Royal United Hospitals Bath
NHS Foundation Trust

Infection Prevention and Control

Current Awareness Bulletin

December 2025

Our Current Awareness Bulletins provide details of recently published articles in a given subject. They are a quick and easy way to keep up to date.

Please contact the Academy Library to request any articles:

ruh-tr.library@nhs.net

01225 82 4897/4898

Carry out basic searches using the Knowledge and Library Hub.

Sign up to NHS OpenAthens to access our subscriptions.

Contact us to receive our bulletins via email each month.

Get personalised alerts via our KnowledgeShare service.

ruh.nhs.uk/library

New training via MS Teams available from the Academy Library:

- **Bitesize searching databases for evidence: a quick guide to help you develop your literature searching skills**
  45 minutes. Learn how to transform a question into a search strategy, and how to find the best evidence in a database.
  Next sessions: 22nd January 2026 @ 2pm and 13th February 2026 @ 3pm

- **Simple and painless evidence into practice (BMJ Best Practice and the LKS Hub)**
  30 minutes. Learn about quick and hassle-free ways to seamlessly incorporate evidence into your daily work.
  Next sessions: 16th January 2026 @ 10am and 2nd February 2026 @ 11am

- **Quickfire health literacy: communicating with patients more effectively**
  30 minutes. Learn about the communication barriers patients may encounter, and ways to ensure they get the most from their care.
  Next sessions: 7th January 2026 @ 2pm and 19th February 2026 @ 3pm

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

---

1. **Assessment of Surgical Site Infection Prevention Strategies in Obstetric Nursing Practice**

Authors: Guo, Qianwen;Lan, Ling and Wu, Ruoshi

Publication Date: Jan ,2026

Journal: Journal of Nursing Care Quality 41(1), pp. 49–55

Abstract: Background: Surgical site infections (SSIs) pose significant challenges in obstetric nursing, affecting maternal and neonatal safety. Purpose: This study aimed to evaluate the effectiveness of comprehensive strategies for preventing SSIs in obstetric nursing. Methods: A retrospective analysis was conducted on 200 obstetric surgical patients from January 2018 to December 2022. The observation group received comprehensive SSI prevention strategies and the control group received routine nursing care. Results: The observation group had a significantly lower SSIs rate (3.0% vs 10.0%, P =.045), fewer complications (1.0% vs 7.0%, P =.028), better incision healing (98.0% vs 91.0%, P =.028), fewer adverse events (4.0% vs 13.0%, P =.022), and lower pain scores on postoperative days 1 and 2. Conclusion: Implementing comprehensive SSI prevention strategies in obstetric nursing significantly reduces SSIs, complications, and pain, while enhancing wound healing and recovery.

2. **Infection prevention and control in the CT suite: a qualitative study with Australian radiographers in intravenous contrast administration**

Authors: Abu Awwad, Dania;Hill, Suzanne;Lewis, Sarah and Jimenez, Yobelli

Publication Date: 2025

Journal: BMC Health Services Research 25(1), pp. 1534

Abstract: Competing Interests: Declarations. Ethics approval and consent to participate: Ethics approval was obtained by the University of Sydney's Human Research Ethics Committee (Project number: 2022/493). All methods were carried out in accordance with relevant guidelines and regulations. Informed consent was obtained from all participants. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.; Background: Within radiology departments, computed tomography (CT) has been identified as presenting a higher risk of infection compared to other imaging modalities. CT scanning often deploys contrast injectors to administer iodine contrast intravenously, which poses infection risks for patients and staff. The aim of this study was to explore the variations in practice and the enablers and barriers to infection prevention and control (IPC) practices in the CT suite in Australia.; Methods: Semi-structured focus group discussions (FGD) were conducted over three sessions with thirteen registered radiographers, who had expressed interest in participating in FGDs after completing a survey on IPC knowledge and practice. The FGDs ran for one hour and questions focused on workplace surveillance, IPC education, risks associated with different components of contrast injectors, and variations between staff. FGDs were transcribed verbatim and coded using thematic analysis to identify key themes and concepts.; Results: Three key themes arose from the focus group discussions: 'Communication and Education in Radiology', 'Safety in CT', and 'Injection Technology'. Participants described general IPC modules, most of which did not relate to the CT environment. In hospital settings, IPC policies were often considered broad, and participants described having no written policies relating to IPC and the CT contrast injector. IPC safety was impacted by other staff members, particularly staff from other departments who assist with connecting the CT injector but were often not familiar with CT equipment. CT injectors have connection points that must remain sterile and poor adherence to IPC practices will increase the risk of infections. The number of connection points are less in multi-use injectors compared to single-use injectors, hence, there was a perceived advantage with multi-use injectors. However, single-use injectors were used for infectious patients if available for easier cleaning.; Conclusion: The lack of CT-specific IPC training and policies led to variations in practice between staff in the CT suite. Training and resources focused on radiology settings and scenarios are needed and would benefit both radiology staff and other wards that require radiology services. (© 2025. The Author(s).)

---

3. **Balancing resources and responsibility: managers' perspectives on promoting infection prevention behaviours in hospital settings**

Authors: Arvidsson, Lisa;Lindberg, Maria and Skytt, Bernice

Publication Date: 2025

Journal: Leadership in Health Services (1751-1879) 38(5), pp. 113–127

Abstract: Purpose: The purpose of this study is to explore hospital managers' experiences and reflections concerning the influence of working conditions on nursing staff's infection prevention behaviours and strategies used by the managers to promote infection prevention work among staff. Design/methodology/approach: The qualitative study uses a reflexive thematic analysis. Six first-line and five second-line managers at surgical and orthopaedic hospital units were interviewed. Findings: Reflecting a balance between resources and responsibility in promoting infection prevention behaviours, four themes were generated: (1) being attentive to staff needs and taking action in a changing healthcare environment, where managers adjust working conditions to minimise interruptions and manage workload; (2) bultivating a positive work climate for both the team and the individual, emphasising team collaboration and role modelling in infection prevention; (3) providing resources for knowledge development and understanding, including appointing hygiene representatives and promoting accessible infection control information; and (4) promoting personal responsibility for compliance and infection-safe workflows, highlighting staff responsibility regardless of working conditions. Originality/value: This study provides new insights into hospital managers' perspectives on how working conditions influence nursing staff's infection prevention behaviours and the strategies managers use to support compliance. Unlike prior research focused on frontline staff, this reflexive thematic analysis highlights the managers' role in balancing organisational support with staff accountability, offering valuable insights into infection control in complex healthcare environments.

---

4. **Implementation of infection prevention and control strategies in Italian intensive care units: results from the SPIN-UTI network**

Authors: Barchitta, Martina;Maugeri, Andrea;Campisi, Elisabetta;Di Liberto, Erminia;Favara, Giuliana;Magnano San Lio, Roberta;D'Ancona, Fortunato and Agodi, Antonella

Publication Date: 2025

Journal: Antimicrobial Resistance and Infection Control 14(1), pp. 146

Abstract: Competing Interests: Declarations. Ethics approval and consent to participate: The protocol for the analysis of these data was approved by the Ethics Committee ‘Catania 1’ (Catania, Italy) with the following Protocol numbers 111/2018/PO, 295/2019/EMPO, 277/2020/EMPO and 292/2022/EMPO. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.; Background: Healthcare-associated infections (HAIs) are a persistent challenge in intensive care units (ICUs), further aggravated by Antimicrobial Resistance (AMR). Although the World Health Organization (WHO) Infection Prevention and Control Assessment Framework (IPCAF) provides a standardized method to evaluate the Infection Prevention and Control (IPC) capacity, limited data are available on its application in Italy and its association with HAI incidence in ICUs. This study aimed to assess IPC implementation within the Italian Nosocomial Infections Surveillance in Intensive Care Units' network (Sorveglianza Prospettica delle Infezioni Nosocomiali nelle Unità di Terapia Intensiva, SPIN-UTI) using the WHO IPCAF tool, analyze its relationship with HAI and process indicators, and identify key barriers to effective IPC practices.; Methods: A cross-sectional analysis was conducted in 43 adult ICUs participating in the 2023 SPIN-UTI surveillance

programme. Data on HAIs and IPC-related process indicators were collected alongside IPCAF assessments and a targeted survey on implementation barriers. Descriptive statistics, Spearman's correlation, and Kolmogorov-Smirnov tests were used for analysis.; Results: IPCAF total scores, calculated for each ICU, ranged from 350.0 to 782.5 (median: 610.0), with 51.2% of ICUs achieving an advanced IPC level. The lowest scores were observed in education, monitoring, and multimodal strategies domains. Common barriers included inadequate human and financial resources. A significant inverse correlation was found between IPCAF scores and the number of reported barriers ($\rho = -0.583$; $p < 0.001$). No significant associations were found between IPCAF scores and HAI incidence, except for a positive correlation between HAI surveillance domain scores and central line-associated bloodstream infections rates (CLABSIs) ($\rho = 0.424$; $p = 0.016$). Strong positive correlations emerged between IPCAF domains and key process indicators, such as antimicrobial stewardship, oral decontamination, and catheter care.; Conclusions: The study shows substantial variability in IPC implementation across Italian ICUs and identifies key areas for improvement. While higher IPCAF scores correlate with better adherence to preventive practices, they do not directly predict HAI rates, possibly due to differences in surveillance sensitivity, lack of correlation with actual incidence, or the subjective nature of IPCAF responses. Strengthening education, staffing, monitoring and feedback systems is essential to enhance IPC effectiveness and patient safety. (© 2025. The Author(s).)

---

5. **Model-based methods for hospital infection prevention and control: potential and challenges**

Authors: Bridgen, Jessica R. E.;Jewell, Chris;Lewis, Joseph M.;Todd, Stacy;Semple, Malcolm G.;Feasey, Nicholas and Read, Jonathan M.

Publication Date: 2025

Journal: BMC Global and Public Health 3(1), pp. 111

---

6. **Relaunch of an electronic monitoring system to sustain hand hygiene observations and compliance: A quality improvement study**

Authors: Brooks, Ashley M.;Roettger, William C.;Bates, Alexandra N.;Schultz, Kristin J.;Krier, Brad A.;Bhandari, Pawan and Anil, Gokhan

Publication Date: 2025

Journal: American Journal of Infection Control 53(12), pp. 1330–1336

Abstract: Hand hygiene (HH) can help prevent infections in health care settings. Our hospital implemented an electronic HH monitoring system (EHHMS) in fall 2021 to increase HH compliance. Initial improvements decreased below established goals over time. This quality improvement study aimed to determine the effectiveness of an EHHMS relaunch to achieve sustainable improvement in HH observations and compliance. HH observations were tracked based on staff entries and exits from patient rooms; HH compliance was the ratio of HH events over HH observations. The relaunch in February 2023 focused on standardization of expectations, leadership engagement, development of reference materials, and sharing

weekly data. During initial EHHMS implementation, the mean HH observations were 80.3 per patient-day, with HH compliance of 94.8%; HH observations then decreased to 63.0 per patient-day with 93.7% compliance. The relaunch resulted in significant sustained improvement, with 79.0 mean HH observations per patient-day (28.2% increase) and 94.6% HH compliance (P <.001). These gains were sustained throughout the following 18-month control period. Implementing an EHHMS improved HH compliance. Success depended on frontline leaders' buy-in, practical interventions, and continuous feedback. Future studies should explore long-term sustainability and broader effects. Sustained performance after EHHMS implementation requires a comprehensive plan. • Our institution noted decreased use of our electronic hand hygiene monitoring system. • Infection prevention and nurse leaders aimed to increase hand hygiene observations. • Weekly unit-level feedback reports helped foster ownership and transparency. • A feedback form to report issues improved troubleshooting and trust in the system. • Nurse managers were proactive in sustaining engagement and coaching frontline staff.

---

7. **A Before-and-After Study on Hand Hygiene Knowledge, Practices, and Environmental Cleanliness in an Anaesthesia Department Following Educational and Protocol Interventions**

Authors: Chen, Yi-Chun;Liu, Chieh-En;Wu, Yu-Ling;Yang, Chen-Hsien;Li, Jiun-Yi and Lin, Ying-Chun

Publication Date: 2025

Journal: The Journal of Hospital Infection

Abstract: Background: Hand hygiene is a key measure to prevent healthcare-associated infections, yet compliance remains low among anaesthesia staff. This study evaluated the impact of hand hygiene education and standardised cleaning protocols on knowledge, behaviour, and bacterial contamination in an anaesthesia department.; Methods: A before-and-after study was conducted over 10 months in a medical centre in northern Taiwan. Interventions included hand hygiene training, alcohol-based hand rubs, and cleaning with disinfectant wipes. Pre- and post-intervention assessments included knowledge questionnaires, hand cultures, adenosine triphosphate (ATP) bioluminescence, and environmental agar cultures.; Results: Following the intervention, significant improvements were observed in hand hygiene knowledge, particularly in areas such as the types of microorganisms effectively eliminated by alcohol-based hand rub, and the recommended duration for effective hand hygiene using both alcohol rub and soap and water ($p < 0.01$). The number of hands with negative bacterial growth from hand cultures increased from 1 pre-intervention to 9 post-intervention. Frequently isolated organisms included S. aureus, coagulase-negative staphylococci (CoNS), and gram-positive bacilli. ATP bioluminescence testing demonstrated significant reductions in contamination levels on multiple surfaces, including monitoring devices, the anaesthesia machine, work cart surfaces, computer, Bair Hugger control panel, and hands ($p < 0.05$).; Conclusion: Educational and environmental interventions can enhance hand hygiene compliance and reduce microbial contamination, supporting infection control in anaesthetic practice.

8. **Impact of enhanced infection control and antimicrobial stewardship on infections by Clostridioides difficile, vancomycin-resistant enterococci, and third-generation cephalosporin-resistant Enterobacterales: a stepped-wedge cluster intervention study**

Authors: Classen, Annika Y.;Dietz, Thilo;Graeff, Luisa Durán;Eisenbeis, Simone;Gastmeier, Petra;Göpel, Siri;Hoffmann, Armin;Hölzl, Florian;Käding, Nadja;Kern, Winfried V.;Kramme, Evelyn;Belmar Campos, Cristina;Maurer, Florian P.;Seifert, Harald;Meißner, Arne;Rohde, Anna M.;Rohde, Holger;Rupp, Jan;Tacconelli, Evelina;Walker, Sarah V., et al

Publication Date: 2025

Journal: Clinical Microbiology and Infection : The Official Publication of the European Society of Clinical Microbiology and Infectious Diseases 31(12), pp. 2025–2032

Abstract: Objectives: Infection prevention and control (IPC) and antimicrobial stewardship (AMS) measures are critical to reducing transmission and infection by Clostridioides difficile (CDI) and other enteric pathogens. This study evaluated the impact of enhanced IPC and AMS on CDI and bloodstream infections (BSIs) caused by vancomycin-resistant enterococci (VRE) and third-generation cephalosporin-resistant Enterobacterales (3GCREB).; Methods: The study was conducted in five German university hospitals from January 2016 to July 2019. IPC and AMS interventions were sequentially enhanced in three departments with high-incidence CDI at baseline using a stepped-wedge cluster intervention approach. Main outcome measures were incidence densities of CDI and BSI caused by VRE and 3GCREB. An interrupted time series analysis was performed to assess the intervention effects during a normalized study period.; Results: Across 15 departments, >384,000 patient days were included. Incidence density of target infections was low (CDI, 0.77; VRE BSI, 0.07; and 3GCREB BSI, 0.09 per 1000 patient days). Pooled interrupted time series analysis results showed a significant reduction in CDI incidence density following the enhancement of AMS measures (AMS period regression slopes difference, -0.089; Fp] = 5.400 0.037]). Regarding the incidence density of VRE/3GCREB BSI, no relevant changes could be observed (regression slopes difference, -0.19; Fp] = 0.667 0.429]). A subgroup analysis focusing on haematological and oncological departments showed that AMS influenced prescription behaviour according to implemented AMS strategies, but not clinical outcomes.; Discussion: Combined with IPC enhanced short-term AMS measures led to a significant reduction in the incidence of CDI, whereas the incidence of BSI by VRE and 3GCREB remained unchanged in sites with well-established baseline IPC and AMS programmes and low incidence of hospital-associated infections.

---

9. **Development and validation of an Operating Room Ventilation System Assessment (ORVSA) tool: A comprehensive checklist for surgical site infection prevention**

Authors: Hashemi, Mohammad;Jafari, Saeed;Mokarami, Hamidreza;Omidvar, Amir and Damiri, Zabiholla

Publication Date: 2025

Journal: American Journal of Infection Control 53(12), pp. 1265–1272

Abstract: Surgical site infections (SSIs) can lead to increased mortality rates, extended hospital stays, and higher health care costs. Application of an effective operating room (OR) ventilation system is a crucial prevention strategy for SSIs, but standardized assessment tools are lacking. A mixed-methods sequential exploratory design was used. The qualitative phase included literature and standards review and expert panel discussions to identify key domains and items. The quantitative phase assessed psychometric properties, including content validity and reliability. Sixty-four ORs across 7 hospitals were evaluated. The ORVSA (Operating Room Ventilation System Assessment) tool comprises 7 domains and 44 items, covering ventilation type, exhaust systems, managerial factors, standard criteria, filtration, air handling units, and anesthetic gas management. The tool demonstrated excellent content validity (mean CVI = 0.959, mean CVR = 0.936) and high reliability (Cohen's Kappa coefficient = 0.963, test-retest reliability = 0.949). Validation of the tool's items by a qualified and heterogeneous expert panel, demonstrating high relevance, simplicity, and clarity, and consistent inter-rater correlations confirm the tool's validity in accurately measuring its intended purpose. The ORVSA tool provides a comprehensive and user-friendly method for assessing OR ventilation systems, ensuring compliance with standards and identifying areas for improvement. Its strong psychometric properties make it a valuable resource for reducing SSIs and enhancing patient safety. • A new tool was developed assessing the operating room ventilation systems. • The assessment tool consists of seven domains and 44 items. • The tool was developed with expert input across multiple hospitals. • The high content validity and reliability demonstrate its real applicability.

---

10. **Efficacy of the Web-Based Gamified Infection Control Training System on Practices for Health Care Workers in Residential Care Homes: Clustered Randomized Controlled Trial**

Authors: Leung, Angela Y. M.;Leung, Doris Y. P.;Lau, Terence K.;Liu, Justina Y. W.;Cheung, Teris;Cheung, Daphne S. K.;Lam, Simon C.;Wong, Eliza M. L.;Tse, Mimi M. Y. and Molassiotis, Alex

Publication Date: 2025

Journal: JMIR Serious Games 13, pp. e71593

Abstract: Background: Staff working in residential care homes (RCHs) have played a significant role in preventing the spread of infection among residents, visitors, and staff. Providing continuous professional training to the staff is essential. Current infection control training mostly rests on short educational talks or one-to-one reminders in the RCHs. A blended mode of online interactive games and face-to-face consultations was now proposed as a new way to conduct infection control training in the RCHs.; Objective: This study aims to assess the efficacy of the Blended Gaming COVID-19 Training System (BGCTS) on infection control practices and self-reported knowledge, attitude, and practices of standard precautions among health care workers in RCHs.; Methods: A 2-arm, single-blinded, parallel cluster randomized controlled trial was designed, and 30 RCHs were recruited and randomized into an intervention group to receive the BGCTS and a control group to receive usual care on infection control training. Due to the COVID-19 pandemic and infected cases in the homes, 17 RCHs refused or delayed the on-site observations. The BGCTS intervention, developed based on "The COVID-19 Risk Communication Package for Healthcare Facilities" of the World Health

Organization, consists of two parts: (1) an eHealth mode of a 120-minute web-based training system covering 8 topics, delivered in short-clip videos and games, and (2) two 30-minute face-to-face interactive sessions for concept clarification. The 2 infection control practices, "use of gloves and personal protective equipment (PPE) and performing respiratory hygiene" and "hand rub," were assessed by on-site unobtrusive observations, and self-reported infection control practices and knowledge and attitude toward infection control were measured via online survey post intervention.; Results: A total of 212 staff from 13 RCHs were involved in the analysis, with 7 RCHs from the intervention group (n=114) and 6 RCHs from the control group (n=98). A significantly greater increase in the proportions of proper use of gloves and PPE and respiratory hygiene performance (β=.195, 95% CI 0.046-0.344; P=.02) and properly performed hand rub (β=.068, 95% CI 0.005-0.132; P=.04) was observed in the intervention group. The changes in the self-reported outcomes were not statistically significant.; Conclusions: BGCTS improved RCH staff's performance in 2 infection control practices by objective measurement, "gloves and PPE use and performance in respiratory hygiene" and "hand rub." BGCTS was shown to be an effective training, although it was a 2-week intervention. The BGCTS did not perform better than infection control briefing sessions in self-reported infection control knowledge, attitude, and practices. This electronic-based infection control training with 2 intensive interactive sessions has good potential to be adopted as regular training in RCHs.; Trial Registration: Clinicaltrials.gov NCT04783025; http://clinicaltrials.gov/ct2/show/NCT04783025.

---

11. **A Cost-Utility Analysis of Surgical Site Infection Prevention: Broadening the Scope**

Authors: McFarland, Agi;Manoukian, Sarkis;Mason, Helen and Reilly, Jacqui

Publication Date: 2025

Journal: Applied Health Economics and Health Policy

Abstract: Background: Surgical site infections (SSI) present a significant burden in terms of excess length of stay, distress, disability and death. SSI risk and the associated economic burden may be reduced through programmes of infection prevention and control (IPC) although evidence of their cost-effectiveness is limited. Patient-level data from the Evaluation of Cost of Nosocomial Infection (ECONI) study provided opportunity for analysis.; Aim: The aim of this study is to explore the cost-effectiveness of enhanced SSI prevention in terms of costs and quality of life for adult surgical patients in the UK National Health Service (NHS).; Methods: A Monte Carlo microsimulation model was built to evaluate the cost-effectiveness cost per quality-adjusted life years (QALY)] of SSI prevention in three surgery types (coronary artery bypass graft, hip arthroplasty and caesarean section) by comparing an enhanced programme of SSI IPC to current clinical sequelae over 1 month and 1 year in the NHS. Uncertainty was explored through probabilistic sensitivity analysis, scenario analysis and the use of alternative utility valuation sets.; Results: In most surgeries and time points, enhanced IPC was associated with lower costs and higher QALY gains than current SSI IPC measures. The results were sensitive to utility valuation methods used. Scenario analyses identified factors relating to SSI rate, IPC programme efficacy and cost resulted in strategy dominance

changes over all three surgery types.; Conclusions: Enhanced programmes of IPC for SSIs may deliver improved health outcomes at a lower cost; however, this is not consistent across all surgery types and timepoints and is sensitive to various factors. (© 2025. The Author(s), under exclusive licence to Springer Nature Switzerland AG.)

---

12. **New Hand Hygiene Guidelines From WHO and UNICEF**

Authors: Pant, Shravya

Publication Date: 2025

Journal: JAMA 334(21), pp. 1876

---

13. **Infection Prevention Approaches for Clostridioides difficile**

Authors: Vance, Jesse and Turner, Nicholas A.

Publication Date: 2025

Journal: Infectious Disease Clinics of North America 39(4), pp. 685–707

Abstract: Competing Interests: Disclosure Dr Vance reports no relevant conflicts of interest. Dr Turner reports grants to his institution through the CDC, United States (including on C. difficile epidemiology and infection prevention), the NIH, and research contracts with PDI and Purio (including for conduct of microbiologic efficacy studies of cleaning products).; Clostridioides difficile prevention is challenging as spores are highly resilient and transmission sources diverse. Hand hygiene, contact precautions, and environmental decontamination are fundamental infection prevention strategies. Antimicrobial stewardship is highly effective at reducing C difficile risk at both the individual and institutional level. Supplemental control measures such as no-touch disinfection technologies and screening/isolation of carriers are generally reserved for situations in which fundamental control measures prove insufficient. Reducing host vulnerability through immunization, prophylactic antibiotics directed against C difficile, or products that protect/augment the microbiome may offer promise in the future. (Copyright © 2025 Elsevier Inc. All rights reserved.)