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Featured Article

Development and Evaluation of an Interprofessional Simulation-Based Learning Module on Infection Control Skills for Prelicensure Health Professional Students

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KEYWORDS
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simulation;
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critical care

Abstract

Introduction: Poor adherence to infection control standards among health care professionals is widespread, putting patients at substantial risk. Basic infection control skills are typically learned uniprofessionally outside the clinical environment. In real clinical settings, the cognitive load associated with simultaneously managing challenging clinical problems as part of an interprofessional team compounds difficulties in applying infection control standards. This mixed methods study evaluated an interprofessional education infection control module as part of a larger action research project aimed at developing interprofessional health education using simulation.

Methods: Students from medicine, nursing, and physiotherapy (N = 24) participated in a pilot infection control simulation. Participants completed a survey regarding confidence performing infection control skills, perceptions of interprofessional communication and collaboration, and satisfaction with the module. Qualitative feedback was obtained from facilitators and participants.

Results: Participants reported confidence with all skills except enhanced precautions and found the interprofessional simulation-based training valuable. Observers identified instances where infection control practices were not appropriately followed within the clinical context but noted strong teamwork and collaboration amongst team members. Several barriers to learning were identified. The majority of participants indicated that the interprofessional infection control module should be

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mandatory for health sciences students. Qualitative analysis revealed recommendations on ways to make this type of session more effective.

Conclusions: This pilot project demonstrated the feasibility of using high-fidelity patient simulation to reinforce infection control skills and promote interprofessional communication and teamwork. Study results support the need for senior health professional students to learn and practice infection control skills in an interprofessional manner and to incorporate complex clinical scenarios in the training.

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Key Points

- High levels of self-reported learner confidence in infection control skills did not translate into high levels of performance within the complex patient care scenarios.
- Senior health professional students need opportunities to practice infection control skills within the context of complex patient care situations.
- It is feasible to implement a complex, simulation-based IPE module to reinforce both interprofessional communication and teamwork and infection control skills.

Prevention of hospital-acquired infections is critical to patient safety and the responsibility of all health care professionals. As prelicensure students prepare to transition to professional practice, it is unclear how prepared they are to implement basic infection control principles and practices they have learned within real clinical environments and particularly within complex acute/critical care settings. Although infection control principles and skills may have been mastered, applying them appropriately in the context of multiple clinical demands can be difficult for even experienced health care professionals. Effective infection control, however, depends on every member of the interprofessional team scrupulously implementing the standards while simultaneously responding to complex clinical problems. Moreover, infection control skills include the ability to communicate the need to apply the standards to any member of the interprofessional team who fails to do so regardless of their respective positions in the institutional hierarchy. High-fidelity patient simulation is increasingly being used within educational and clinical settings to enhance interprofessional teamwork and patient safety (Berndt, 2014; Brock et al., 2013; Patterson, Geis, LeMaster, & Wears, 2013). It offers prelicensure health professionals opportunities to apply specific knowledge and skills being learned to a dynamic, complex, and team-based clinical context.

Background

Poor infection control continues to plague health care despite major efforts to decrease microbial transmission (Institute of Medicine, 2000). Reports indicate that 5% to 10% of hospitalized patients contract one or more infections, which are responsible for lengthened admissions and increased mortality rates. An estimated 220,000 hospital-acquired infections occur in Canadian hospitals each year, resulting in over 8000 deaths and rates continue to rise (Zoutman et al., 2003), adding an estimated $1 billion annually in direct costs to the Canadian health care system (Van Iersel.A., 2007). Estimates of direct medical costs to US hospitals range from $28.4 to $45 billion (Scott, 2009). Hand hygiene, by hand washing or alcohol-based hand rubs, is universally considered to be the foundation of infection prevention and control (Public Health Agency of Canada, 2010). Despite increased education, health care worker compliance with hand hygiene is very low worldwide. Compliance rates in hospital settings have ranged between 16% and 81% (Pittet, 2001).

Prelicensure students are often exposed to poor infection control practices early on in clinical training, which has been shown to impact their future practice (Ward, 2010; Ott & French, 2009). Similar to practicing clinicians, prelicensure students often overestimate their own compliance with basic infection control practices (Cole, 2009; Snow, White, Jr., Alder, & Stanford, 2006). This subconscious misjudgment of skills is more resistant to behavioral change, adding an additional challenge to improving infection control practices amongst health care workers (Trunnell & White, Jr., 2005).

Interprofessional education (IPE) informs learners about roles of other health professionals and key behaviors essential for optimal health care team functioning (Cook, 2005). High-fidelity clinical simulation has been found to be an effective method for enhancing clinical knowledge, skills, and team approaches to managing complex care