

5R01HS024108-02: Removing barriers to hand hygiene and glove compliance: evaluation of two novel time-efficient interventions

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This R01 proposal represents a thoughtful research plan and an expert investigative team aimed at studying Removing barriers to hand hygiene and glove compliance: evaluation of two novel, time-efficient interventions. Nearly 1 million healthcare-associated infections occur in the US annually, resulting in ~ 100,000 deaths. Most of these infections are preventable. The long-term objectives of our research is to improve patient safety by preventing infections in various healthcare settings and specifically to develop and implement effective interventions aimed at decreasing the transmission of important pathogens (including antibiotic-resistant bacteria). In this proposal, we aim to identify alternative time-efficient strategies to improve hand hygiene and glove compliance in settings where glove use is required. Hand hygiene is the cornerstone of infection prevention. Despite the importance of and increased focus on hand hygiene, compliance remains low in healthcare settings (40% on average in a large meta-analysis). Reports indicate that insufficient time and glove use, which is common and increasing, are major barriers to hand hygiene compliance. New hand hygiene strategies are needed that improve time and efficiency particularly in settings where glove use is required. We have identified two areas where compliance with recommended infection prevention practices of hand hygiene and glove use is poor and we offer potential solutions in this proposal. First, requiring hand hygiene prior to non-sterile glove use is a recommended practice with poor compliance and it may be unnecessary. We have shown in a single center randomized control trial that there is no difference in glove contamination when non-sterile gloves are donned directly versus after performing hand hygiene.

In Aim 1, we will perform a cluster randomized trial evaluating the benefits of protocol where hand hygiene is NOT required prior to non-sterile glove use relative to increased hand hygiene and glove use compliance and thus improved patient safety. Second, the current recommendations for performing hand hygiene during a single patient encounter when glove use is required is time consuming, cumbersome and may not be feasible - we will test an alternative strategy to improve compliance. For any single patient encounter, there are many opportunities for hand hygiene and when gloves are worn the current recommendation is for removal of gloves, performance of hand hygiene and donning clean gloves.

In Aim 2, we will perform a pilot study to assess whether gloves can be safely cleaned using alcohol-based hand rub for hand hygiene indications that occur during a single patient encounter.

In Aim 3, we will use qualitative methods to further study these interventions to inform future research and implementation.

Public Health Relevance

Healthcare-associated Infections (HAIs) are an important cause of patient morbidity and mortality and are largely preventable. Hand hygiene is the cornerstone of infection prevention and yet, compliance is typically poor. In this proposal, we wil evaluate two novel and time-efficient interventions aimed at improving compliance with hand hygiene and thus preventing infections and improving patient safety.