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Infection Control Current Awareness: March 2015

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

Quinn MM, Henneberger PK et al Am J Infect Control. 2015 Mar 16.

Abstract

BACKGROUND:

The Cleaning and Disinfecting in Healthcare Working Group of the National Institute for Occupational Safety and Health, National Occupational Research Agenda, is a collaboration of infection prevention and occupational health researchers and practitioners with the objective of providing a more integrated approach to effective environmental surface cleaning and disinfection (C&D) while protecting the respiratory health of health care personnel.

METHODS:

The Working Group, comprised of >40 members from 4 countries, reviewed current knowledge and identified knowledge gaps and future needs for research and practice.

RESULTS:

An integrated framework was developed to guide more comprehensive efforts to minimize harmful C&D exposures without reducing the effectiveness of infection prevention. Gaps in basic knowledge and practice that are barriers to an integrated approach were grouped in 2 broad areas related to the need for improved understanding of the (1) effectiveness of environmental surface C&D to reduce the incidence of infectious diseases and colonization in health care workers and patients and (2) adverse health impacts of C&D on health care workers and patients. Specific needs identified within each area relate to basic knowledge, improved selection and use of products and practices, effective hazard communication and training, and safer alternatives.

CONCLUSION:

A more integrated approach can support multidisciplinary teams with the capacity to maximize effective and safe C&D in health care.

Infection prevention and control.

Pegram A, Bloomfield J. Nurs Stand. 2015 Mar 18, vol 29, no 29, p37-42

Abstract

All newly registered graduate nurses are required to have the appropriate knowledge and understanding to perform the skills required for patient care, specifically the competencies identified in the Nursing and Midwifery Council's essential skills clusters. This article focuses on the third essential skills cluster - infection prevention and control.

It provides an overview and discussion of the key skills and behaviours that must be demonstrated to meet the standards set by the Nursing and Midwifery Council. In doing so, it considers the key principles of

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infection prevention and control, including local and national policies, standard infection control precautions, risk assessment, standard isolation measures and asepsis.

[Regional infection control assessment of antibiotic resistance knowledge and practice.](#)

Black SR, Weaver KN, Weinstein RA, Hayden MK, Lin MY, Lavin MA, Gerber SI.
Infect Control Hosp Epidemiol. 2015 Apr, vol 36, no 4, p381-6.

Abstract

OBJECTIVE Multidrug-resistant organisms (MDROs) are an increasing burden among healthcare facilities. We assessed facility-level perceived importance of and responses to various MDROs.

DESIGN A pilot survey to assess staffing, knowledge, and the perceived importance of and response to various multidrug resistant organisms (MDROs)

SETTING Acute care and long-term healthcare facilities **METHODS** In 2012, a survey was distributed to infection preventionists at ~300 healthcare facilities. Pathogens assessed were Clostridium difficile, carbapenem-resistant Enterobacteriaceae (CRE), carbapenem-resistant Acinetobacter, methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant Enterococcus, multidrug-resistant (defined as bacterial resistance to ≥ 3 antibiotic classes) Pseudomonas, and extended-spectrum β -lactamase-producing Escherichia coli.

RESULTS A total of 74 unique facilities responded, including 44 skilled nursing facilities (SNFs) and 30 acute care facilities (ACFs). While ACFs consistently isolated patients with active infections or colonization due to these MDROs, SNFs had more variable responses. SNFs had more multi-occupancy rooms and reported less specialized training in infection control and prevention than did ACFs. Of all facilities with multi-occupancy rooms, 86% employed a cohorting practice for patients, compared with 50% of those without multi-occupancy rooms; 20% of ACFs and 7% of SNFs cohorted staff while caring for patients with the same MDRO. MRSA and C. difficile were identified as important pathogens in ACFs and SNFs, while CRE importance was unknown or was considered important in <50% of SNFs.

CONCLUSION We identified stark differences in human resources, knowledge, policy, and practice between ACFs and SNFs. For regional control of emerging MDROs like CRE, there is an opportunity for public health officials to provide targeted education and interventions. Education campaigns must account for differences in audience resources and baseline knowledge.

[Understanding the current state of infection prevention to prevent Clostridium difficile infection: A human factors and systems engineering approach.](#)

Yanke E, Zellmer C, Van Hoof S, Moriarty H, Carayon P, Safdar N.
Am J Infect Control. 2015 Mar 1, vol 43, no 3, p241-7

Abstract

BACKGROUND:

Achieving and sustaining high levels of health care worker (HCW) compliance with contact isolation precautions is challenging. The aim of this study was to determine HCW work system barriers to and

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facilitators of adherence to contact isolation for patients with suspected or confirmed Clostridium difficile infection (CDI) using a human factors and systems engineering approach.

METHODS:

This prospective cohort study took place between September 2013 and November 2013 at a large academic medical center (hospital A) and an affiliated Veterans Administration hospital (hospital B). A human factors engineering (HFE) model for patient safety, the Systems Engineering Initiative for Patient Safety model, was used to guide work system analysis and direct observation data collection. There were 288 observations conducted. HCWs and visitors were assessed for compliance with all components of contact isolation precautions (hand hygiene, gowning, and gloving) before and after patient contact. Time required to complete contact isolation precautions was measured, and adequacy of contact isolation supplies was assessed.

RESULTS:

Full compliance with contact isolation precautions was low at both hospitals A (7%) and B (22%). Lack of appropriate hand hygiene prior to room entry (compliance for hospital A: 18%; compliance for hospital B: 29%) was the most common reason for lack of full compliance. More time was required for full compliance compared with compliance with no components of contact isolation precautions before patient room entry, inside patient room, and after patient room exit (59.9 vs 3.2 seconds, $P < .001$; 507.3 vs 149.7 seconds, $P = .006$; 15.2 vs 1.3 seconds, $P < .001$, respectively). Compliance was lower when contact isolation supplies were inadequate (4% vs 16%, $P = .005$).

CONCLUSIONS:

Adherence to contact isolation precautions for CDI is a complex, time-consuming process. HFE analysis indicates that multiple work system components serve as barriers and facilitators to full compliance with contact isolation precautions and should be addressed further to prevent CDI.

Using Workflow Diagrams to Address Hand Hygiene in Pediatric Long-Term Care Facilities.

Carter EJ, Cohen B, Murray MT, Saiman L, Larson EL.
J Pediatr Nurs. 2015 Mar 12

Abstract

Hand hygiene (HH) in pediatric long-term care settings has been found to be sub-optimal. Multidisciplinary teams at three pediatric long-term care facilities developed step-by-step workflow diagrams of commonly performed tasks highlighting HH opportunities. Diagrams were validated through observation of tasks and concurrent diagram assessment. Facility teams developed six workflow diagrams that underwent 22 validation observations. Four main themes emerged: 1) diagram specificity, 2) wording and layout, 3) timing of HH indications, and 4) environmental hygiene. The development of workflow diagrams is an opportunity to identify and address the complexity of HH in pediatric long-term care facilities.

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