COMPARISION OF NON-STERILE GLOVES SPRAYED WITH ISOPROPYL ALCOHOL AND STERILE GLOVES

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Background: Sterile gloves are commonly used by healthcare workers to provide patient care during sterile procedures. Sterile gloves are consistently more expensive in comparison to normal examination gloves and can e put strain on departmental budgets. In compounding pharmacy, the United States Pharmacopeia (USP) states that sterile gloves should be used, unless another method is show to be non-inferior. The OU College Nuclear Pharmacy has begun efforts to treat non-sterile examination gloves with sprayable sterile isopropyl alcohol (IA) to reduce the department's use of sterile gloves. This investigation expands previous research used to predict the probability of a glove to be considered non-sterile after being sprayed with sterile IA.

Purpose: To determine the sterility of non-sterile gloves that have been sprayed with sterile IA in comparison to sterile gloves, using the USP guidelines for fingertip sampling.

Methods: Data of pathogen occurrence in an incubated auger that has been touched by the fingertips of sterile gloves will be compared to the pathogen occurrence in augers that have been touched by non-sterile gloves sprayed with sterile IA Counts of bacterial colonies will be the outcome of interest, since this is the outcome used by the USP in the guidelines for fingertip sampling. Statistical theory indicates that counts follow a Poisson distribution, thus Poisson regression will be used to determine non-inferiority of the sterile IA treated gloves compared to the sterile gloves. All statistical tests will assume a 5% chance of a type 1 error, and are computed using SAS 9.4 (Cary NC).

Results/ Areas of Feedback Desired: It is hypothesized that the number of pathogens found on non-sterile gloves sprayed with alcohol will be statistically insignificant in comparison to the number of pathogens found on sterile gloves. Feedback on how to improve methods of data collection is requested.

Conclusion: This study is relevant to my field because the use of sterile gloves is prevalent in the compounding of radiopharmaceuticals thus increasing the production cost of these drugs. New methods that indicate non-inferiority to sterile gloves should change methods in the compounding of radiopharmaceuticals, and thus decrease cost of production.

Relevance to Allied Health: The sterilization of non-sterile gloves could be important to any healthcare provider who has to maintain sterility but is interested in doing this the most cost-effective means.