

Cleaning and disinfecting environmental surfaces in health care: Toward an integrated framework for infection and occupational illness prevention

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ABSTRACT

Hospitals and healthcare institutions are considering new innovative technologies such as Accelerated Hydrogen Peroxide[®] (AHP[®]) that achieve germicidal efficacy without compromising the safety of hospital staff in an effort to win the war against microbes. Health care associated infections (HAIs) are of particular concern to infection prevention professionals because many of these are caused by rapidly developing strains of multidrug-resistant organisms (MDROs) which can cause serious illness in both patients and health care workers. Therefore, cleaning and disinfecting are important parts of a comprehensive infection prevention strategy. While demand for more effective cleaning and disinfecting is growing, there is also increasing evidence that exposure to cleaning and disinfecting agents can result in acute and chronic health effects, particularly respiratory illness.

BACKGROUND

Currently, there has been limited collaboration between the disciplines of infection prevention and occupational health to coordinate and optimize efforts to provide effective cleaning and disinfecting practices for HAI prevention while protecting the respiratory health of healthcare workers, patients, volunteers, visitors and other building occupants. This lack of coordination has led to gaps in knowledge and practice guidelines. Objectives This article provides a multidisciplinary summary of current knowledge and knowledge gaps

that can impact professionals, workers, researchers, and policymakers involved in infection prevention, control, and occupational health and safety in all types of health care settings.

METHODS

The Cleaning and Disinfecting in Healthcare (CDHC) Working Group was assembled in accordance with the goals of the National Occupational Research Agenda (NORA), a partnership program to stimulate innovative research and improve workplace practices. The CDHC Working Group included >40 participants from four countries.

RESULTS

Effectiveness of Cleaning and Disinfecting Products and Procedures

The Working Group determined that enhanced guidance and research is needed to understand:

- The contribution of surface contamination to the risk of infectious diseases among health care workers and patients.
- Which types of chemicals and products to use on different types of equipment and surface materials is needed.
- The effectiveness and safety of newer chemical disinfectants and research on the impact of biofilms or surface soil and its ability to interfere with the efficacy

of disinfectants applied to environmental surfaces.

- Whether the conditions under which a 1-step process using a combined detergent-disinfectant product can be as effective for reducing contamination on surfaces as a 2-step process in which cleaning is followed by disinfection.

- The extent to which thorough disinfecting practices that do not follow contact time recommendations can be effective for infection prevention.

- The hazards of environmental surface cleaning and disinfecting and the effectiveness of potential safer alternatives.

Safer Alternatives

It was revealed by the Working Group that improved guidance is needed to:

- Assist healthcare institutions in selecting from a range of effective and safe products and practices.
- Effectively engage all levels of staff in a health care organization in the selection and safe use of cleaning and disinfecting products, including regular training and evaluation of the training.
- Create new communication strategies to reach healthcare workers

with information regarding potential health effects of cleaning and disinfecting strategies.

- Create standardized criteria to define green cleaning, green cleaning health effects evaluation, green cleaning infection prevention evaluation, nonchemical technologies evaluation for cleaning and disinfection and prevention through design implementation.

CONCLUSION

There is a desire and a necessity for a more integrated approach to infection and occupational illness prevention. Professional organizations in infection prevention and occupational health are well-positioned to take leadership in this effort by establishing joint committees and engage with funders to set priorities and a time table to move the research and improved practice guidance forward.