Is our current cleaning method effective at eradicating Clostridium difficile?

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ABSTRACT

Background: Despite the high rate of Clostridium difficile (C. difficile) infections, the optimal method of environmental cleaning remains unclear.

Aims of project

A study evaluating the efficacy of hospital cleaning procedures on patients with C. difficile infection (CDI) is required to determine whether hospital cleaning procedures are effective.

Methods

This study will evaluate the effectiveness of environmental cleaning on patients with CDI at a hospital in order to determine which sites are most heavily colonised with the bacteria in order to target these areas, and to determine whether cleaning protocols are effective.

Results

Samples were taken before and after cleaning to establish whether the bacteria was present in the immediate environment of the CDI patients, C. difficile spores are present in the environment.

Conclusions

This study will evaluate the effectiveness of environmental cleaning on patients with CDI at a hospital in order to determine which sites are most heavily colonised with the bacteria in order to target these areas, and to determine whether cleaning protocols are effective.

Clostridium difficile (C. difficile) is a small, Gram-positive anaerobic bacterium that is commonly detected in the intestinal tract of humans. It is a member of the Firmicutes phylum and is a type of 'spore-forming' bacterium, meaning that it can exist in a dormant form. These spores are extremely robust and can withstand harsh conditions such as heat, radiation, and disinfectants. C. difficile is known to cause gastrointestinal infections, particularly diarrhea and colitis, which can be severe and sometimes life-threatening.

Recent studies have shown that C. difficile can persist in the environment and is difficult to eradicate through standard cleaning procedures. This is largely due to the ability of the bacteria to form spores, which can survive in the environment for long periods of time.

The objective of this study is to evaluate the effectiveness of current cleaning protocols in reducing the presence of C. difficile spores in the environment after cleaning. This will be achieved by collecting samples before and after cleaning in selected areas of the hospital environment.

Samples will be collected using a new swabbing technique called Polywipes™, which are known to be more effective at recovering C. difficile spores compared to traditional swabs. The samples will be subjected to a ribotyping analysis to determine the presence and type of C. difficile present in each sample.

Expected outcomes:

1. Identification of the most heavily colonised areas in the hospital environment.
2. Evaluation of the effectiveness of current cleaning protocols in reducing the presence of C. difficile spores in the environment.

This study will provide valuable information for the development of more effective cleaning protocols to prevent the spread of C. difficile in hospital settings.