

Infection Prevention and Control

Current Awareness Bulletin

September 2025

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Book a session today at <https://forms.office.com/e/HyiSXfDaYV> (these sessions will be held on a monthly basis)

1. Effect of Nursing Practice Environment, Nurse Staffing, Overtime and Hand Hygiene on Hospital-Acquired Infections in a Tertiary Teaching Hospital

Authors: Al-Ghraiya, Tamer; Lago, Luise; Fernandez, Ritin; Molloy, Luke and Sim, Jenny

Publication Date: 2025

Journal: Journal of Clinical Nursing 34(10), pp. 4142–4154

Abstract: Aims: To investigate the impact of the nursing practice environment, nurse staffing, working overtime and compliance with hand hygiene standards on hospital-acquired infections.; Design: A multi-source quantitative study.; Methods: Nursing data were collected from selected wards in one hospital between 18 January 2021 and 15 March 2021. Hand hygiene compliance data were obtained retrospectively from Hand Hygiene Australia Audits between July 2018 and June 2021. Patient data were gathered from July 2018 to June 2021. Data from the three sources were linked together at the episode of care level. Descriptive statistics were used to summarise participant characteristics, and multiple logistic regression was employed to assess associations between the nursing practice environment, nurse staffing, overtime and hand hygiene with hospital-acquired infections.; Results: A total of 361 nurses participated in the nursing survey. There were 13,440 hand hygiene moments assessed, and 10,924 (81.3%) correct practices were observed. There were 71,257 patient care episodes, including 2037 with hospital-acquired infections. The odds of hospital-acquired

infections decreased by 19% for every 10% increase in nurses' compliance with hand hygiene and decreased by 7% for each one standard deviation increase in the nursing practice environment scale. Each additional patient per nurse was associated with a 42% increase in the odds of a hospital-acquired infection.; Conclusion: This study found evidence that a favourable nursing practice environment, reduced nurse workload and compliance with hand hygiene are linked to a lower risk of hospital-acquired infections.; Impact: A favourable nursing practice environment contributes to fewer hospital-acquired infections. Monitoring of hand hygiene compliance provides important local information to support improvements in practice. Findings from this study can be used to support the implementation of safe nurse staffing policies that guide implementation of nurse-to-patient ratios.; Reporting Method: RECORD Checklist.; Patient or Public Contribution: No Patient/Public Contribution. (© 2024 John Wiley & Sons Ltd.)

2. Quality of Hand Hygiene Performance: A Systematic Literature Review

Authors: Ferreira, Julia Messina G.;Marra, Vinicius S.;Generoso,José Roberto,,Jr;Tudino, Carlos H.;Hsieh, Mariana Kim;Pardo, Isabele;Campagnoli, Pietra Sovero;Ceccon, Luiz Eduardo;Celeghini, Patricia Deffune;Zancopé, Beatriz Bonini;Possebon, Mariah Pires;Tavares, Lucca Miguel Duda;Seabra, Beatriz Corrêa Dos Santos;Perencevich, Eli N.;Goto, Michihiko;Edmond, Michael B. and Marra, Alexandre R.

Publication Date: 2025

Journal: American Journal of Infection Control

Abstract: Background: Hand hygiene (HH) is essential for infection prevention in healthcare, but the quality of its performance, meaning how well it is done, receives much less attention than compliance. This review examines how HH technique is assessed and can be improved among healthcare providers.; Methods: Following PRISMA guidelines, six databases were searched through May 15, 2025. Studies assessing HH performance quality in healthcare were included. Quality indicators included technique completeness, product volume, and duration. Study selection, data extraction, and risk of bias assessments were performed independently by two reviewers.; Results: Forty studies met inclusion criteria. Despite compliance rates, ranging from 23.5% to 93.2%, proper technique was often lacking. Few HH events followed all recommended steps, and frequently missed areas included fingertips, thumbs, and wrists. Alcohol-based hand rubs (ABHR) outperformed soap and water in quality and coverage. Interventions such as real-time feedback, UV markers, and augmented reality tools improved technique temporarily, though sustained improvement was rare. Educational interventions showed mixed long-term results.; Conclusions: HH performance quality remains suboptimal even with high compliance. Future efforts should prioritize technique-focused training, innovative feedback, and simplified protocols to enhance hand hygiene quality in clinical practice. (Copyright © 2025 Association for Professionals in Infection Control and Epidemiology, Inc. All rights reserved.)

3. The Crani Bundle: Chlorhexidine Gluconate Bathing, Patient Hand Hygiene, and Surgical Site Dressing Care in Preventing Surgical Site Infections

Authors: Franker, Lauren M.;Pretet, Molly;Simmons, Kristin;Douglas, Barbara and Young, Lisa

Publication Date: 2025

Journal: Journal of Nursing Care Quality 40(4), pp. 363–369

Abstract: Competing Interests: The authors declare no conflicts of interest.; Background: Surgical site infections (SSIs) are preventable complications. The Joint Commission (TJC) National Patient Safety Goal® (NPSG) 7 focuses on decreasing health care-associated infections (HAIs), such as SSIs.; Local Problem: The neurosurgery service line encountered 4 SSIs from craniotomy procedures over a 27-month period with 2 occurring in 1 month requiring immediate attention.; Methods: A pre- (January 2018 to March 2020)/post-implementation (April 2020 to July 2022) design, using rapid Plan-Do-Study-Act cycles, guided this evidenced-based practice quality improvement project.; Interventions: The Crani Bundle, a nurse-led SSI prevention initiative focusing on patient hand hygiene and postoperative chlorhexidine gluconate bathing, was developed and implemented to reduce SSI after craniotomy (SSI-CRAN).; Results: Implementation of the Crani Bundle decreased SSI-CRAN from 3.38% (n = 4/118) to 0.0% (n = 0/87).; Conclusions: The Crani Bundle was effective in reducing SSI-CRAN, meeting TJC NPSG® of preventing HAIs and improving patient safety. (Copyright © 2025 Wolters Kluwer Health, Inc. All rights reserved.)

4. Frequent Hand Hygiene-Induced Skin Symptoms and Alterations in Hand Microbiota: A Neglected Form of Chronic Occupational Exposure Among Health Care Workers

Authors: He, Wenbin;Lin, Xiaofeng;Chen, Nuo;Li, Yan;Feng, Bilong;Cheng, Fan;Chen, Xiaoyan;Tan, Yibin;Zhang, Ying;Wu, Wenwen and Wang, Ying

Publication Date: 2025

Journal: Journal of Nursing Care Quality 40(4), pp. E50–E56

Abstract: Competing Interests: Authors declare no conflicts of interest.; Background: Frequent hand hygiene is essential for infection control among health care workers (HCWs) but may cause adverse skin effects.; Purpose: To assess the relationships between frequent hand hygiene practices, skin symptoms, and microbiota alterations in HCWs.; Methods: A comprehensive search of 7 databases was conducted to identify articles published between January 2014 and July 2024 in English and Chinese.; Results: A total of 24 studies were included in the review. Frequent hand hygiene was associated with reduced microbial flora in 2 studies and high incidences of skin dryness, itching, peeling, erythema, fissures, burning, and pain in 18 studies. Fifteen studies linked frequent hand hygiene to eczema, dermatitis, acne, and folliculitis, while 1 study found higher *Staphylococcus aureus* detection in severe eczema cases.; Conclusions: Prolonged frequent hand hygiene alters hand microbiota and induces various skin symptoms, necessitating attention to chronic occupational exposure among

5. Spillover effects on mortality within randomized concurrent controlled trials of antimicrobial-based infection prevention interventions among the mechanically ventilated patient population. A reappraisal of Cochrane review data

Authors: Hurley, J.

Publication Date: 2025

Journal: Journal of Hospital Infection 163, pp. 1–9

6. The Role of Interdisciplinary Teams in Infection Prevention and Control Across Acute and Long-Term Care Settings

Authors: KALP, ERICKA

Publication Date: Sep ,2025

Journal: Infection Control Today 29(5), pp. 8–10

7. Update on infection prevention in the ICU

Authors: Medioli, Filippo;Franceschini, Erica;Mussini, Cristina and Meschiari, Marianna

Publication Date: 2025

Journal: Current Opinion in Critical Care 31(5), pp. 529–538

Abstract: Purpose of Review: Healthcare-associated infections (HAIs) remain a critical challenge in intensive care units (ICUs) due to the high prevalence of invasive procedures, vulnerable patient populations, and the increasing threat of antimicrobial-resistant organisms (MDROs). This review synthesizes current evidence on infection prevention and control (IPC) strategies in the ICU setting, highlighting recent findings and innovations in this evolving field, particularly in light of the impact of the COVID-19 pandemic.; Recent Findings: The review outlines ten key IPC strategies for ICUs, categorizing them into horizontal (universal) and vertical (pathogen-specific) approaches. Recent literature emphasizes the importance of enhanced hand hygiene compliance through motivational interventions and feedback. The role of selective decontamination strategies remains debated, with evidence suggesting potential benefits in specific patient subgroups. Vertical strategies, including active screening for MDROs and per-pathogen bundles, are increasingly being tailored based on local epidemiology and pathogen characteristics. Studies suggest that de-escalating routine contact precautions for certain MDROs like Methicillin-resistant *Staphylococcus aureus* and Vancomycin-resistant *Enterococcus* may be safe in settings with robust horizontal measures. Conversely, intensified "search and destroy" strategies show promise in controlling carbapenem-resistant *Acinetobacter baumannii* outbreaks.; Summary: Effective IPC in the ICU requires a multifaceted and adaptable approach, integrating both universal precautions and

targeted interventions against specific pathogens. While consistent implementation of horizontal strategies like hand hygiene is foundational, tailoring vertical strategies based on local MDRO epidemiology and patient risk profiles is crucial. Future research should focus on harmonizing IPC policies, optimizing screening methods, and evaluating the long-term impact of combined IPC and antimicrobial stewardship programs to improve patient outcomes and mitigate the spread of antimicrobial resistance in critical care settings. (Copyright © 2025 Wolters Kluwer Health, Inc. All rights reserved.)

8. Relationship of Adhesive Drapes on Groin Surgical Site Infection Prevention in Vascular Surgery

Authors: Robbins, Justin M.;Schutter, Brian;Cush, Charles;Szeltner, Dawn;Ehrlich, Haley;Crawford, Timothy;Thomas, Michaela;Rishi, Muhammad;Pecchioni, Louisa and Velasco, Jonathan

Publication Date: 2025

Journal: The Journal of Surgical Research 314, pp. 662–670

Abstract: Introduction: Iodine impregnated adhesive drapes have been shown to reduce incidence of surgical site infection (SSI) in cardiothoracic surgery. A Cochrane review of its use in multiple specialties found significantly more SSIs in the adhesive group versus control. No studies have evaluated their use in vascular surgery and infrainguinal SSIs which this study sought to evaluate.; Methods: This was a retrospective study evaluating patients with any infrainguinal vascular surgical procedure from 2013 to 2023. We evaluated demographics, intraoperative variables including use of adhesive drapes and the occurrence of SSI up to 90 d postoperatively. Patients were excluded if they presented with already infected site.; Results: A total of 1292 patients with average age of 62.1 ± 8.8 and majority were male. Eighty percent had adhesive drapes used and 18.1% had an SSI with 79.6% being superficial and 20.4% deep. Patients were more likely to have SSI if they had higher body mass index (BMI), were female, or had diabetes. A multivariable logistic regression model examined association of adhesive drapes on SSI. There was no difference in the odds of an SSI for those with adhesive drapes compared to those without (odds ratio = 0.86; 95% confidence interval: 0.57-1.30). On secondary analysis, there was a significant interaction between adhesive drape use and BMI ($P = 0.007$) with a higher odd of SSI found in patients with higher BMI.; Conclusions: This study showed no significant difference in SSI rates with lban use but showed that BMI may impact its preventative benefit. Future multicenter prospective randomized trials will be needed to better elucidate its true impact on SSI prevention. (Published by Elsevier Inc.)

9. Development of the SMART Toolkit: An online collection of management resources for health care-associated infection prevention

Authors: Rush, Laura J.;MacEwan, Sarah R.;Hebert, Courtney;Sova, Lindsey N.;Gaughan, Alice A.;Griesenbrock, Tyler;Huerta, Timothy R. and McAlearney, Ann Scheck

Publication Date: 2025

Journal: American Journal of Infection Control 53(9), pp. 997–1000

Abstract: We previously reported results of an in-depth study of management practices to prevent health care-associated infections. Here we describe the development of an online toolkit containing resources that can be used to implement 6 of these key management practices. Resources include practical examples, quotations describing the importance of the practice, facilitator guides and presentation slides for conducting informational sessions, assessment tools, communication templates, and simulation activities. This paper describes the development of the online toolkit, which is available at <https://smart.osu.edu/>. Display omitted] • Management strategies can support health care-associated infection control. • The SMART Toolkit describes management practices we identified in a previous study. • The online Toolkit offers free resources for clinical and administrative managers. • The toolkit can be accessed at <https://smart.osu.edu/>.

10. All you need to know about the surge in measles cases: A guide to the spike in cases, vaccine uptake, symptom recognition and infection prevention and control

Authors: Sheth Trivedi, Shruti

Publication Date: 2025

Journal: Nursing Children & Young People 37(5), pp. 10–11

Abstract: The death of a child from measles in England has prompted fresh calls for better uptake of the measles, mumps and rubella (MMR) vaccine. The child is believed to have died at Alder Hey Children's Hospital in Liverpool, with the hospital trust warning of a rise of the highly contagious virus in the region.

11. Simulation-based training for teaching infection prevention: from realistic to virtual environments

Authors: Souza, Raissa Silva;Carvalho, Dárlinton Barbosa Feres;Félix, Adriana Maria,da Silva and Dias, Ana Angélica Lima

Publication Date: 2025

Journal: Revista Brasileira De Enfermagem 78Suppl 4, pp. e20240288

Abstract: Objectives: to describe the process of transitioning from a realistic simulation to a computer-based simulation focused on bloodstream infection prevention.; Methods: this report presents the development of a technology-based solution (a 3D virtual environment simulator) to address a specific problem: expanding the reach of an existing realistic simulation. The epistemological and methodological approach of Design Science Research guided the process.; Results: we developed a computer-based simulation scenario using the Unity 3D platform. A panel of experts in the field positively evaluated the resulting artifact, indicating that it possesses quality, rest on valid theoretical foundations, and effectively addresses its intended problem.; Final Considerations: the transition process described led to the development of a computer-based simulation that promotes autonomous, interactive, and engaging learning. However, it serves as a complementary technological tool rather than a substitute for laboratory-based training and clinical experiences.

12. Transmission of *Staphylococcus aureus* from an Outpatient to an Inpatient: Implications for Infection Control

Authors: Tanriverdi, Elif Seren;Yakupogullari, Yusuf;Memisoglu, Funda and Otlu, Baris

Publication Date: 2025

Journal: The Journal of Hospital Infection

Abstract: Competing Interests: Declaration of Competing Interest None.

13. Staff perceptions of their roles in infection prevention and control in residential aged care homes: A qualitative study

Authors: van Gulik, Nantanit;Calder, Wendy;Blencowe, Philippa;Mikus-Cunningham, Alexandra;Carmichael, Roslyn;Bouchoucha, Stephane;Kangutkar, Tejashree and Considine, Julie

Publication Date: 2025

Journal: American Journal of Infection Control

Abstract: Background: Older people who live in residential aged care homes (RACHs) are particularly vulnerable to infections. Without staff commitment and engagement, even the most well-designed policies and guidelines may fail to achieve infection prevention and control (IPAC) effectiveness. The aim of this study was to examine staff perceptions of their roles in IPAC in RACHs.; Methods: A qualitative descriptive study using semi-structured interviews with 21 direct care and support staff was conducted on two RACHs in Melbourne, Australia. Participants were interviewed from May to October 2024. Transcribed audio-recordings of interviews were analyzed using inductive thematic analysis.; Results: Both direct care and support staff perceived their primary role in IPAC as providing both physical safety and emotional support to older people. While they recognized the importance of routine and outbreak-related IPAC practices, they identified key barriers such as older people's cognitive impairment, home-like environments, and staffing challenges. Most participants felt supported by organizational training but emphasized the need for ongoing IPAC education regardless of role.; Conclusions: The findings highlight the importance of tailored IPAC training, including communication strategies for supporting older people with cognitive impairment, along with team collaboration and workforce retention measures to sustain effective IPAC in RACHs. (Copyright © 2025. Published by Elsevier Inc.)

14. Infection prevention and control in general practice: Care Quality Commission requirements

Authors: Wood, Dana Jayne

Publication Date: 2025

Journal: Practice Nursing 36(9), pp. 324–330

Abstract: Infection prevention is a crucial consideration for all healthcare professionals. The COVID-19 pandemic led to an increased focus on infection control among the public and in the media, but much of this focused on hospital settings and care homes, rather than general practice. Yet, all nurses have a responsibility to uphold infection prevention and control standards, and there are specific tools and guidance available to general practice. This article outlines key considerations for infection prevention and control in primary care, as set out by the Care Quality Commission, including policy, training, cleaning and auditing. Use of personal protective equipment and prevention of vaccine-avoidable diseases are also discussed, alongside additional considerations, including waste management and cold chain preservation. Practice nurses must be aware of, and trained in, their responsibilities for infection prevention to ensure that care is delivered safely and risks to staff and patients are minimised.

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