IRB Submission – ICCR course

Title: Hand Hygiene Compliance and the Role of Social Cues

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Lay Abstract

Hand decontamination, also known as hand hygiene, before and after every patient encounter is the cornerstone of reducing hospital-acquired infections. Unfortunately, hand hygiene compliance rates are lagging among many health care workers, despite the clear link between hand hygiene rates and the incidence of hospital-acquired infections. Hospital-acquired infections, aside from causing serious morbidity and mortality, also exact a severe financial cost to the health care system. Studies show that people are more likely to comply with suggestions in the presence of subtle social cues, such as images of eyes. The Allen Hospital Emergency Room has one of the lowest hand hygiene compliance rates. In this study, photographed images of eyes will be affixed above Purell dispensers in the emergency room. Hand hygiene compliance rates will be determined by the hand hygiene observer program at NewYork-Presbyterian Hospital. We expect hand hygiene compliance to improve from 79% to 94%.

Study Purpose and Rationale

Hand hygiene compliance is one of the most important determinants of nosocomial infection rates, but compliance rates remain poor despite the simplicity of the task. A nosocomial infection, also known as a hospital-acquired infection, is defined as an infection in which there is no evidence of its presence or incubation at the time of admission or any infection acquired within 72 hours of admission to hospital (1). The incidence of nosocomial infections is thought to be 6-15% of all hospital admissions (2). Even more concerning is the rate of such infections in the ICU, ranging from 10-32% depending on the study cited (3, 4). Nosocomial infections, aside from causing obvious morbidity to the patient, exact a harsh financial burden on hospitals on the health care system. In fact, one cost analysis describes a cost of $20,000 to the health care system per hospital-acquired MRSA infection (5). One particular study showed that by increasing hand hygiene compliance from 48 to 67%, nosocomial infections at a teaching hospital were reduce from 16% to 9.9%; p=0.04 (6). Factors impeding hand hygiene compliance include lack of time and the deleterious effect on skin (7). Most hand hygiene educational programs have had only limited effects hand decontamination rates (8).

Unlike medication orders, which can easily be monitored via an electronic order system, hand hygiene compliance primarily relies on the honesty of the health care worker. Monitoring and enforcing personal compliance is impractical and could have

unintentional consequences. Indirect reciprocity models demonstrate that people believe that others are watching their behavior, they increase their cooperation (9). Recent studies show that even when subjects think they are anonymous, they respond to subtle cues of being watched, such as a set of photocopied eyes (10). Similar cues in the hospital setting may influence health care workers to improve hand hygiene compliance. Therefore, this study intends to examine the effect of strategically placed images of human eyes on the rates of hand hygiene compliance on hospital wards and units that have poor compliance at baseline.

Study Design and Statistical Analysis

This prospective study will be conducted at the Allen Hospital Emergency Department, which has a baseline hand hygiene compliance rate of 79%, well below the hospital-wide mean of 94%. Color photographs of a pair of human eyes will be affixed directly above each Purell hand sanitizer dispenser within the ED. Hand hygiene compliance rates will be obtained through the current NewYork-Presbyterian hand hygiene observer program, through which health care workers are monitored surreptitiously on hundreds of occasions each month. Hand hygiene will be observed for three months in the ED, at which point the data will be analyzed. There are likely to be approximately 500 observances of hand hygiene opportunities. Via power analysis, only about 90 observances would be necessary to detect an anticipated difference of 0.15 after the intervention (79% to 94% compliance). The compliance rates, as proportions, will be compared using the chi-squared test. $P < 0.05$ will be considered statistically significant. A subgroup analysis will be performed, differentiating between physicians, nurses, and other health care workers.

Study Procedure

The study will observe hand hygiene practice (hand decontamination via alcohol-based solution vs. soap and water) over a 90-day period. Specifics to the study design are described above.

Study Drugs

N/A

Medical Devices

N/A

Study Subjects

The subjects include all those currently being monitored by the hand hygiene observer program, which includes all health care workers in the ED. Food service workers will also be monitored.

Recruitment of Subjects

Subjects will not be recruited for this study, as all health care workers in the Allen ED will be selected for the study.

Confidentiality of Study Data

All hand hygiene observance logs will lack any potential identifiers. Each hand hygiene observance will only note the profession of the subject.

Potential Conflict of Interest

None

Location of the Study

This will take place at the Allen Hospital Emergency Department, as described above. The chairman of this department will need to approve the study, after IRB approval is obtained.

Potential Risks

There are unlikely to be any risks associated with this study, although the presence of many images of eyes may be disconcerting to patients and staff.

Potential Benefits

This study could demonstrate a significant improvement in hand hygiene compliance, thereby potentially decreasing nosocomial infections transmitted in the ED.

Compensation to Subjects

No compensation will be provided

Costs to Subjects

There are no costs to the subjects involved with this study.

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