably resistant to change.

- Overall, handwashing occurs in less than half of the instances in which it is indicated, and for a shorter time than recommended. In addition, hospital staff overestimate the frequency and quality of their handwashing, making self-reported practice an unreliable way to measure improvements in handwashing.
- Simple educational interventions aimed at hospital staff (such as lectures, practical demonstrations, or written material) have had only a short-term influence on handwashing behavior. Multifaceted approaches that combine education, reminders and continuous feedback to staff show more promise, but they can be prohibitively expensive to maintain and monitor in the long-term.
- Epidemiological studies suggest that one-third of nosocomial infections could be prevented by well-organized infection control programs.

Innovative program encourages patients to remind staff about handwashing

McGuckin and colleagues developed an intervention that uses patients as continuous prompters for health care workers. The “Partners in Your Care” program has several components, and can be used in conjunction with other strategies directed at health care professionals or hospital systems.

- Within 24 hours of admission, patients receive a visit from a health educator to discuss the importance of handwashing by staff in preventing nosocomial infections. Patients receive a brochure describing the who, why, how, when, and where of handwashing.

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- Patients are encouraged to become “Partners in Your Care” by asking all health care workers who come into contact with them, “Did you wash your hands?”
 - As a reminder to ask, or for patients who might be reluctant to ask, the program provides prompting aids. For example, patients receive a tiny furry creature holding a banner that reads, “Did you wash your hands?” to stick on their hospital gowns.

Study evaluated outcomes of program in four hospitals

The investigators evaluated this patient education model in four community hospitals in New Jersey. In a 12-week prospective, controlled study, they measured patient compliance with the program, and staff compliance with handwashing.

- The study was conducted in two medical-surgical floors for each hospital (with 80 beds per floor). A total of 441 patients participated in the study. Of these, 276 (63%) completed a telephone interview two weeks after discharge.
- The interviewers asked patients about their perceptions of the program, their knowledge of the importance of handwashing, whether they asked health care workers to wash their hands, and whether they felt comfortable doing so.
- Staff compliance with the program was measured by soap usage per bed-day. Soap dispensers were located in each patient’s room, utility rooms, and nurses’ stations. The number of handwashings was calculated by dividing soap usage by a standard amount for each handwashing.

Program leads to 34% increase in handwashing activity

Results of the study indicate that patients readily participate in the program, and that it significantly increases the amount of soap used, and by extension, the frequency of handwashing.

- More than 80% of the patients read the brochure on handwashing, and 95% recognized the importance of handwashing in preventing infections.
- 57% asked their health care workers whether they had washed their hands. Of these patients, 90% asked nurses, but only 32% asked physicians. When they did ask, 81% of the patients received a positive response (washed hands).
- Each site had an increase in soap usage during the 6-week intervention period, compared to its level in the control period 6 weeks earlier. Across all sites, soap usage increased by an average of 34%. This represents an increase in average handwashings per bed-day from five in the control period to seven in the intervention period.

Program costs are easily offset by savings from infections prevented

The investigators designed the “Partners in Your Care” program to be a low-cost, replicable, and sustainable model. They calculated the costs of the program, and projected the cost savings that a 300-bed hospital with 10,000 admissions annually might achieve by preventing nosocomial infections.

- They assumed a 5% rate of nosocomial infection (500 per year), 32% of which is preventable (160 per year). They further assumed that the program could prevent 10% of these infections (16 per year). If each infection costs \$5,000 to treat, preventing 10% could lead to savings of \$80,000 per year.
 - Program costs in the study, including educational materials, staff, and additional soap expenses, were about \$2.24 per patient admitted. In a hospital with 10,000 admissions annually, the program would cost \$22,400 per year to implement.
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- Using these figures, the investigators estimate that the program could save a 300-bed hospital \$57,600 per year.

Model is adapted and tested in the United Kingdom

Because of the importance of preventing nosocomial infections internationally, McGuckin and colleagues adapted and tested the program in the United Kingdom. They added an educational component for health care workers, and monitored the use of both soap and antiseptic alcohol gel.

- The program was implemented on one medical and one surgical ward in Oxford, UK. Of the 98 patients eligible for the study, 39 (40%) agreed to participate. Each patient received a visit from an infection control nurse within 24 hours of admission.
- One week before the program began, physicians received a letter from the hospital medical director, and other health care workers received a flyer announcing the program and encouraging their support.
- At baseline (before the intervention), soap usage per bed-day was 69% higher for the surgical ward than the medical ward. This represents three handwashings per bed-day for medical patients versus eight handwashings per bed-day for surgical patients. Alcohol gel was used on less than 1% of occasions.

In the UK, program leads to 50% increase in handwashing activity

As in the initial study, the “Partners in Your Care” program was well-received by patients and led to significant increases in handwashing activity. Results suggest that adding an educational component aimed at the health care worker could improve the program’s effectiveness.

- More than 60% of patients felt at ease when asking health care workers about handwashing. All patients asked nurses, but only 35% asked physicians.
- Soap and gel usage increased 37% from baseline to the control period, when the health care worker educational component was implemented.
- Soap and gel usage increased 10% from the control period through the intervention period, when the patient intervention was implemented. Overall, the program achieved a 50% increase in soap and gel use. However, use of alcohol gel as a handwashing agent did not increase during the study period, despite its ready availability.

POLICY IMPLICATIONS

This program provides a simple and effective intervention for improving hand hygiene among health care workers in hospitals. It empowers patients to take responsibility for their care, provides the hospital infection control staff with a continuing means for handwashing education, and allows for objective measurement of handwashing compliance. Although hospital infection rates were not measured in these studies, sustained improvements in hand hygiene are likely to have a significant impact on rates of nosocomial infections.

- The program can be replicated in many hospitals. The Joint Commission on Accreditation of Healthcare Organizations now cites the program as an example of actions hospitals can take to reduce the risks of nosocomial infection.
- The Centers for Disease Control and Prevention recently drafted updated guidelines for hand hygiene in health care settings and released them for public comment. The guidelines call for increased use of alcohol-based handrubs, combined with

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POLICY IMPLICATIONS

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multidisciplinary educational and motivational programs. The “Partners in Your Care” program can be easily adapted to promote waterless handrubs as well as conventional handwashing with soap and water.

- Further research is needed to explore why patients are reluctant to remind physicians to wash their hands, and to improve physician compliance with hand hygiene guidelines.
- Because of the importance of preventing infections in other health care settings, the investigators are now adapting and testing the model in long-term care and rehabilitation facilities.

This Issue Brief is based on the following articles: M. McGuckin, R. Waterman, J. Storr, I. Bowler, M. Ashby, K. Topley, and L. Porten. Evaluation of a patient-empowering hand hygiene programme in the UK. Journal of Hospital Infection, July 2001, vol. 48, pp. 222-227; M. McGuckin, R. Waterman, L. Porten, S. Bello, M. Caruso, B. Juzartis, E. Krug, S. Mayer, and S. Ostrawski. Patient education model for increasing handwashing compliance. American Journal of Infection Control, August 1999, vol. 27, pp. 309-314.

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