

Infection Control Update 8



21 May 2020

Welcome to the latest copy of the Infection Control Update. The aim of this publication is to bring together a range of recently-published research and guidance that will help you make evidence based decisions.

Accessing Articles

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Please send your feedback, suggestions for the update or further evidence searches to holly.cook3@nhs.net.

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Full strategy



1. MENINGOCOCCAL VACCINE REDUCES DISEASE BY ALMOST TWO-THIRDS

Author(s): Anonymous

Source: Community Practitioner; 2020; vol. 93 (no. 2); p. 9

Publication Date: 2020

Publication Type(s): News

Available at [Community Practitioner](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: Infant vaccination against group B meningococcal disease (MenB) has significantly reduced the number of cases of the disease in young children, research by Public Health England shows. The study, published in The New England Journal of Medicine, shows that by the third year of the program, cases of MenB disease were 62% lower in children who were eligible for at least two doses of the vaccine. Between 2015 and 2018, an estimated 277 out of an expected 446 cases were prevented because of the program.

Database: BNI

2. Antibacterial Surfaces with Activity against Antimicrobial Resistant Bacterial Pathogens and Endospores.

Author(s): Sehmi, Sandeep K; Lourenco, Claudio; Alkhuder, Khaled; Pike, Sebastian D; Noimark, Sacha; Williams, Charlotte K; Shaffer, Milo S P; Parkin, Ivan P; MacRobert, Alexander J; Allan, Elaine

Source: ACS infectious diseases; May 2020; vol. 6 (no. 5); p. 939-946

Publication Date: May 2020

Publication Type(s): Journal Article

PubMedID: 32126763

Abstract: Hospital-acquired bacterial infections are a significant burden on healthcare systems worldwide causing an increased duration of hospital stays and prolonged patient suffering. We show that polyurethane containing crystal violet (CV) and 3-4 nm zinc oxide nanoparticles (ZnO NPs) possesses excellent bactericidal activity against hospital-acquired pathogens including multidrug resistant Escherichia coli (E. coli), Pseudomonas aeruginosa, methicillin-resistant Staphylococcus aureus (MRSA), and even highly resistant endospores of Clostridioides (Clostridium) difficile. Importantly, we used clinical isolates of bacterial strains, a protocol to mimic the environmental conditions of a real exposure in the healthcare setting, and low light intensity equivalent to that encountered in UK hospitals (~500 lux). Our data shows that ZnO NPs enhance the photobactericidal activity of CV under low intensity light even with short exposure times, and we show that this involves both Type I and Type II photochemical pathways. Interestingly, polyurethane containing ZnO NPs alone showed significant bactericidal activity in the dark against one strain of E. coli, indicating that the NPs possess both light-activated synergistic activity with CV and inherent bactericidal activity that is independent of light. These new antibacterial polymers are potentially useful in healthcare facilities to reduce the transmission of pathogens between people and the environment.

Database: Medline

3. Systematic literature review of the burden and outcomes of infections due to multidrug-resistant organisms in Europe: the ABOUT-MDRO project protocol.

Author(s): Anaya-Baz, Blanca; Maldonado, Natalia; Palacios-Baena, Zaira R; Palomo, Virginia; Pezzani, Maria Diletta; Chiesi, Sheila; Razzaboni, Elisa; Compri, Monica; Tacconelli, Evelina; Rodriguez-Baño, Jesús

Source: BMJ open; May 2020; vol. 10 (no. 5); p. e030608

Publication Date: May 2020

Publication Type(s): Journal Article



PubMedID: 32371505

Available at [BMJ open](#) - from BMJ Journals

Available at [BMJ open](#) - from Europe PubMed Central - Open Access

Available at [BMJ open](#) - from HighWire - Free Full Text

Available at [BMJ open](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMJ open](#) - from Unpaywall

Abstract:

INTRODUCTION: Despite the increasing importance of infections due to multidrug-resistant organisms (MDROs), there is a lack of comprehensive information about the burden of disease and outcomes of key infections caused by these pathogens. The aim of the ABOUT-MDRO (A systematic review on the burden and outcomes of infections due to multidrug resistant organisms) project is to provide estimations of the burden of some key infections and their outcomes caused by the target MDROs.

METHODS AND ANALYSIS: A systematic literature search will be performed using MEDLINE/PubMed, Elsevier's SCOPUS, Cochrane library, Clinical trials and Web of Science, as well as the Surveillance Systems from Public Health Institutions and Scientific Societies for Antimicrobial Resistance and Healthcare-Associated Infections in Europe database of European surveillance systems, for data on prevalence/incidence, mortality and length of stay of target infections in hospitalised patients (including ventilator-associated pneumonia, hospital-acquired pneumonia, complicated intra-abdominal infections, complicated urinary tract infections, skin and soft tissue infections and bloodstream infections) and in specific populations (children, hospital wards, neutropenic patients) caused by cephalosporin-resistant or carbapenem-resistant Enterobacteriaceae, carbapenem-resistant *Pseudomonas aeruginosa* and *Acinetobacter* spp., methicillin-resistant *Staphylococcus aureus*, and vancomycin-resistant *Enterococcus* spp. The information retrieved will be tabulated and pooled estimates and 95% CIs calculated of rates and outcomes, using random effects models. Relationships between rates and outcomes in randomised control trials and epidemiological studies, and data of proportions and incidence/prevalence rates will also be analysed. The information collected in this study will be useful for identifying gaps in our knowledge in terms of incidence/prevalence and clinical outcomes of infections caused by MDROs, and for informing priorities in infection control and the research and design of appropriate studies.

ETHICS AND DISSEMINATION: This study will be based on published data so we did not require ethical approval. Formal consent is not required. The results of this review will be reported according to the Preferred Reporting Items for Systematic Review and Meta-Analyses statement. Data will be presented at international conferences and published in peer-reviewed journals.

REGISTRATION DETAILS: PROSPERO (<https://www.crd.york.ac.uk/prospero/>) (CRD42019124185).

Database: Medline

4. Universal screening versus risk-based protocols for antibiotic prophylaxis during childbirth to prevent early-onset group B streptococcal disease: a systematic review and meta-analysis

Author(s): Hasperhoven, G F; S Al-Nasiry; Bekker, V; Villamor, E; Kramer, BWW

Source: BJOG; May 2020; vol. 127 (no. 6); p. 680

Publication Date: May 2020

Publication Type(s): Journal Article Evidence Based Healthcare

Available at [BJOG : an international journal of obstetrics and gynaecology](#) - from Wiley Online Library

Available at [BJOG : an international journal of obstetrics and gynaecology](#) - from Unpaywall

Abstract:

Background: Early-onset group B streptococcal (EOGBS) disease (including sepsis, meningitis, and pneumonia) causes significant morbidity and mortality in newborn infants worldwide. Antibiotic prophylaxis can prevent vertical streptococcal transmission, yet no uniform criteria exist to identify eligible women for prophylaxis. Some guidelines



recommend universal GBS screening to pregnant women in their third trimester (screening-based protocol), whereas others employ risk-based protocols.

Objectives: To compare the effectiveness of screening-based versus risk-based protocols in preventing EOGBS disease.

Search strategy: Key words for the database searches included GBS, *Streptococcus agalactiae*, pregnancy, screening, culture-based, risk-based.

Selection criteria: Studies were included if they investigated EOGBS disease incidence in newborn infants and compared screening or risk-based protocols with each other or with controls.

Data collection and analysis: Risk ratios (RR) and 95% confidence intervals (CI) were determined using Mantel-Haenszel analyses with random effects.

Main results: Seventeen eligible studies were included. In this meta-analysis, screening was associated with a reduced risk for EOGBS disease compared either with risk-based protocols (ten studies, RR 0.43, 95% CI 0.32–0.56) or with no policy (four studies, RR 0.31, 95% CI 0.11–0.84). Meta-analysis could not demonstrate a significant effect of risk-based protocols versus no policy (seven studies, RR 0.86, 95% CI 0.61–1.20). In studies reporting on the use of antibiotics, screening was not associated with higher antibiotic administration rates (31 versus 29%).

Conclusions: Screening-based protocols were associated with lower incidences of EOGBS disease compared with risk-based protocols, while not clearly overexposing women to antibiotics. This information is of relevance for future policymaking.

Tweetable abstract: Meta-analysis: general screening is associated with lower rates of early-onset group B strep. neonatal sepsis compared with risk-based protocols.

Database: BNI

5. Using Ultraviolet Light Technology to Enhance Cleaning in Health Care Settings

Author(s): Sunshine, Wendy Lyons, MA

Source: AORN Journal; May 2020; vol. 111 (no. 5); p. 486

Publication Date: May 2020

Publication Type(s): Journal Article

Abstract: Ultraviolet (UV) light is an energy-rich waveform that exists on the electromagnetic radiation spectrum between visible light and x-rays.¹ One type of UV light, UV-B, stimulates vitamin D production in the human body and contributes to sunburn and skin cancer.¹⁻³ The most potent type of UV light, UV-C, has wavelengths of approximately 220 to 290 nanometers (nm).¹ This high-energy frequency is invisible to the human eye and can damage genetic material inside living cells. Because of its disruptive effect on nucleic acids vital to cell reproduction,⁴ health care workers can use UV-C technology to clean patient areas.⁵ Disinfection using UV-C has shown promise for deactivating certain resistant pathogens, speeding cleaning times, and helping to optimize cleaning practices.⁵ In an effort to prevent health care-associated infections (HAIs) and the spread of multidrug-resistant pathogens, hospital and perioperative leaders have begun using UV-C disinfection as an adjunct to existing cleaning protocols. Disinfection devices generally use one of three types of UV-C light: pulsed xenon, light-emitting diode (LED), or mercury. * Because all wavelengths of light do not eliminate microorganisms equally, pulsed xenon ultraviolet (PX-UV) light systems produce pulses of both UV-B and germicidal UV-C light waves from a xenon lamp.⁷ * Light-emitting diode bulbs deliver precisely calibrated and focused UV-C rays with a small amount of electricity.⁸ The LED bulbs have a selectable wavelength (meaning they can deliver 250 to 300 nm), are energy efficient, and operate at relatively cool temperatures. Because LED bulbs have a targeted focus, reflectors may be necessary to increase coverage. The results of a 2019 blinded study in a hospital in Ecuador found that when compared with manual cleaning and disinfection, CFU counts on high-touch surfaces in the OR decreased 87% ($P < .001$) after PX-UV disinfection.¹⁴ Also in 2019, Italian researchers compared the differences in contamination after cleaning and disinfecting with chlorine-based chemical agents (ie, the standard process) and contamination after the standard process with additional disinfection using PX-UV-C.¹⁵ They found 72 (63%) of 115 samples were positive for contamination after the standard process alone, but only 15 (18%) of 85 were positive after adding the PX-UV-C



treatment. In 2018, frustrated by the difficulty of objectively evaluating commercially available UV-C options, a group of university and hospital researchers from Iowa and Quebec, Canada, studied two low-cost methods to make an apples-to-apples comparison among technologies.⁶ The researchers examined the following * Two larger devices with price points from \$45,000 to \$90,000 per unit, suitable for patient room disinfection.

Database: BNI

6. Genomic Surveillance of Methicillin-resistant Staphylococcus aureus: A Mathematical Early Modeling Study of Cost-effectiveness.

Author(s): Dymond, Amy; Davies, Heather; Mealing, Stuart; Pollit, Vicki; Coll, Francesc; Brown, Nicholas M; Peacock, Sharon J

Source: Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Apr 2020; vol. 70 (no. 8); p. 1613-1619

Publication Date: Apr 2020

Publication Type(s): Journal Article

PubMedID: 31219153

Available at [Clinical infectious diseases : an official publication of the Infectious Diseases Society of America](#) - from Unpaywall

Abstract:

BACKGROUND: Genomic surveillance of methicillin-resistant Staphylococcus aureus (MRSA) identifies unsuspected transmission events and outbreaks. Used proactively, this could direct early and highly targeted infection control interventions to prevent ongoing spread. Here, we evaluated the cost-effectiveness of this intervention in a model that compared whole-genome sequencing plus current practice versus current practice alone.

METHODS: A UK cost-effectiveness study was conducted using an early model built from the perspective of the National Health Service and personal social services. The effectiveness of sequencing was based on the relative reduction in total MRSA acquisitions in a cohort of hospitalized patients in the year following their index admissions. A sensitivity analysis was used to illustrate and assess the level of confidence associated with the conclusions of our economic evaluation.

RESULTS: A cohort of 65 000 patients were run through the model. Assuming that sequencing would result in a 90% reduction in MRSA acquisition, 290 new MRSA cases were avoided. This gave an absolute reduction of 28.8% and avoidance of 2 MRSA-related deaths. Base case results indicated that the use of routine, proactive MRSA sequencing would be associated with estimated cost savings of over £728 290 per annual hospitalized cohort. The impact in total quality-adjusted life years (QALYs) was relatively modest, with sequencing leading to an additional 14.28 QALYs gained. Results were most sensitive to changes in the probability of a MRSA-negative patient acquiring MRSA during their hospital admission.

CONCLUSIONS: We showed that proactive genomic surveillance of MRSA is likely to be cost-effective. Further evaluation is required in the context of a prospective study.

Database: Medline

7. Factors affecting reported Clostridioides difficile infection rates; the more you look the more you find, but should you believe what you see?

Author(s): Davies, Kerrie; Davis, Georgina; Barbut, Frédéric; Eckert, Catherine; Petrosillo, Nicola; Pisapia, Raffaella; Gärtner, Barbara; Berger, Fabian K; Reigadas, Elena; Bouza, Emilio; Demont, Clarisse; Wilcox, Mark H

Source: Anaerobe; Apr 2020; vol. 62 ; p. 102178

Publication Date: Apr 2020

Publication Type(s): Journal Article



PubMedID: 32092415

Abstract: Reported rates of *C. difficile* infection (CDI) have increased in many settings; however, these can be affected by factors including testing density (test-density) and diagnostic methods. We aimed to describe the impact of multiple factors on CDI rates. Hospitals (n = 182) across five countries (France, Germany, Italy, Spain, and UK) provided data on; size and type of institution, CDI testing methodology, number of tests/month and patient-bed-days (pbds)/month over one year. Incidence rates were compared between countries, different sized institutions, types of institutions and testing method. After univariate analyses, the highest CDI rates were observed in Italy (average 11.8/10,000pbds/hospital/month), acute/primary hospitals (12.3/10,000pbds/hospital/month), small hospitals (16.7/10,000pbds/hospital/month), and hospitals using methods that do not detect toxin (NO-TOXIN) (e.g. GDH/NAAT or standalone NAAT) (10.7/10,000pbds/hospital/month). After adjusting for test-density, highest incidence rates were still in Italy, acute/primary hospitals and those using NO-TOXIN. The relative rate in long-term healthcare facilities (LTHCFs) increased, but size of institution no longer influenced the CDI rate. Test-density appears to have the largest effect on reported CDI rates. NO-TOXIN testing still influences CDI rates, even after adjusting for test-density, which is consistent with tests that 'overcall' true CDI. Low test-density can mask the true burden of CDI, e.g. in LTHCFs, highlighting the importance of good quality surveillance.

Database: Medline

8. Considerations for Reprocessing Semicritical Devices

Author(s): Spruce, Lisa, DNP, RN, CNS-CP, CNOR, ACNS, ACNP, FAAN

Source: AORN Journal; Apr 2020; vol. 111 (no. 4); p. 453

Publication Date: Apr 2020

Publication Type(s): Journal Article

Abstract: According to the Spaulding recommendations, personnel should consider items that contact mucous membranes or nonintact skin as semicritical devices and complete processing with HLD or sterilization.² High-level disinfection processes can be inadequate, especially in ambulatory care centers and decentralized locations in hospitals.³ When a failure in HLD processing occurs, the contaminated medical or surgical device can transmit pathogens to patients and health care workers. [...]outbreaks of infectious microorganisms (eg, HIV, hepatitis B and C, *Pseudomonas aeruginosa*, *Escherichia coli*, methicillin-resistant *Staphylococcus aureus*) may occur and cause patient harm.³ CAUSES OF INADEQUATE SEMICRITICAL DEVICE PROCESSING Some semicritical items (eg, flexible endoscopes) may carry a heavy microbial load and be difficult to clean and disinfect because they contain long, narrow channels and lumens.¹ Current HLD processes may not adequately disinfect all items that enter sterile tissue via a mucous membrane.¹ For example, endocavity ultrasound probes are semicritical items that contact mucosal tissue and therefore require HLD at a minimum.⁴ In addition, ultrasound probes covered with a sheath during use can retain pathogenic microorganisms when personnel do not use HLD or sterilization methods after cleaning.¹ (p303) Staff members should adhere to the manufacturer's instructions for use because manufacturers are responsible for ensuring reusable devices can be cleaned and for providing validated cleaning instructions.⁵ To assist with removing soil that may be resistant to HLD, personnel should preclean devices at the point of use according to the manufacturer's recommendations.^{1,6} In addition, personnel must transport precleaned devices in a closed container or cart that is leakproof, punctureresistant, large enough to contain all contents, and labeled with a bright red or orange biohazard sign.⁷ To aid with disinfection and prevent inadvertent damage, staff members should ensure the items remain wet or damp without submerging them in liquid.^{1,6} After staff members transport devices to the decontamination area, personnel should perform any required leak testing to help detect device breaches and ensure the device's integrity.^{1,6} Decontamination personnel should then clean the devices according to the manufacturer's instructions.

Database: BNI

9. Vancomycin therapeutic drug monitoring in paediatrics

Author(s): Patel, Joanne; Lucas, Catherine J; Ryan, Jessica; Jenkins, Michelle; Martin, Jennifer H



Source: Journal of Paediatrics and Child Health; Apr 2020; vol. 56 (no. 4); p. 563

Publication Date: Apr 2020

Publication Type(s): Journal Article

Available at [Journal of Paediatrics and Child Health](#) - from Wiley Online Library

Abstract:

Aim: Vancomycin guidelines for therapeutic drug monitoring (TDM) aim to maximise efficacy while minimising toxicity and resistance. Vancomycin is effective against *Staphylococcus aureus* when it achieves area under the concentration–time curve (AUC)/minimum inhibitory concentration (MIC) > 400. Studies in children have shown that target trough concentrations poorly correlate to AUC/MIC > 400; however, they are used in practice for clinical convenience. This review in paediatric inpatients aims to audit performance against TDM guidelines and consider what changes are needed to optimise vancomycin monitoring.

Methods: Vancomycin prescriptions in patients younger than 18 years old were collected over a 15-month period. Primary outcome measures were vancomycin initial dose (mg/kg/day) and the timing and result of first trough concentration (mg/L). Secondary outcome measures were the numbers achieving recommended targets and whether appropriate dose adjustments were made in response to TDM.

Results: A total of 133 courses reached the time when TDM should occur. Average patient age was 6.5 years, and the average initial dose was 52.55 mg/kg/day (range 19.05–86.54 mg/kg). Only 25% of courses (n = 34) had a trough concentration measured at the recommended time. The mean trough concentration was 11.6 mg/L (range < 2.0–39.7). Of 40 patients with a low trough concentration, 50% continued without dose adjustment.

Conclusion: As shown in the literature, there is a poor correlation between the vancomycin dose given and the trough concentration achieved. Given that recommendations for trough concentration monitoring are designed to simplify the process yet are poorly adhered to, a strategic plan to address these issues is needed.

Database: BNI

10. Comparison of Centor and Mclsaac scores in primary care: a meta-analysis over multiple thresholds

Author(s): Willis, Brian H; Coomar, Dyuti; Baragilly, Mohammed

Source: The British Journal of General Practice : The Journal of the Royal College of General Practitioners; Apr 2020; vol. 70 (no. 693); p. e245

Publication Date: Apr 2020

Publication Type(s): Evidence Based Healthcare Journal Article

Available at [British Journal of General Practice](#) - from EBSCO (MEDLINE Complete)

Available at [British Journal of General Practice](#) - from Unpaywall

Abstract:

Background: Centor and Mclsaac scores are both used to diagnose group A beta-haemolytic streptococcus (GABHS) infection, but have not been compared through meta-analysis.

Aim: To compare the performance of Centor and Mclsaac scores at diagnosing patients with GABHS presenting to primary care with pharyngitis.

Design and setting: A meta-analysis of diagnostic test accuracy studies conducted in primary care was performed using a novel model that incorporates data at multiple thresholds.

Method: MEDLINE, EMBASE, and PsycINFO were searched for studies published between January 1980 and February 2019. Included studies were: cross-sectional; recruited patients with sore throats from primary care; used the Centor or Mclsaac score; had GABHS infection as the target diagnosis; used throat swab culture as the reference standard; and reported 2 × 2 tables across multiple thresholds. Selection and data extraction were conducted by two independent reviewers. QUADAS-2 was used to assess study quality. Summary receiver operating characteristic (SROC) curves were synthesised. Calibration curves were used to assess the transferability of results into practice.

Results: Ten studies using the Centor score and eight using the Mclsaac score were included. The prevalence of



GABHS ranged between 4% and 44%. The areas under the SROC curves for Mclsaac and Centor scores were 0.7052 and 0.6888, respectively. The P-value for the difference (0.0164) was 0.419, suggesting the SROC curves for the tests are equivalent. Both scores demonstrated poor calibration.

Conclusion: Both Centor and Mclsaac scores provide only fair discrimination of those with and without GABHS, and appear broadly equivalent in performance. The poor calibration for a positive test result suggests other point-of-care tests are required to rule in GABHS; however, with both Centor and Mclsaac scores, a score of ≤ 0 may be sufficient to rule out infection.

Database: BNI

11. Addressing *S. aureus* Colonization in Parents to Protect NICU Neonates

Author(s): Zolot, Joan, PA

Source: The American Journal of Nursing; Apr 2020; vol. 120 (no. 4); p. 17

Publication Date: Apr 2020

Publication Type(s): Journal Article

Available at [The American journal of nursing](#) - from Unpaywall

Abstract: The staphylococcus. aureus pathogen is responsible for the majority of central line-associated bloodstream infections, surgical-site infections, and late-onset sepsis in neonates. Here, the effect of *S. aureus* colonization to life-threatening infection in vulnerable newborns in neonatal intensive care units (NICUs), is discussed. Prevention efforts by NICU staff have centered on reducing neonates' exposure to *S. aureus* from health care personnel and the NICU's physical environment. However, parents of neonates may also be a source of *S. aureus* colonization and infection. According to a recent study in peer-reviewed medical journal Journal of the American Medical Association (JAMA) showed that treating parents colonized with *S. aureus* significantly reduced the likelihood of *S. aureus* colonization in their infants.

Database: BNI

12. The Management of Postsurgical Wound Complications with Plasma Rich in Growth Factors: A Preliminary Series

Author(s): Anitua, Eduardo, PhD, MD; Pino, Ander, PhD

Source: Advances in Skin & Wound Care; Apr 2020; vol. 33 (no. 4); p. 202

Publication Date: Apr 2020

Publication Type(s): Journal Article

Available at [Advances in skin & wound care](#) - from Unpaywall

Abstract:

BACKGROUND: Postsurgical wound complications constitute a relevant public health issue because of their frequency. There is growing evidence regarding platelet-based autologous therapies that support their use in promoting cutaneous regeneration.

OBJECTIVE: To provide preliminary data regarding the potential benefit of plasma rich in growth factors (PRGF) in the management of postsurgical wound complications.

DESIGN: Three patients suffering from poorly healing severe full-thickness wounds were treated with either one or a combination of different formulations derived from their own blood: autologous clot, fibrin membrane, injectable plasma, or topical ointment. Different treatment protocols are described, and follow-up results are reported.

RESULTS: Within 4 to 12 months, the treated wounds healed completely with no signs of infection, tissue necrosis, or functional impairment. No adverse events were reported.

CONCLUSION: Additional clinical trials with long-term follow-up periods and larger patient populations are needed to establish the efficacy of PRGF technology. However, these preliminary findings suggest that PRGF merits further



randomized controlled studies exploring its capacity to accelerate re-epithelialization and restore functional integrity to cutaneous ulcers resulting from surgical complications.

Database: BNI

13. Methicillin resistant *Staphylococcus aureus* causing osteomyelitis in a tertiary hospital, Mwanza, Tanzania.

Author(s): Silago, Vitus; Mushi, Martha F; Remi, Boniface A; Mwayi, Alute; Swetala, Stephen; Mtemisika, Conjester I; Mshana, Stephen E

Source: Journal of orthopaedic surgery and research; Mar 2020; vol. 15 (no. 1); p. 95

Publication Date: Mar 2020

Publication Type(s): Journal Article

PubMedID: 32138758

Available at [Journal of orthopaedic surgery and research](#) - from BioMed Central

Available at [Journal of orthopaedic surgery and research](#) - from Europe PubMed Central - Open Access

Available at [Journal of orthopaedic surgery and research](#) - from EBSCO (MEDLINE Complete)

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Abstract:

BACKGROUND: Culture results of fluid/pus from sinuses or open wound are not reliable in establishing the causative agent of osteomyelitis due to the high chances of contamination of superficial contaminants. Bone fragments obtained during surgery have been recommended as ideal sample to establish pathogens causing osteomyelitis. This study investigated pathogens causing osteomyelitis among patients undergoing orthopedic surgical treatment at Bugando Medical Centre.

METHODS: A cross-sectional hospital-based study was conducted from December 2017 to July 2018 among 74 patients with osteomyelitis who underwent surgical treatments at Bugando Medical Centre, Mwanza, Tanzania. Bone fragments were collected using sterile 10 ml of in-house prepared brain heart infusion broth (Oxoid, UK) during surgery. Specimens were processed according to standard operating procedures within an hour of collection. Data were analyzed using STATA 13.0.

RESULTS: The median age of study participants was 12 with inter quartile range of 8-20 years. The majority 45 (60.8%) of participants were male. All 74 non-repetitive bone fragment specimens had positive culture, of which 17 had dual growth of bacteria resulting to 91 bacterial isolates. Out of 91 isolates, 63 (85.1%) were *Staphylococcus aureus* (*S. aureus*) of which 18 (28.6%) were confirmed to be methicillin resistant *Staphylococcus aureus* strains. Fever was significantly associated with Staphylococcal osteomyelitis (100% vs. 79.6%, $p = 0.029$).

CONCLUSION: About one third of cases of Staphylococcal osteomyelitis in the current study were caused by methicillin resistant *Staphylococcus aureus*. There is a need of tailoring antibiotic management of osteomyelitis based on culture and sensitivity results for the better treatment outcome of the patients.

Database: Medline

14. Introducing an oral care assessment tool with advanced cleaning products into a high-risk clinical setting.

Author(s): Chick, Angela; Wynne, Ahlam

Source: British journal of nursing (Mark Allen Publishing); Mar 2020; vol. 29 (no. 5); p. 290-296

Publication Date: Mar 2020

Publication Type(s): Journal Article

PubMedID: 32167815



Abstract: Poor oral hygiene is an important risk factor for the development of non-ventilator hospital-associated pneumonia (NV-HAP), which imposes a significant burden on the NHS. This study aimed to establish whether the use of a 24-hour oral care kit and an oral care assessment tool can meet the needs of patients on an acute stroke unit. In comparison with the same period the preceding year, the introduction of the oral care kit and assessment tool improved compliance with oral care by more than 4 times; the overall costs of antibiotics to treat NV-HAP patients fell by 79%, with the number of doses falling by 70%, and the mortality rate decreased from 27% to 20%. According to a survey of multidisciplinary team (MDT) members keeping oral care tools available at the point of use saved time, and the oral health of patients on the unit improved after the introduction of the oral care kit and assessment tool. Almost all MDT members would recommend the use of the kit over previous interventions.

Database: Medline

15. Negative pressure wound therapy in elective stoma reversal surgery: results of a UK district general hospital pilot.

Author(s): Shah, A P; Kurian, R; Leung, E

Source: The Journal of hospital infection; Mar 2020; vol. 104 (no. 3); p. 332-335

Publication Date: Mar 2020

Publication Type(s): Journal Article

PubMedID: 31738986

Abstract: The role of negative pressure wound therapy in stoma reversal surgery remains unknown. To evaluate this, a retrospective, non-randomized, single-institution, pilot study was conducted. Surgeon preference determined type of wound closure and application of the single-brand negative wound pressure device. No patient in the intervention group suffered wound complications, but five of the thirty-six patients in the control group suffered surgical site infection-related complications. Primary closure and negative pressure wound therapy use decreases wound complications in stoma reversal surgery, thereby alleviating the wound-management burden in hospitals and in the community. This has cost-saving implications, but further studies are needed.

Database: Medline

16. Evaluation of chromogenic selective agar (CHROMagar STEC) for the direct detection of Shiga toxin-producing Escherichia coli from faecal specimens.

Author(s): Jenkins, Claire; Perry, Neil T; Godbole, Gauri; Gharbia, Saheer

Source: Journal of medical microbiology; Mar 2020; vol. 69 (no. 3); p. 487-491

Publication Date: Mar 2020

Publication Type(s): Evaluation Study Journal Article

PubMedID: 31935188

Available at [Journal of medical microbiology](#) - from Unpaywall

Abstract: Shiga toxin-producing Escherichia coli (STEC) are zoonotic pathogens that cause symptoms of severe gastrointestinal disease, including haemolytic uraemic syndrome (HUS), in humans. Currently in England, STEC serotypes other than O157:H7 are not cultured at the local hospital laboratories. The aim of this study was to evaluate the utility of CHROMagar STEC for the direct detection of STEC from faecal specimens in a diagnostic setting, compared to the current reference laboratory method using PCR targeting the Shiga-toxin gene (stx) to test multiple colonies cultured on MacConkey agar. Of the 292 consecutive faecal specimens submitted to the Gastrointestinal Bacterial Reference Unit that tested positive for stx by PCR, STEC could not be cultured on MacConkey agar or CHROMagar STEC from 87/292 (29.8%). Of the 205 that were cultured, 106 (51.7%) were detected on both MacConkey agar and CHROMagar STEC and 99 (48.3%) were detected on MacConkey agar only. All 106 (100%) isolates that grew on CHROMagar STEC had the ter gene cassette, known to be associated with resistance to tellurite, compared to 13/99 (13.1%) that were not detected on CHROMagar STEC. CHROMagar STEC



supported the growth of 36/40 (90%) isolates harbouring stx2a or stx2d, the subtypes most frequently associated with progression to HUS. Of the 92 isolates harbouring eae, an important STEC virulence marker, 77 (83.7%) grew on CHROMagar STEC. CHROMagar STEC is a useful selective media for the rapid, near-patient detection of STEC that have the potential to cause HUS.

Database: Medline

17. Factors contributing to clinical nurse compliance with infection prevention and control practices: A cross-sectional study

Author(s): Kim, Hyunjung; Young Hui Hwang

Source: Nursing and Health Sciences; Mar 2020; vol. 22 (no. 1); p. 126

Publication Date: Mar 2020

Publication Type(s): Journal Article

Available at [Nursing & health sciences](#) - from Wiley Online Library

Abstract: Although healthcare-associated infection is preventable, low compliance with infection prevention and control practices has been a significant issue for hospitals. This study aimed to evaluate the knowledge, attitudes, perceived safe environment, and compliance of clinical nurses and to identify the factors contributing to compliance with infection prevention and control practices. A cross-sectional study was conducted with 197 nurses who worked in university hospitals in Korea. Data were collected using a self-administrated questionnaire. Nurses correctly answered 67.4% of the questions regarding infection prevention and control knowledge, with the lowest correct scores (55%) related to multidrug-resistant organisms. Nurses demonstrated favorable attitudes toward infection prevention and control (6.5 of 8) and favorable perceptions regarding safe environment (7.75 of 9). The overall compliance score was 87.41 of 100. Nurses' attitudes, perceived safe environment, and period of clinical experience had significant positive contributions to compliance. Among employment departments, the intensive care unit was associated with higher compliance. Our findings indicate that institutional support for safe environments should be combined with ongoing education for improving knowledge and attitudes of nurses, especially in general wards.

Database: BNI

18. Back to Basics 2.0: Surgical Attire

Author(s): Spruce, Lisa, DNP, RN, CNS-CP, CNOR, ACNS, ACNP, FAAN

Source: AORN Journal; Mar 2020; vol. 111 (no. 3); p. 349

Publication Date: Mar 2020

Publication Type(s): Journal Article

Available at [AORN Journal](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: Laundering Perioperative personnel should wear clean surgical attire in the semirestricted and restricted areas of the surgical suite to protect patients from exposure to microorganisms that could contribute to an SSI.² The Occupational Safety and Health Administration regulations indicate that personnel should remove surgical attire that is contaminated with blood, other body fluids, or other potentially infectious microorganisms immediately or as soon as feasible and retain the attire at the health care facility for laundering.³ At the end of their shift, all surgical personnel should leave their surgical attire at the health care facility for laundering. During a procedure, all the surgical team members' surgical attire becomes contaminated with blood. Because of patient care needs, Regina does not immediately change her surgical attire and continues to work with blood contamination on her scrub top and pants for the rest of her shift. In a study of the porosity, permeability, and particle transmission of a disposable bouffant hat, a disposable skull cap, and a freshly laundered cloth skull cap, researchers concluded that the disposable bouffant hat was more permeable to bacteria than either of the skull caps.⁹ However, the researchers also acknowledged that staff members' cloth hats may not always be laundered daily, and that an unlaundered cloth hat possibly could lead to airborne contamination of the surgical suite.⁹ The available research also indicates that



the ears can be a source of bacteria, but currently there is no documented association between SSI rates and covering the ears.² Ear piercings also can be a source of cross contamination between the ears and hands and contribute to SSIs.¹⁰ An interdisciplinary team that includes members of the surgical team and infection preventionists should determine the type of head covers that will be worn at the health care facility.² **KNOWLEDGE CHECK** Robert, a surgical technologist, works in a health care facility that requires all perioperative team members to wear a bouffant head covering with complete ear coverage. The researchers recommended covering the arms with long sleeves during preoperative patient skin antisepsis. Because this was a simulated OR environment, additional research in live surgery settings is needed to determine the effect of covering the arms on SSI rates and any patient-related outcomes.

Database: BNI

19. Study of Culture and Sensitivity Patterns of Urinary Tract Infections in Patients Presenting with Urinary Symptoms in a Tertiary Care Hospital.

Author(s): Muzammil, Muhammad; Adnan, Muhammad; Sikandar, Sheikh Muhammad; Waheed, Muhammad Umar; Javed, Naseem; Ur Rehman, Muhammad Fazal

Source: Cureus; Feb 2020; vol. 12 (no. 2); p. e7013

Publication Date: Feb 2020

Publication Type(s): Journal Article

PubMedID: 32211249

Available at [Cureus](#) - from Europe PubMed Central - Open Access

Available at [Cureus](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Cureus](#) - from Unpaywall

Abstract:

Objective: To study the culture and sensitivity patterns of urinary tract infections in patients presenting with urinary symptoms in a tertiary care hospital.

Study design: A cross-sectional study. Place and duration of the study The departments of General Medicine, Nephrology, and Urology at Nishtar Hospital, Multan, from May 5, 2019, to November 5, 2019.

Methodology: A total of 120 patients suffering from complicated urinary tract infection (UTI) between 20 and 60 years of age were selected for the study. Mid-stream samples of urine were collected in sterile containers and immediately processed for further procedures. MacConkey agar (Oxoid, England) was used to subculture the colonies to get pure growth of the microorganisms. The Kirby-Bauer disk diffusion method was used to determine the antibiotic susceptibility of the isolated colonies. Müller-Hinton agar plates were used to identify the sensitivity pattern. After this, the measurement of the zone of inhibition of bacterial growth was performed and comparison was done with the guidelines of the Clinical and Laboratory Standards Institute (CLSI, 2013).

Results: Among 53 positive urine cultures, Escherichia coli was detected in 21 (39.6%), Enterococcus species were detected in 18 (33.9%), and Pseudomonas was detected in seven (13.2%). Methicillin-resistant Staphylococcus aureus (MRSA), Coliform, Streptococci, and Klebsiella were detected in 03 (5.7%), 02 (3.8%), 01 (1.9%), and 01 (1.9%) of the positive cultures, respectively.

Conclusion: The current study shows E. coli to be the most common pathogen in UTI, with very high antibiotic resistance. This warrants the careful selection and conservative use of antibiotics.

Database: Medline

20. The influence of adaptive challenge on engagement of multidisciplinary staff in standardising aseptic technique in an emergency department: A qualitative study.

Author(s): Towell-Barnard, Amanda; Slatyer, Susan; Cadwallader, Helen; Harvey, Michelle; Davis, Susan



Source: Journal of clinical nursing; Feb 2020; vol. 29 (no. 3-4); p. 459-467

Publication Date: Feb 2020

Publication Type(s): Journal Article

PubMedID: 31793117

Available at [Journal of clinical nursing](#) - from Wiley Online Library

Abstract:

AIMS AND OBJECTIVES: To explore the challenge of engaging multidisciplinary staff in standardising aseptic technique (AT) in an emergency department (ED) in an Australian tertiary hospital, and to better understand the enablers and barriers to implementing practice change within this setting.

BACKGROUND: Healthcare-associated infections are the most common complication for patients in acute care. A clinical practice framework developed in the United Kingdom (UK) standardised AT practice to reduce potential infection risk. One Australian tertiary hospital drew upon this framework to similarly improve clinical practice. It was understood that standardising practice would require some practitioners only to revisit and demonstrate AT principles already embedded in their practice, while others would be challenged to adopt a new approach.

DESIGN: Qualitative, descriptive research design.

METHODS: Data were collected through focus groups held before and after implementation of the AT programme. Data were analysed using the framework method. The (COREQ) checklist was followed.

RESULTS: Four emergent themes described the influence of motivation on individuals' beliefs and attitudes towards practice change, relationships within the ED context, delivery of education and management directives.

CONCLUSION: Implementing practice change is more than just providing technical knowledge and includes changing individuals' beliefs and attitudes. An understanding of adaptive challenge can assist in implementing practice change that involves the multidisciplinary team.

RELEVANCE TO CLINICAL PRACTICE: Results provide evidence as to how the adaptive challenge framework could be a suitable approach to manage potential enablers and barriers to implementing change within a multidisciplinary team in an acute hospital.

Database: Medline

21. COMMUNITY-ACQUIRED MRSA: Hand hygiene is still the best defense

Author(s): Anonymous

Source: Nursing; Feb 2020; vol. 50 (no. 2); p. 23

Publication Date: Feb 2020

Publication Type(s): News

Available at [Nursing](#) - from Unpaywall

Abstract: Because methicillin-resistant Staphylococcus aureus (MRSA) skin and soft tissue infection is a growing threat worldwide, a study was designed to investigate factors driving community-acquired MRSA infections. From 2012-2015, researchers recruited otherwise healthy pediatric patients with culture-confirmed, community-onset MRSA infections for the Household Observation of MRSA in the Environment (HOME) prospective cohort study. Subjects were drawn from hospitals and community practices in metropolitan St. Louis MO. Household contacts (individuals sleeping in the home 4 nights per week or more) and indoor dogs and cats were also enrolled. Children with healthcare-related risk factors were excluded.

Database: BNI

22. Prophylactic biological mesh reinforcement versus standard closure of stoma site (ROCSS): a multicentre, randomised controlled trial



Author(s):

Source: The Lancet; Feb 2020; vol. 395 (no. 10222); p. 417

Publication Date: Feb 2020

Publication Type(s): Evidence Based Healthcare Journal Article

Available at [Lancet \(London, England\)](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Lancet \(London, England\)](#) - from Unpaywall

Abstract:

Summary: Background Closure of an abdominal stoma, a common elective operation, is associated with frequent complications; one of the commonest and impactful is incisional hernia formation. We aimed to investigate whether biological mesh (collagen tissue matrix) can safely reduce the incidence of incisional hernias at the stoma closure site.

Methods: In this randomised controlled trial (ROCSS) done in 37 hospitals across three European countries (35 UK, one Denmark, one Netherlands), patients aged 18 years or older undergoing elective ileostomy or colostomy closure were randomly assigned using a computer-based algorithm in a 1:1 ratio to either biological mesh reinforcement or closure with sutures alone (control). Training in the novel technique was standardised across hospitals. Patients and outcome assessors were masked to treatment allocation. The primary outcome measure was occurrence of clinically detectable hernia 2 years after randomisation (intention to treat). A sample size of 790 patients was required to identify a 40% reduction (25% to 15%), with 90% power (15% drop-out rate). This study is registered with ClinicalTrials.gov, NCT02238964.

Findings: Between Nov 28, 2012, and Nov 11, 2015, of 1286 screened patients, 790 were randomly assigned. 394 (50%) patients were randomly assigned to mesh closure and 396 (50%) to standard closure. In the mesh group, 373 (95%) of 394 patients successfully received mesh and in the control group, three patients received mesh. The clinically detectable hernia rate, the primary outcome, at 2 years was 12% (39 of 323) in the mesh group and 20% (64 of 327) in the control group (adjusted relative risk [RR] 0.62, 95% CI 0.43–0.90; $p=0.012$). In 455 patients for whom 1 year postoperative CT scans were available, there was a lower radiologically defined hernia rate in mesh versus control groups (20 [9%] of 229 vs 47 [21%] of 226, adjusted RR 0.42, 95% CI 0.26–0.69; $p<0.001$). There was also a reduction in symptomatic hernia (16%, 52 of 329 vs 19%, 64 of 331; adjusted relative risk 0.83, 0.60–1.16; $p=0.29$) and surgical reintervention (12%, 42 of 344 vs 16%, 54 of 346: adjusted relative risk 0.78, 0.54–1.13; $p=0.19$) at 2 years, but this result did not reach statistical significance. No significant differences were seen in wound infection rate, seroma rate, quality of life, pain scores, or serious adverse events.

Interpretation: Reinforcement of the abdominal wall with a biological mesh at the time of stoma closure reduced clinically detectable incisional hernia within 24 months of surgery and with an acceptable safety profile. The results of this study support the use of biological mesh in stoma closure site reinforcement to reduce the early formation of incisional hernias. Funding National Institute for Health Research Research for Patient Benefit and Allergan.

Database: BNI

23. Stoma closure reinforcement with biological mesh and incisional hernia

Author(s): Rios-Diaz, Arturo J; Fischer, John P

Source: The Lancet; Feb 2020; vol. 395 (no. 10222); p. 393

Publication Date: Feb 2020

Publication Type(s): Commentary

Available at [The Lancet](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [The Lancet](#) - from Unpaywall

Abstract: Incisional hernia is a prevalent complication after abdominal surgery, with an incidence as high as 39% at 2 years.¹ Incisional hernia adversely affects health-related quality of life, particularly in regards to pain, physical function, ability to work, and feelings about appearance.² The condition can lead to serious complications due to



bowel obstruction with incarceration or strangulation³ and can recur after surgical repair, necessitating additional procedures.⁴ Incisional hernia represents a true global public health issue with a substantial burden to health-care systems around the world.^{5,6} However, the condition is potentially preventable, with estimated savings of \$32 million in the USA for each 1% reduction and €4 million in France for each 5% reduction.^{5,6} Incisional hernia at the stoma site after creation (parastomal hernia) or closure has traditionally been a challenge for surgeons for several reasons. Additionally, wound contamination with gut flora is inevitable at the time a stoma is created or closed, which predisposes to infection and in turn incisional hernia formation due to impaired healing processes.⁷ Therefore, it is not surprising that parastomal hernia is the most common complication after ostomy creation, with rates as high as 37%,⁸ and that after primary closure of fascia at the time of stoma reversal, one in five patients develop an incisional hernia.⁹ Lastly, according to several systematic reviews and the Ventral Hernia Working Group expert consensus, the use of synthetic mesh is not recommended in cases of gross contamination in which there is a high risk of infection,¹⁰ leaving biological mesh as the preferred mesh type for these cases.¹¹ Consequently, attention was shifted to incisional hernia preventive measures and examining the role of prophylactic mesh placement. The data supporting mesh placement at the time of stoma creation for parastomal hernia prevention are conclusive as established by a previous meta-analysis of randomised controlled trials, which showed that parastomal hernia was reduced by 76% when mesh was used (95% CI 50–88; $p < 0.01$), with no difference by mesh type.⁸ By contrast, the benefit of mesh at the time of ostomy closure is still debated as supporting data are scarce, comprising retrospective and small studies without uniformity in technique or in the type of mesh used (ie, synthetic, biosynthetic, or biological; and placement of mesh in different planes such as onlay, sublay, or underlay).^{12–14} A systematic review from 2018 concluded that the data justifying mesh placement at the time of stoma closure are limited and of low quality.¹¹ A randomised controlled trial to clarify the benefit of prophylactic mesh placement at the time of stoma closure is an important contribution to the literature.

Database: BNI

24. Preoperative and postoperative recommendations to surgical wound care interventions: A systematic meta-review of Cochrane reviews

Author(s): Gillespie, Brigid M; Walker, Rachel M; McInnes, Elizabeth; Moore, Zena; Eskes, Anne M; O'Connor, Tom; Harbeck, Emma; White, Codi; Scott, Ian A; Vermeulen, Hester; Chaboyer, Wendy

Source: International Journal of Nursing Studies; Feb 2020; vol. 102 ; p. 1

Publication Date: Feb 2020

Publication Type(s): Journal Article

Available at [International Journal of Nursing Studies](#) - from Unpaywall

Abstract:

Background: The increasing numbers of surgeries involving high risk, multi-morbid patients, coupled with inconsistencies in the practice of perioperative surgical wound care, increases patients' risk of surgical site infection and other wound complications.

Objectives: To synthesise and evaluate the recommendations for nursing practice and research from published systematic reviews in the Cochrane Library on nurse-led preoperative prophylaxis and postoperative surgical wound care interventions used or initiated by nurses.

Design: Meta-review, guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.

Data sources: The Cochrane Library database.

Review methods: All Cochrane Systematic Reviews were eligible. Two reviewers independently selected the reviews and extracted data. One reviewer appraised the methodological quality of the included reviews using A Measurement Tool to Assess Systematic Reviews 2 checklist. A second reviewer independently verified these appraisals. The review protocol was registered with the Prospective Register of Systematic Reviews.

Results: Twenty-two Cochrane reviews met the inclusion criteria. Of these, 11 reviews focused on preoperative interventions to prevent infection, while 12 focused on postoperative interventions (one review assessed both pre-postoperative interventions). Across all reviews, 14 (63.6%) made at least one recommendation to undertake a



specific practice, while two reviews (9.1%) made at least one specific recommendation not to undertake a practice. In relation to recommendations for further research, insufficient sample size was the most predominant methodological issue (12/22) identified across reviews.

Conclusions: The limited number of recommendations for pre-and-postoperative interventions reflects the paucity of high-quality evidence, suggesting a need for rigorous trials to address these evidence gaps in fundamentals of nursing care.

Database: BNI

25. Clinical Issues

Author(s): Anderson, Mary Alice, MSN, RN, CNOR

Source: AORN Journal; Feb 2020; vol. 111 (no. 2); p. 233

Publication Date: Feb 2020

Publication Type(s): Journal Article

Available at [AORN journal](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: Reducing the contaminants on high-touch surfaces decreases the potential for transmission of multidrug-resistant organisms.¹ During enhanced cleaning, personnel should wipe down all items that require cleaning and disinfection during routine cleaning (eg, beds, safety straps, overhead lights, tables) and additional high-touch items, including * chairs and sitting stools, * step stools, * computer accessories, * trash and linen receptacles, * door handles, * cabinets, * light switches, and * fixed and mobile communication devices.¹ According to the guideline, personnel should clean other surgical equipment if it was used, including positioning devices, bed attachments, transfer boards, surgical monitor handles, and reusable attachments (eg, foot pedals); personnel also should clean the walls and floors if they were soiled during the procedure.¹ According to the Centers for Disease Control and Prevention, personnel should use standard precautions during cleaning when there is a potential risk of exposure to blood, other body fluids, or other potentially infectious materials.² Personnel who clean and disinfect ORs are at risk for both biohazardous and chemical exposure³ and should wear PPE (eg, gloves, masks, eye protection) when potential contact with "splashes, spray, splatter, or droplets of blood, [other] body fluids, or other potentially infectious materials is anticipated. Staff member education sessions should include information about new disinfectants and cleaning equipment, materials, and processes.³ The AORN Environmental Cleaning Tool Kit provides materials, such as checklists, presentations, and videos, for leaders to educate perioperative teams.⁵ In addition, facility leaders should monitor compliance with enhanced cleaning procedures to ensure that personnel effectively complete all required steps to prevent pathogen transmission.¹ Mary Alice Anderson, MSN, RN, CNOR, is a perioperative practice specialist in the Nursing Department at AORN, Inc, Denver, CO. Answer: Cancer recurrence (ie, seeding) along the surgical pathway has been associated with using the same instruments before and after the removal of cancer cells.¹⁻⁴ Depending on the type of procedure, perioperative team members may need to revise the surgical plan of care to mitigate the risk of seeding.² The AORN "Guideline for sterile technique"¹ recommends using an isolation technique during procedures involving the resection of metastatic tumors. Perioperative leaders should standardize the isolation technique that they want to use at their facility to reduce errors related to a lack of accuracy, efficiency, and continuity among perioperative team members.¹ To decrease the risk of cancer cell seeding, the guideline recommends * setting up a separate sterile field or a separate area of a single sterile field (eg, basin) to isolate instruments and items that contact metastatic tumors; * using a wound protector (ie, sterile malleable barrier) or clean sterile towels around the surgical incision site; * restricting access to the sterile instrument table during the resection; * isolating the potentially contaminated instruments, wound protector, towels, and other items (eg, electrosurgical pencil, suction tip and tubing, light handles) in the separate area or field after the resection is complete and before closing the inner cavity or fascia; * changing surgical gloves; * changing surgical gowns if they are soiled; * covering the potentially contaminated drapes with new sterile drapes; and * using new sterile instruments for closure of the surgical cavity and incision after resection.¹ Personnel can isolate the potentially contaminated items either by using one back table and isolating a section of the table or by using two back tables and isolating one table in its entirety.

Database: BNI



26. Antibiotic resistance is a growing threat

Author(s): Anonymous

Source: The American Journal of Nursing; Feb 2020; vol. 120 (no. 2); p. 15

Publication Date: Feb 2020

Publication Type(s): News

Abstract: Antibiotic resistant infections were responsible for more than 35,000 deaths out of 2.8 million cases, according to the Centers for Disease Control and Prevention's report, Antibiotic Resistance Threats in the United States, 2019. Currently, 18 bacteria and fungi present an urgent, serious, or concerning threat of antibiotic resistance. Another urgent threat is *Clostridioides difficile* (formerly *Clostridium difficile*), with 223,900 cases and 12,800 deaths in 2017.

Database: BNI

27. The antimicrobial crisis: enough advocacy, more action

Author(s):

Source: The Lancet; Jan 2020; vol. 395 (no. 10220); p. 247

Publication Date: Jan 2020

Publication Type(s): Editorial

Available at [Lancet \(London, England\)](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Lancet \(London, England\)](#) - from Unpaywall

Abstract: Only two of these agents are active against difficult-to-treat Gram-negative bacteria, such as *Klebsiella pneumoniae* and *Escherichia coli*. Because of public and philanthropic funding of small biotech companies and start-ups, the preclinical pipeline shows more promise, with 252 agents active against WHO's priority pathogens. According to the Access to Medicine Foundation, antibiotics are not being made widely available in LMICs through registration filings or supply strategies: only three of the 13 patented antibiotics in their analysis are filed for sales registration in more than ten of the 102 countries where better access is urgently needed; and companies are supplying just 14 of 30 older, but still useful, antibiotics to low-income countries. The formal tripartite of WHO, the Food and Agriculture Organization, and the World Organisation for Animal Health must have a major role in identifying and promoting the implementation of feasible strategies to tackle AMR, eventually leading to a global governance mechanism whereby evidence-based interventions that are feasible and acceptable can be enshrined.

Database: BNI

28. Perinatal Management of Group B Streptococcal Infection: Clinical Update

Author(s): Howard, Elisabeth D, PhD, CNM, FACNM

Source: Journal of Perinatal & Neonatal Nursing; 2019; vol. 33 (no. 4); p. 280

Publication Date: 2019

Publication Type(s): Commentary

Abstract: The history, clinical uncertainties and the current recommendations for the treatment of Group B Streptococcus (GBS) in the perinatal and intrapartum periods are examined. GBS is the leading cause of newborn infection and while asymptomatic, maternal colonization remains the critical determinant and primary risk factor for neonatal disease. The implementation of national guidelines for intrapartum antibiotic prophylaxis has resulted in an 80% decrease in the incidence of GBS infections in neonates since the 1990s. Recently, the guideline for the prevention and treatment of GBS was updated for the fourth time in a multistakeholder-endorsed American College of Obstetricians and Gynecologists Committee.



Database: BNI

29. Caring for dehisced wounds in the community

Author(s): Brown, Annemarie

Source: Journal of Community Nursing; 2019; vol. 33 (no. 5); p. 28

Publication Date: 2019

Publication Type(s): Journal Article

Available at [Journal of Community Nursing](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: Dehisced surgical wounds are a common occurrence and are seen both in primary and secondary care. The impact of a dehisced wound is far reaching. For the National Health Service, there are increased in-patient costs and additional resources in terms of an extended healing time, such as staffing and dressing materials and therapies. For the patient, a dehisced wound can impact significantly on their wellbeing and quality of life and for patients of working age, the economic impact of not being able to work can be enormous. This article discusses the incidence of wound dehiscence, outlines the types of wounds which are most likely to dehisce, and the most common reason for this, wound infection. Strategies for managing wound infection, including the use of antiseptic and antimicrobial products, together with a frequently used therapy, topical negative pressure therapy (TNPT), are also discussed.

Database: BNI

30. Multiple introductions of methicillin-resistant Staphylococcus aureus ST612 into Western Australia associated both with human and equine reservoirs.

Author(s): Murphy, Riley J T; Ramsay, Joshua P; Lee, Yung T; Pang, Stanley; O'Dea, Mark A; Pearson, Julie C; Axon, Jane E; Raby, Edward; Abdulgader, Shima M; Whitelaw, Andrew; Coombs, Geoffrey W

Source: International journal of antimicrobial agents; Dec 2019; vol. 54 (no. 6); p. 681-685

Publication Date: Dec 2019

Publication Type(s): Journal Article

PubMedID: 31479739

Abstract: Staphylococcus aureus is a serious human and animal pathogen. Multilocus sequence type 612 (ST612) is the dominant methicillin-resistant S. aureus (MRSA) clone in certain South African hospitals and is sporadically isolated from horses and horse-associated veterinarians in Australia. Colonisation and infection by ST612-MRSA is increasing in Western Australia. Whole-genome sequencing was performed for 51 isolates of ST612-MRSA from Western Australian patients and healthcare workers, South African hospital patients, Australian veterinarians and New South Wales horses. Core genome phylogenies suggested that Australian equine and veterinarian-associated ST612-MRSA were monophyletic. Individual Western Australian isolates grouped either with this equine-associated lineage or more diverse lineages related to those in South African hospitals. Bioinformatic analyses of the complete ST612-MRSA reference genome SVH7513 confirmed that ST612-MRSA was closely related to ST8 USA500 MRSA. Common use of rifampicin in South Africa and equine veterinarian practice may favour ST612-MRSA in these settings. Humans and horses colonised with ST612-MRSA are potential reservoirs for MRSA in Australia.

Database: Medline

31. Circulation of a community healthcare-associated multiply-resistant methicillin-resistant Staphylococcus aureus lineage in South Yorkshire identified by whole genome sequencing.

Author(s): Utsi, L; Pichon, B; Arunachalam, N; Kerrane, A; Batten, E; Denton, M; Townsend, R; Agwuh, K N; Hughes, G J; Kearns, A

Source: The Journal of hospital infection; Dec 2019; vol. 103 (no. 4); p. 454-460



Publication Date: Dec 2019

Publication Type(s): Journal Article

PubMedID: 31408690

Abstract:

BACKGROUND: A cluster of seven cases of skin and wound infections caused by a multiply resistant meticillin-resistant *Staphylococcus aureus* (MRSA) were detected in a small-town community in South Yorkshire. Initial microbiological investigations showed that all isolates belonged to a spa type observed rarely in England (t1476).

AIM: To describe the epidemiology of t1476 MRSA in South Yorkshire.

METHODS: Retrospective and prospective case ascertainment was promoted through communication with local microbiology laboratories. Public health investigation included a detailed review of clinical notes for a subset of nine cases. Genomic and phylogenetic analysis was undertaken on t1476 MRSA.

FINDINGS: Thirty-two cases of t1476 MRSA infection or colonization were identified between December 2014 and February 2018. Cases were older adults (aged 50-98 years). Healthcare exposures for a subset of nine cases indicated frequent contact with a team of district nurses, with all but one case receiving treatment on the same day as another case prior to their own diagnosis. No cases were admitted to hospital at the time of specimen collection. Despite detailed investigations, no carriers were detected among district nursing staff. A long-term carrier/super-shedder was not found. Phylogenetic analysis indicated that t1476 MRSA cases from South Yorkshire were monophyletic and distant from both MRSA of the same lineage from elsewhere in the UK (N = 15) and from publicly available sequences from Tanzania.

CONCLUSION: Genomic and epidemiological analyses indicate community-based transmission of a multiply resistant MRSA clone within South Yorkshire introduced around 2012-2013, prior to the detection of a spatial-temporal cluster associated with a distinct risk group. Surveillance data indicate continued circulation.

Database: Medline

32. A service evaluation of simultaneous near-patient testing for influenza, respiratory syncytial virus, *Clostridium difficile* and norovirus in a UK district general hospital.

Author(s): Haigh, J; Cutino-Moguel, M-T; Wilks, M; Welch, C A; Melzer, M

Source: The Journal of hospital infection; Dec 2019; vol. 103 (no. 4); p. 441-446

Publication Date: Dec 2019

Publication Type(s): Comparative Study Evaluation Study Journal Article

PubMedID: 31494128

Abstract:

BACKGROUND: The Cepheid® GeneXpert® (GXP) can simultaneously test for norovirus (NV), *Clostridium difficile* (CD), influenza A/B (IFA/B) and respiratory syncytial virus (RSV).

AIM: To compare centralized multiplex polymerase chain reaction (PCR) testing with localized GXP testing at a district general hospital.

METHODS: From December 2017 to December 2018, samples received at Whipps Cross University Hospital (WCUH) were first tested at the local laboratory before transport centrally to the Royal London Hospital (RLH). At the RLH, a non-proprietary multiplex reverse transcriptase (RT) PCR assay was performed, which also tested for gastrointestinal or respiratory pathogens not tested for by the GXP.

FINDINGS: A total of 1111 stool and respiratory samples were processed at both sites; 591 were respiratory and 520 were stool samples. Compared to centralized testing, the GXP gave sensitivity, specificity, and NPV all in excess of 97%, with the exception of RSV. The RSV assay had a sensitivity of 66.7% (95% confidence interval (CI) 24.1, 94.0) but an NPV of 99.7% (95% CI 98.6, 99.9). At the RLH, 65 (5.9%) additional respiratory or gastrointestinal viruses were detected, predominantly rhinovirus 35 (3.2%) and adenovirus 11 (1.0%). Compared to centralized testing, the



median time saved for local respiratory and gastrointestinal sample testing was 19 h and 46 min and 17 h and 6 min, respectively.

CONCLUSIONS: Local GXP testing compared to centralized multiplex PCR testing for IF, NV and CD, demonstrated sensitivities, specificities and NPV between 95% and 100%. Turnaround times were faster, enabling quicker infection prevention and control decision making. In our local setting (WCUH), the GXP demonstrated the potential to reduce NV and IFA/B outbreaks.

Database: Medline

33. The presence of multidrug-resistant staphylococcal isolates outside of a major hospital in London, United Kingdom.

Author(s): Idris, Adi; Cutler, Ron R

Source: Central European journal of public health; Dec 2019; vol. 27 (no. 4); p. 340-344

Publication Date: Dec 2019

Publication Type(s): Journal Article

PubMedID: 31951696

Available at [Central European journal of public health](#) - from Unpaywall

Abstract:

OBJECTIVE: Drug-resistant staphylococci have been a growing threat to the community and hospitals due to the misuse of antibiotics by humans, industrialisation and lack of novel antimicrobials currently available. Little is known about the prevalence of drug-resistant staphylococci in non-healthcare environments outside hospitals in the London area. Staphylococci can spread via contact with contaminated objects. Traffic light buttons present a fast and easy transmission route for staphylococci.

METHODS: Traffic light buttons outside a major hospital in London were swabbed and cultured onto selective media to isolate staphylococci bacteria before performing antimicrobial susceptibility testing on the isolates. The identity of the isolates were determined using MALDI-TOF mass spectrometry (MS). Staphylococci isolates resistant to oxacillin were further tested for minimum inhibitory concentration (MIC). PCR analysis of the *mecA* gene, a gene that confers resistance to oxacillin, is used to determine the level of resistance to oxacillin.

RESULTS: Eight different staphylococcal species were identified by MALDI-TOF-MS analysis. Out of the 66 staphylococci isolates, 16 were resistant to multiple antibiotics including six isolates which were oxacillin resistant.

CONCLUSION: This work provides evidence of the presence of multidrug-resistant staphylococci in the vicinity of the hospital environment in London.

Database: Medline

34. Optimal vancomycin dosing regimens for critically ill patients with acute kidney injury during continuous renal replacement therapy: A Monte Carlo simulation study

Author(s): Charoensareerat, Taniya; Chaijamorn, Weerachai; Boonpeng, Apinya; Srisawat, Nattachai; Pummangura, Chalerm Sri; Pattharachayakul, Sutthiporn

Source: Journal of Critical Care; Dec 2019; vol. 54 ; p. 77

Publication Date: Dec 2019

Publication Type(s): Journal Article

Abstract:

Purpose: This study aims to determine the optimal vancomycin dosing in critically ill patients with acute kidney injury receiving continuous renal replacement therapy (CRRT) using Monte Carlo simulation.



Methods: A one compartment pharmacokinetic model was conducted to define vancomycin deposition for the initial 48hours of therapy. Pharmacokinetic parameters were gathered from previously published studies. The AUC₂₄/MIC ratio of at least 400 and an average of AUC₀₋₂₄ at > 700mg_h/L were utilized to evaluate efficacy and nephrotoxicity, respectively. The doses achieved at least 90% of the probability of target attainment (PTA) with the lowest risk of nephrotoxicity defined as the optimal dose.

Results: The regimens of 1.75grams every 24hours and 1.5grams loading followed by 500mg every 8hours were recommended for empirical therapy of an MRSA infection with expected MIC ≤1mg/L, and definite therapy with actual MIC of 1mg/L. The probabilities of nephrotoxic results from these regimens were 35%.

Conclusions: A higher dose of vancomycin than the current literature-based recommendation was needed in CRRT patients.

Database: BNI

35. Safety of antimicrobial de-escalation for culture-negative severe pneumonia

Author(s): Soo, Byoung; Ho, Sang; Younsuck; Jin-Won; Sang-Bum; Chae-Man

Source: Journal of Critical Care; Dec 2019; vol. 54 ; p. 14

Publication Date: Dec 2019

Publication Type(s): Journal Article

Available at [Journal of critical care](#) - from Unpaywall

Abstract:

Purpose: This study investigated the outcomes of antimicrobial de-escalation (ADE) based on mortality and the incidence of multi-drug resistant (MDR) pathogen occurrence in patients with culture-negative pneumonia presenting with sepsis and septic shock.

Materials and Methods: We retrospectively analyzed patients diagnosed with severe pneumonia requiring intensive care unit (ICU) admission and possessing negative microbiological culture results at a tertiary referral hospital in South Korea from March 2008 to July 2018.

Results: We identified 107 patients with culture-negative pneumonia. The Acute Physiologic and Chronic Health Evaluation (APACHE) II and Sepsis-related Organ Failure Assessment (SOFA) mean scores were 20.3 ± 8.6 and 9.6 ± 3.3, respectively. Among the patients, 40 (37.4%) underwent ADE. The APACHE II, SOFA, and follow-up SOFA scores did not differ significantly between the groups, and no differences were found in ICU mortality and MDR pathogen occurrence (27.5% vs 41.8%, P = .137 and 15.0% vs 16.9% P = .794, respectively).

Conclusions: We observed similar ICU mortality and MDR pathogen occurrence in patients with culture-negative pneumonia presenting with sepsis/shock regardless of whether they received ADE. Additionally, ADE lowered the antimicrobial burden.

Database: BNI

36. Guideline for environmental cleaning

Author(s): Croke, Lisa

Source: AORN Journal; Dec 2019; vol. 110 (no. 6); p. P8

Publication Date: Dec 2019

Publication Type(s): Journal Article

Available at [AORN journal](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: Because of this potential for pathogen transmission, cleaning and disinfection of high-touch items combined with a comprehensive environmental cleaning program are important to help prevent their spread.² The full guideline, which was last updated in 2013, will be available in the AORN Facility Reference Center in January 2020. The first is that if regulatory agencies do not provide disposal restrictions for a particular chemical, it may be



disposed down a drain connected to a sanitary sewer along with ample cold utility water.^{1,5} The second is that a chemical hazard risk assessment of disinfectants should be performed each year.^{1,5} Durability and life cycle were added to the list of factors that should be considered when choosing cleaning materials, tools, and equipment; these are in addition to surface composition of the items to be cleaned, manufacturers' instructions for use, compatibility with detergents and disinfectants, cost, staff member safety, and environmental effects.^{1,3} A recommendation was added to dedicate cleaning materials, tools, and equipment for use only in restricted and semirestricted areas to help prevent cross-contamination of the OR from other care areas.^{1,3} There also was new evidence on the use of environmental cleaning technology, such as ultraviolet light and hydrogen peroxide; therefore, the associated recommendation was reworded to indicate that these room decontamination systems may be assessed as adjuncts to manual cleaning.¹ Cleaning procedures A few recommendations regarding cleaning procedures were combined to create one recommendation on assembling an interdisciplinary team to identify cleaning processes and schedules based on the surfaces being cleaned and type of procedure being performed.^{1,6} In addition, deKay said that a recommendation to identify high-touch items was added based on evidence specific to the OR. The recommendation indicating that personnel should clean frequently touched portions (e.g., control panel, knobs, handles) of these high-touch items was strengthened by additional evidence.¹ OR and procedure rooms Based on new evidence, the top and drawer handles of the anesthesia cart and dials, knobs, and valves on anesthesia machines were added to the list of items that should be cleaned and disinfected if used during patient care.¹ Other items in the list include anesthesia equipment (e.g., IV poles and pumps), patient monitors, OR beds, table straps, bed attachments, positioning and transfer devices, overhead procedure lights, tables and Mayo stands, and mobile and fixed equipment (e.g., stools, pneumatic tourniquets, viewing monitors).¹ New to this update, but included in a previous 2008 version of the guideline, is the recommendation that performing terminal cleaning or closing the OR after a contaminated or dirty procedure is not required.^{1,7-9} "We added this back in based on studies showing that there is no greater risk of patients getting an infection if their surgery is performed following a contaminated procedure compared with a clean procedure," deKay said. Special pathogens *Candida auris* was added to the list of multidrug-resistant organisms for which enhanced environmental cleaning procedures should be used.¹ As recommended by the Centers for Disease Control and Prevention (CDC), a disinfectant registered by the Environmental Protection Agency that effectively eliminates *Clostridioides difficile* spores should be used after the care of patients suspected or confirmed to be colonized or infected with *C. auris*; other disinfectants may not be effective.¹⁰ "This is an interim recommendation from the CDC and could change as additional information becomes available," deKay noted.

Database: BNI

37. Appropriate environmental cleaning helps address threats from multidrug-resistant organisms

Author(s): Croke, Lisa

Source: AORN Journal; Dec 2019; vol. 110 (no. 6); p. P5

Publication Date: Dec 2019

Publication Type(s): News

Available at [AORN Journal](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [AORN Journal](#) - from Unpaywall

Database: BNI

38. Guideline Implementation: Transmission-Based Precautions

Author(s): Link, Terri, MPH BSN CNOR CIC CAIP FAPIC

Source: AORN Journal; Dec 2019; vol. 110 (no. 6); p. 637

Publication Date: Dec 2019

Publication Type(s): Journal Article

Available at [AORN Journal](#) - from ProQuest (Health Research Premium) - NHS Version



Abstract: Transmission of an infectious agent requires a source of infection, a mode of transmission, and a vulnerable host. The most important interventions for preventing infection transmission are hand hygiene and use of standard precautions for all patients. Other precautions are based on how an organism is transmitted; these include contact, airborne, and droplet precautions. The cornerstone of transmission-based precautions is appropriate use of personal protective equipment to protect personnel and patients from infection. This article discusses key takeaways from the "AORN guideline for transmission-based precautions," including using standard precautions; wearing personal protective equipment when exposure to blood, body fluids, or other potentially infectious materials is anticipated; and using contact precautions during care of patients known or suspected to be infected or colonized with pathogens transmitted by direct or indirect contact. Perioperative RNs should review the complete guideline for additional information and for guidance when writing and updating policies and procedures.

Database: BNI

39. Prophylactic levofloxacin to prevent infections in newly diagnosed symptomatic myeloma: the TEAMM RCT.

Author(s): Drayson, Mark T; Bowcock, Stella; Planche, Tim; Iqbal, Gulnaz; Pratt, Guy; Yong, Kwee; Wood, Jill; Raynes, Kerry; Higgins, Helen; Dawkins, Bryony; Meads, David; Hulme, Claire T; Whittaker, Anna C; Hawkey, Peter; Low, Eric; Dunn, Janet A

Source: Health technology assessment (Winchester, England); Nov 2019; vol. 23 (no. 62); p. 1-94

Publication Date: Nov 2019

Publication Type(s): Clinical Trial

PubMedID: 31690402

Available at [Health technology assessment \(Winchester, England\)](#) - from Unpaywall

Abstract:

BACKGROUND: Myeloma causes profound immunodeficiency and recurrent serious infections. There are approximately 5500 new UK cases of myeloma per annum, and one-quarter of patients will have a serious infection within 3 months of diagnosis. Newly diagnosed patients may benefit from antibiotic prophylaxis to prevent infection. However, the use of prophylaxis has not been established in myeloma and may be associated with health-care-associated infections (HCAIs), such as *Clostridium difficile*. There is a need to assess the benefits and cost-effectiveness of the use of antibacterial prophylaxis against any risks in a double-blind, placebo-controlled, randomised clinical trial.

OBJECTIVES: To assess the risks, benefits and cost-effectiveness of prophylactic levofloxacin in newly diagnosed symptomatic myeloma patients.

DESIGN: Multicentre, randomised, double-blind, placebo-controlled trial. A central telephone randomisation service used a minimisation computer algorithm to allocate treatments in a 1 : 1 ratio.

SETTING: A total of 93 NHS hospitals throughout England, Northern Ireland and Wales.

PARTICIPANTS: A total of 977 patients with newly diagnosed symptomatic myeloma.

INTERVENTION: Patients were randomised to receive levofloxacin or placebo tablets for 12 weeks at the start of antimyeloma treatment. Treatment allocation was blinded and balanced by centre, estimated glomerular filtration rate and intention to give high-dose chemotherapy with autologous stem cell transplantation. Follow-up was at 4-week intervals up to 16 weeks, with a further follow-up at 1 year.

MAIN OUTCOME MEASURES: The primary outcome was to assess the number of febrile episodes (or deaths) in the first 12 weeks from randomisation. Secondary outcomes included number of deaths and infection-related deaths, days in hospital, carriage and invasive infections, response to antimyeloma treatment and its relation to infection, quality of life and overall survival within the first 12 weeks and beyond.

RESULTS: In total, 977 patients were randomised (levofloxacin, n = 489; placebo, n = 488). A total of 134 (27%) events (febrile episodes, n = 119; deaths, n = 15) occurred in the placebo arm and 95 (19%) events (febrile episodes, n = 91; deaths, n = 4) occurred in the levofloxacin arm; the hazard ratio for time to first event (febrile episode or death) within the first 12 weeks was 0.66 (95% confidence interval 0.51 to 0.86; p = 0.002). Levofloxacin also reduced other



infections (144 infections from 116 patients) compared with placebo (179 infections from 133 patients; p-trend of 0.06). There was no difference in new acquisitions of *C. difficile*, methicillin-resistant *Staphylococcus aureus* and extended-spectrum beta-lactamase Gram-negative organisms when assessed up to 16 weeks. Levofloxacin produced slightly higher quality-adjusted life-year gains over 16 weeks, but had associated higher costs for health resource use. With a median follow-up of 52 weeks, there was no significant difference in overall survival ($p = 0.94$).

LIMITATIONS: Short duration of prophylactic antibiotics and cost-effectiveness.

CONCLUSIONS: During the 12 weeks from new diagnosis, the addition of prophylactic levofloxacin to active myeloma treatment significantly reduced febrile episodes and deaths without increasing HCAs or carriage. Future work should aim to establish the optimal duration of antibiotic prophylaxis and should involve the laboratory investigation of immunity, inflammation and disease activity on stored samples funded by the TEAMM (Tackling Early Morbidity and Mortality in Myeloma) National Institute for Health Research Efficacy and Mechanism Evaluation grant (reference number 14/24/04).

TRIAL REGISTRATION: Current Controlled Trials ISRCTN51731976.

FUNDING DETAILS: This project was funded by the NIHR Health Technology Assessment programme and will be published in full in Health Technology Assessment; Vol. 23, No. 62. See the NIHR Journals Library website for further project information.

Database: Medline

40. Nosocomial transmission of influenza: A retrospective cross-sectional study using next generation sequencing at a hospital in England (2012-2014).

Author(s): Blackburn, Ruth M; Frampton, Dan; Smith, Catherine M; Fragaszy, Ellen B; Watson, Simon J; Ferns, R Bridget; Binter, Špela; Coen, Pietro G; Grant, Paul; Shallcross, Laura J; Kozlakidis, Zisis; Pillay, Deenan; Kellam, Paul; Hué, Stéphane; Nastouli, Eleni; Hayward, Andrew C; ICONIC group

Source: Influenza and other respiratory viruses; Nov 2019; vol. 13 (no. 6); p. 556-563

Publication Date: Nov 2019

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 31536169

Available at [Influenza and other respiratory viruses](#) - from Europe PubMed Central - Open Access

Available at [Influenza and other respiratory viruses](#) - from Wiley Online Library Free Content - NHS

Available at [Influenza and other respiratory viruses](#) - from EBSCO (MEDLINE Complete)

Available at [Influenza and other respiratory viruses](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Influenza and other respiratory viruses](#) - from Unpaywall

Abstract:

BACKGROUND: The extent of transmission of influenza in hospital settings is poorly understood. Next generation sequencing may improve this by providing information on the genetic relatedness of viral strains.

OBJECTIVES: We aimed to apply next generation sequencing to describe transmission in hospital and compare with methods based on routinely-collected data.

METHODS: All influenza samples taken through routine care from patients at University College London Hospitals NHS Foundation Trust (September 2012 to March 2014) were included. We conducted Illumina sequencing and identified genetic clusters. We compared nosocomial transmission estimates defined using classical methods (based on time from admission to sample) and genetic clustering. We identified pairs of cases with space-time links and assessed genetic relatedness.

RESULTS: We sequenced influenza sampled from 214 patients. There were 180 unique genetic strains, 16 (8.8%) of which seeded a new transmission chain. Nosocomial transmission was indicated for 32 (15.0%) cases using the classical definition and 34 (15.8%) based on genetic clustering. Of the 50 patients in a genetic cluster, 11 (22.0%) had



known space-time links with other cases in the same cluster. Genetic distances between pairs of cases with space-time links were lower than for pairs without spatial links ($P < .001$).

CONCLUSIONS: Genetic data confirmed that nosocomial transmission contributes significantly to the hospital burden of influenza and elucidated transmission chains. Prospective next generation sequencing could support outbreak investigations and monitor the impact of infection and control measures.

Database: Medline

41. Antibiotic prescribing in care homes in the UK, 2016–17: a cross-sectional study of linked data

Author(s): Smith, Catherine M; Williams, Haydn; Normington, Andrew; Hayward, Andrew C; Shallcross, Laura J

Source: The Lancet; Nov 2019; vol. 394 ; p. S6

Publication Date: Nov 2019

Publication Type(s): Conference Proceedings

Available at [The Lancet](#) - from Unpaywall

Abstract:

Background: Older people living in care homes are particularly susceptible to infections and are at high risk of adverse outcomes related to antibiotic treatment. However, information on antibiotic prescribing in this setting is scarce. We aimed to describe the frequency of antibiotic prescribing for different infections for residents of UK care homes.

Methods: This was a cross-sectional study of residents of a chain of 135 UK care homes (93 in England, 20 in Northern Ireland, 19 in Scotland, three in Wales) between Jan 1, 2016, and Dec 31, 2017. Residents were excluded if they were younger than 65 years ($n=657$) or had a length of stay of 0 days ($n=50$). We extracted information on demographics (age, sex, length of stay) and infections (type, date) from care home systems. Infections were reported by care home staff using an internal incident management system. We extracted antibiotic prescriptions from the system of a large national pharmacy chain (contracted to fulfil prescriptions to the care home chain) and linked them to the resident-level data. We analysed resident characteristics using descriptive statistics and calculated the crude rate of antibiotic prescribing. We identified antibiotics prescribed within 2 days of reported infections and estimated proportions of antibiotic prescription for different infections. This study was approved by the UCL Research Ethics Committee (ID 11813/002).

Findings: 13 487 residents stayed in the homes for a total of 3 916 931 days during the 2-year study period and were included in the analysis. The median number of beds per care home was 50 (range 25–111). Median age of residents was 85 years (IQR 79–90), and 8518 (63%) residents were women. 28 689 antibiotics were prescribed, a crude rate of 2.7 per resident-year. Overall, 5237 (52%) of 9986 of reported infections led to an antibiotic prescription, with similar proportions across common infection types: chest (2435 [55%] 4420), urinary tract (2332 [55%] 4232), and cellulitis (308 [57%] of 538). **Interpretation** The rate of antibiotic prescribing is much higher for care home residents than for the general population, particularly for chest infections, many of which might be viral. This is an important area for further research and development of stewardship interventions. Strengths of the study were its large scale and use of novel data linkages. Limitations included absence of information on temporary absences from homes. Further work will estimate effects of resident and care home factors on antibiotic prescribing. Funding Economic and Social Research Council (grant number ES/P008321/1), as part of the Preserving Antibiotics through Safe Stewardship (PASS) project.

Database: BNI

42. Risk of meningitis in infants with urinary tract infection

Author(s):

Source: Journal of Paediatrics and Child Health; Nov 2019; vol. 55 (no. 11); p. 1404

Publication Date: Nov 2019



Publication Type(s): Journal Article

Available at [Journal of Paediatrics and Child Health](#) - from Wiley Online Library

Database: BNI

43. Cross-sectional study of the prevalence, causes and management of hospital-onset diarrhoea.

Author(s): Mawer, D; Byrne, F; Drake, S; Brown, C; Prescott, A; Warne, B; Bousfield, R; Skittrall, J P; Ramsay, I; Somasunderam, D; Bevan, M; Coslett, J; Rao, J; Stanley, P; Kennedy, A; Dobson, R; Long, S; Obisanya, T; Esmailji, T; Petridou, C; Saeed, K; Brechany, K; Davis-Blue, K; O'Horan, H; Wake, B; Martin, J; Featherstone, J; Hall, C; Allen, J; Johnson, G; Hornigold, C; Amir, N; Henderson, K; McClements, C; Liew, I; Deshpande, A; Vink, E; Trigg, D; Guilfoyle, J; Scarborough, M; Scarborough, C; Wong, T H N; Walker, T; Fawcett, N; Morris, G; Tomlin, K; Grix, C; O'Cofaigh, E; McCaffrey, D; Cooper, M; Corbett, K; French, K; Harper, S; Hayward, C; Reid, M; Whatley, V; Winfield, J; Hoque, S; Kelly, L; King, I; Bradley, A; McCullagh, B; Hibberd, C; Merron, M; McCabe, C; Horridge, S; Taylor, J; Koo, S; Elsanousi, F; Saunders, R; Lim, F; Bond, A; Stone, S; Milligan, I D; Mack, D J F; Nagar, A; West, R M; Wilcox, M H; Kirby, A; Sandoe, J A T

Source: The Journal of hospital infection; Oct 2019; vol. 103 (no. 2); p. 200-209

Publication Date: Oct 2019

Publication Type(s): Journal Article Observational Study

PubMedID: 31077777

Abstract:

BACKGROUND: The National Health Service in England advises hospitals collect data on hospital-onset diarrhoea (HOD). Contemporaneous data on HOD are lacking.

AIM: To investigate prevalence, aetiology and management of HOD on medical, surgical and elderly-care wards.

METHODS: A cross-sectional study in a volunteer sample of UK hospitals, which collected data on one winter and one summer day in 2016. Patients admitted ≥ 72 h were screened for HOD (definition: ≥ 2 episodes of Bristol Stool Type 5-7 the day before the study, with diarrhoea onset >48 h after admission). Data on HOD aetiology and management were collected prospectively.

FINDINGS: Data were collected on 141 wards in 32 hospitals (16 acute, 16 teaching). Point-prevalence of HOD was 4.5% (230/5142 patients; 95% confidence interval (CI) 3.9-5.0%). Teaching hospital HOD prevalence (5.9%, 95% CI 5.1-6.9%) was twice that of acute hospitals (2.8%, 95% CI 2.1-3.5%; odds ratio 2.2, 95% CI 1.7-3.0). At least one potential cause was identified in 222/230 patients (97%): 107 (47%) had a relevant underlying condition, 125 (54%) were taking antimicrobials, and 195 (85%) other medication known to cause diarrhoea. Nine of 75 tested patients were *Clostridium difficile* toxin positive (4%). Eighty (35%) patients had a documented medical assessment of diarrhoea. Documentation of HOD in medical notes correlated with testing for *C. difficile* (78% of those tested vs 38% not tested, $P < 0.001$). One-hundred and forty-four (63%) patients were not isolated following diarrhoea onset.

CONCLUSION: HOD is a prevalent symptom affecting thousands of patients across the UK health system each day. Most patients had multiple potential causes of HOD, mainly iatrogenic, but only a third had medical assessment. Most were not tested for *C. difficile* and were not isolated.

Database: Medline

44. Influence of primary care antibiotic prescribing on incidence rates of multidrug-resistant Gram-negative bacteria in hospitalised patients.

Author(s): Alnajjar, Munther S; Aldeyab, Mamoon A; Scott, Michael G; Kearney, Mary P; Fleming, Glenda; Glimore, Fiona; Farren, David; McElnay, James C

Source: Infection; Oct 2019; vol. 47 (no. 5); p. 781-791

Publication Date: Oct 2019



Publication Type(s): Journal Article

PubMedID: 31065996

Available at [Infection](#) - from Unpaywall

Abstract:

PURPOSE: Use of antibiotics can give rise to the selection of resistant bacteria. It remains unclear whether antibiotic use in primary care can influence bacterial resistance incidence in patients when hospitalised. The aim of this study is to explore the impact of prior community antibiotic usage on hospital-detected multidrug-resistant Gram-negative (MRGN) incidence rate.

METHODS: This pharmacoepidemiological study was case-control in design, and was carried out in the Antrim Area Hospital (N. Ireland) in two phases. In phase 1, the controls were matched according to: age, gender, admission ward, date of admission, and age-adjusted Charlson co-morbidity index score. During the second phase, controls were selected randomly from the total population of admissions to the hospital over the 2-year study period.

RESULTS: In phase 1, multivariate analysis revealed that prior exposure to the second- and third-generation cephalosporins ($p = 0.004$) and fluoroquinolones ($p = 0.023$) in primary care was associated with an increased likelihood of MRGN detection in inpatients. In phase 2, an independent relationship between an increased risk of identification of MRGN, while hospitalised was associated with: prolonged hospitalisation ($p < 0.001$), being elderly ($p < 0.001$), being female ($p = 0.007$), and having genitourinary disease ($p < 0.001$).

CONCLUSION: This study provides clear evidence which supports the need to optimise antibiotic use in primary care to help reduce MRGN incidence in hospitalised patients.

Database: Medline

45. Primary bacterial peritonitis in a neonate: A very rare presentation of late-onset group B streptococcal infection

Author(s): Gauden, Ruth; Mathievathaniy Muthucumaru

Source: Journal of Paediatrics and Child Health; Oct 2019; vol. 55 (no. 10); p. 1267

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [Journal of paediatrics and child health](#) - from Wiley Online Library

Database: BNI

46. Stress related disorders and subsequent risk of life threatening infections: population based sibling controlled cohort study

Author(s): Song, Huan; Fall, Katja; Fang, Fang; Erlendsdóttir, Helga; Lu, Donghao; Mataix-Cols, David; Lorena Fernández de la Cruz; Brian M D'Onofrio; Lichtenstein, Paul; Gottfreðsson, Magnús; Almqvist, Catarina; Valdimarsdóttir, Unnur A

Source: BMJ : British Medical Journal (Online); Oct 2019; vol. 367

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [BMJ](#) - from BMJ Journals

Available at [BMJ](#) - from Unpaywall

Abstract:

Objective: To assess whether severe psychiatric reactions to trauma and other adversities are associated with subsequent risk of life threatening infections.

Design: Population and sibling matched cohort study.



Setting: Swedish population. Participants 144 919 individuals with stress related disorders (post-traumatic stress disorder (PTSD), acute stress reaction, adjustment disorder, and other stress reactions) identified from 1987 to 2013 compared with 184 612 full siblings of individuals with a diagnosed stress related disorder and 1 449 190 matched individuals without such a diagnosis from the general population.

Main outcome measures: A first inpatient or outpatient visit with a primary diagnosis of severe infections with high mortality rates (ie, sepsis, endocarditis, and meningitis or other central nervous system infections) from the Swedish National Patient Register, and deaths from these infections or infections of any origin from the Cause of Death Register. After controlling for multiple confounders, Cox models were used to estimate hazard ratios of these life threatening infections.

Results: The average age at diagnosis of a stress related disorder was 37 years (55 541, 38.3% men). During a mean follow-up of eight years, the incidence of life threatening infections per 1000 person years was 2.9 in individuals with a stress related disorder, 1.7 in siblings without a diagnosis, and 1.3 in matched individuals without a diagnosis. Compared with full siblings without a diagnosis of a stress related disorder, individuals with such a diagnosis were at increased risk of life threatening infections (hazard ratio for any stress related disorder was 1.47 (95% confidence intervals 1.37 to 1.58) and for PTSD was 1.92 (1.46 to 2.52)). Corresponding estimates in the population based analysis were similar (1.58 (1.51 to 1.65) for any stress related disorder, $P=0.09$ for difference between sibling and population based comparison, and 1.95 (1.66 to 2.28) for PTSD, $P=0.92$ for difference). Stress related disorders were associated with all studied life threatening infections, with the highest relative risk observed for meningitis (sibling based analysis 1.63 (1.23 to 2.16)) and endocarditis (1.57 (1.08 to 2.30)). Younger age at diagnosis of a stress related disorder and the presence of psychiatric comorbidity, especially substance use disorders, were associated with higher hazard ratios, whereas use of selective serotonin reuptake inhibitors in the first year after diagnosis of a stress related disorder was associated with attenuated hazard ratios.

Conclusion: In the Swedish population, stress related disorders were associated with a subsequent risk of life threatening infections, after controlling for familial background and physical or psychiatric comorbidities.

Database: BNI

47. Variation in responsiveness to warranted behaviour change among NHS clinicians: novel implementation of change detection methods in longitudinal prescribing data

Author(s): Walker, Alex J; Pretis, Felix; Powell-Smith, Anna; Goldacre, Ben

Source: BMJ : British Medical Journal (Online); Oct 2019; vol. 367

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [BMJ \(Clinical research ed.\)](#) - from BMJ Journals

Available at [BMJ \(Clinical research ed.\)](#) - from Unpaywall

Abstract:

Objectives: To determine how clinicians vary in their response to new guidance on existing or new interventions, by measuring the timing and magnitude of change at healthcare institutions.

Design: Automated change detection in longitudinal prescribing data.

Setting: Prescribing data in English primary care.

Participants: English general practices.

Main outcome measures: In each practice the following were measured: the timing of the largest changes, steepness of the change slope (change in proportion per month), and magnitude of the change for two example time series (expiry of the Cerazette patent in 2012, leading to cheaper generic desogestrel alternatives becoming available; and a change in antibiotic prescribing guidelines after 2014, favouring nitrofurantoin over trimethoprim for uncomplicated urinary tract infection (UTI)).

Results: Substantial heterogeneity was found between institutions in both timing and steepness of change. The range of time delay before a change was implemented was large (interquartile range 2-14 months (median 8) for



Cerazette, and 5-29 months (18) for UTI). Substantial heterogeneity was also seen in slope following a detected change (interquartile range 2-28% absolute reduction per month (median 9%) for Cerazette, and 1-8% (2%) for UTI). When changes were implemented, the magnitude of change showed substantially less heterogeneity (interquartile range 44-85% (median 66%) for Cerazette and 28-47% (38%) for UTI).

Conclusions: Substantial variation was observed in the speed with which individual NHS general practices responded to warranted changes in clinical practice. Changes in prescribing behaviour were detected automatically and robustly. Detection of structural breaks using indicator saturation methods opens up new opportunities to improve patient care through audit and feedback by moving away from cross sectional analyses, and automatically identifying institutions that respond rapidly, or slowly, to warranted changes in clinical practice.

Database: BNI

48. Community pharmacists' knowledge about antibiotics and their perceptions of and participation in community-based antimicrobial stewardship programmes: a cross-sectional survey from central China

Author(s): Khezar Hayat; Li, Pengchao; Rosenthal, Meagen; Ji, Shiyu; Yu, Fang

Source: The Lancet; Oct 2019; vol. 394 ; p. S68

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [The Lancet](#) - from Unpaywall

Abstract:

Background: Antimicrobial resistance is one of the biggest threats to public health. Improper use of antibiotics, self-medication with antibiotics, sale of antibiotics without a prescription, and inadequate knowledge and training of health-care professionals are major factors contributing to this problem. Community-based antimicrobial stewardship programmes (ASPs) supervised by community pharmacists are important for minimising the progression of antimicrobial resistance. However, little information is available about the involvement of Chinese community pharmacists in community-based ASPs. Therefore, we investigated the knowledge of Chinese community pharmacists about antibiotics and their perceptions of, and participation in, ASPs. **Methods** A cross-sectional study was conducted by administering a validated questionnaire to community pharmacists in Xi'an, Shaanxi, central China, between March 1, 2019, and April 30, 2019. A systematic random sampling method was used to recruit registered community pharmacists. Pharmacy technicians were excluded. The questionnaire contained four sections, including one each on demographics, knowledge about antibiotics, perceptions of ASPs, and involvement in ASPs. Responses to sections two, three, and four of the questionnaire were measured by use of the 5-point Likert scale. Descriptive statistics, the Mann-Whitney U test, and Kruskal-Wallis test were used for data analysis. **Findings** Of 190 community pharmacists who participated in this study, 154 (81%) were female, 103 (54%) had more than 10 years of experience, and 148 (78%) were working in independent pharmacies. The majority of participants agreed that ASPs improve patient care (146 [77%]) and should be implemented at the community pharmacy level (188 [99%]). 187 (98%) participants believed they should attend workshops and conferences to get a proper understanding about ASPs. 172 (91%) participants said they dispense antibiotics with a valid prescription by considering physician's recommendations. Only 42 (22%) participants said they always consult with other health-care professionals about infection control and ASPs, and 31 (16%) said they always try to reduce the transmission of infections within the community. 105 (55%) participants reported that they often educate patients about the proper use of antimicrobials and problems related to antimicrobial resistance. The median score on the 5-point Likert scale for involvement in ASPs was significantly associated with sex (median score was 4 for women vs 3 for men; $p < 0.0001$). **Interpretation** In conclusion, this study revealed the positive attitude of community pharmacists in Xi'an towards community-based ASPs. However, educational interventions for community pharmacists are needed about the core principles of ASPs. Regular training and continuous educational programmes are also recommended. **Funding** This work was funded by Young Talent Support Plan, High Achiever Plan of Health Science Center, Xi'an Jiaotong University; Central University Basic Research Fund (grant number 2015qngz05); and Early Career Research Start-up Plan of Xi'an Jiaotong University.

Database: BNI



49. Knowledge, Attitudes and Practices related to standard precautions among nurses: A comparative study

Author(s): Zhu, Siyue; Kibrom Mehari Kahsay; Li, Gui

Source: Journal of Clinical Nursing; Oct 2019; vol. 28 (no. 19-20); p. 3538

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [Journal of Clinical Nursing](#) - from Wiley Online Library

Available at [Journal of Clinical Nursing](#) - from Unpaywall

Abstract:

Aim and objective: To describe and compare the Knowledge, Attitudes and Practices (KAP) pertaining to standard precautions (SPs) among nurses in China and Ethiopia.

Background: SPs are guidelines for reducing the risk of transmission of blood-borne and other pathogens in hospital settings. SPs have been widely promoted to protect healthcare workers (HCW); however, these are not fully practised worldwide, especially in resource-constrained countries like China and Ethiopia.

Design: A descriptive, cross-sectional, comparative study was performed between February–April 2018. The study followed the "Strengthening the Reporting of Observational Studies in Epidemiology" (STROBE) guideline.

Methods: Self-administered questionnaire survey of a convenience sample of 357 nurses (237 Chinese and 120 Ethiopian nurses) from one teaching hospital each in China and Ethiopia. KAP pertaining to SPs were measured.

Results: Nurses of both countries were found to have a good understanding of the concept of SPs; however, the acceptance to organisation of policies for prevention of hospital-acquired infections (HAI) was lower in Ethiopia. Fewer medical resources in Ethiopia resulted in poorer adherence to use of personal protective equipment (PPE). The usage rate of PPE (except apron and goggles) among Ethiopian nurses was significantly lower than that among Chinese nurses.

Conclusions: Both Ethiopian and Chinese nurses showed favourable attitudes towards SPs; however, Chinese nurses reported better knowledge and practices. The organisation should strengthen formal and on-the-job training, implement targeted infection prevention strategies and provide adequate medical supplies to improve infection control in Ethiopia.

Relevance to clinical practice: Our findings highlight some of the reasons for low compliance to SPs in both countries and potentially other similar settings. The information provided here can help develop infection prevention and control strategies for resource-constrained countries.

Database: BNI

50. Determinants of nurses' willingness to receive vaccines: Application of the health belief model

Author(s): I-Hui Chen; Shih-Min Hsu; Jiunn-Shyan Julian Wu; Yu-Tsang Wang; Yen-Kuang Lin; Min-Huey Chung; Pin-Hsuan Huang; Nae-Fang Miao

Source: Journal of Clinical Nursing; Oct 2019; vol. 28 (no. 19-20); p. 3430

Publication Date: Oct 2019

Publication Type(s): Journal Article

Available at [Journal of Clinical Nursing](#) - from Wiley Online Library

Available at [Journal of Clinical Nursing](#) - from Unpaywall

Abstract:

Aims and objectives: To assess the willingness of nurses to receive vaccines as recommended by Taiwan's "Immunization Recommendations for Healthcare Personnel" (IRHCP), as well as the factors associated with their willingness.



Background: Immunisation for healthcare personnel (HCP) is a means of reducing pathogen transmission. Also, vaccinating HCP reduces personnel and labour costs during an epidemic.

Methods: A cross-sectional study was conducted. A self-administered questionnaire survey targeting nurses working in various service units at three hospitals was used. In total, 413 nurses completed the questionnaire. The main outcome measure was the willingness to receive vaccines recommended by the IRHCP, and the variables we assessed included knowledge regarding the IRHCP, individual perceptions (perceived risk of contracting the infection, perceived severity of the infection and perceived transmissibility after disease onset), perceived benefits and barriers to the vaccination, cues to the vaccination and demographics. This study followed the STROBE checklist for reporting this study.

Results: The willingness of nurses to receive vaccines recommended by the IRHCP was high; the highest level of willingness was for the hepatitis B vaccine. The nurses' willingness to receive various vaccines recommended by the IRHCP was predicted by the knowledge regarding the IRHCP and perceived transmissibility after disease onset. Except the diphtheria–tetanus–acellular pertussis vaccine, perceived benefits and perceived barriers were also predictors of the willingness to receive vaccines.

Conclusions: Our results showed that interventions focusing on increasing the knowledge regarding the IRHCP and perceived transmissibility after disease onset, emphasising the benefits of the vaccination and reducing the perceived barriers to the vaccination are needed to increase nurses' willingness to receive vaccines. Relevance to clinical practice is suggested using health education courses and mass media broadcasts at the individual and societal levels to raise awareness regarding the benefits of vaccines and enhance nurse' confidence in vaccination programs.

Database: BNI

51. Clostridium Difficile

Author(s): Nielsen, Carol S R, MSN, RN, PHN, OCN®, PCCN, CMSRN; Sanchez-Vargas, Rocio, MSN, RN, PHN, CCTN; Perez, April, MSAcy, BSB

Source: Clinical Journal of Oncology Nursing; Oct 2019; vol. 23 (no. 5); p. 482

Publication Date: Oct 2019

Publication Type(s): Journal Article

Abstract:[...]EBP team members created the Five by Five initiative. Staff also were responsible for cleaning four of the five high-touch areas in the patient's environment: the bedside table, bed rails, telephone, and patient television/nurse call remote. Because of institutional restrictions on the type of equipment that environmental services staff can clean, clinical staff were responsible for cleaning the stationary physiologic monitor and cords, as well as the IV pump and poles in each patient room. [...]some environmental services staff were only cleaning the bathroom and floors and removing trash and linens instead of cleaning the high-touch areas. The institution's C. difficile rate was 91 occurrences between November 2017 and October 2018. Since institution-wide rollout of the initiative, a significant reduction in C. difficile infection rates can be observed when compared to the same time period of the previous year (54 cases from November 2017 to May 2018 versus 35 cases from November 2018 to May 2019).

Database: BNI

52. Differential rates of group B streptococcus (GBS) colonisation in pregnant women in a racially diverse area of London, UK: a cross-sectional study

Author(s): Rao, G Gopal; Hiles, S; Bassett, P; Lamagni, T

Source: BJOG; Oct 2019; vol. 126 (no. 11); p. 1347

Publication Date: Oct 2019

Publication Type(s): Journal Article



Abstract:

Objective: To describe the epidemiology of maternal group B streptococcus (GBS) colonisation by racial group.

Design: Cross-sectional study.

Setting: Antenatal clinics in London North West University Healthcare NHS Trust.

Population: Pregnant women.

Methods: Group B streptococcus (GBS) colonisation status was recorded during a screening programme for the prevention of invasive early-onset GBS infection. Information regarding age, address, ethnicity, parity, mode of delivery, body mass index (BMI), and diabetes was routinely collected. Data were analysed by multivariable analysis.

Main outcome measures: Association between GBS colonisation and putative risk factors.

Results: Overall, 29.1% (1836/6309) of the women were colonized with GBS. Multivariable analysis showed significantly higher colonisation among women of black African origin (39.5%; OR = 1.57) compared with white British women (27.4%), and lowest colonisation in women of South Asian origin (23.3%; OR = 0.8). Higher parity (≥ 2) was associated with higher colonisation (35.3%), with the odds of colonisation over 40% higher than for nulliparous women. Increasing BMI was associated with an incremental rise in colonisation from 23 to 35%. Colonisation was not associated with age, season or mode of testing.

Conclusion: This study identified high maternal GBS colonisation rates in a racially and socially diverse population. The highest rates were seen in women of black African origin and also with higher parity and BMI. Further research is needed to understand the relationship between these factors and rectovaginal colonisation.

Tweetable abstract: Study of group B streptococcus colonisation in pregnant women in London shows highest rates in black African women and those with high BMI and parity.

Database: BNI

53. Etomidate in the management of severe Cushing's disease and MRSA bacteraemia in a district general hospital in the United Kingdom.

Author(s): Wong, Stephanie Wei Ping; Yap, Yew Wen; Narayanan, Ram Prakash; Al-Jubouri, Mohammad; Grossman, Ashley; Daousi, Christina; Mahgoub, Yahya

Source: Endocrinology, diabetes & metabolism case reports; Sep 2019; vol. 2019

Publication Date: Sep 2019

Publication Type(s): Journal Article

PubMedID: 31967974

Available at [Endocrinology, diabetes & metabolism case reports](#) - from Europe PubMed Central - Open Access

Available at [Endocrinology, diabetes & metabolism case reports](#) - from Unpaywall

Abstract:

Summary: We report our experience on managing a case of florid Cushing's disease with Methicillin-resistant Staphylococcus aureus (MRSA) sepsis using intravenous etomidate in the intensive care unit of a UK district general hospital. Learning points Severe Cushing's syndrome is associated with high morbidity and mortality. Etomidate is a safe and effective medical therapy to rapidly lower cortisol levels even in the context of severe sepsis and immunosuppression. Etomidate should ideally be administered in an intensive care unit but is still feasible in a district general hospital. During treatment with etomidate, accumulation of serum 11β -deoxycortisol (11DOC) levels can cross-react with laboratory cortisol measurement leading to falsely elevated serum cortisol levels. For this reason, serum cortisol measurement using a mass spectrometry assay should ideally be used to guide etomidate prescription.

Database: Medline



54. Incisional surgical site infection following cesarean section: A national retrospective cohort study.

Author(s): Saeed, Khalid Bm; Corcoran, Paul; Greene, Richard A

Source: European journal of obstetrics, gynecology, and reproductive biology; Sep 2019; vol. 240 ; p. 256-260

Publication Date: Sep 2019

Publication Type(s): Journal Article

PubMedID: 31344664

Abstract:

OBJECTIVE: To determine the rate and associated risk factors for incisional surgical site infection following cesarean section in Ireland.

STUDY DESIGN: This study was a retrospective population-based cohort study, conducted using the Hospital In-Patient Enquiry database (HIPE) for the period 2005-2016. All women who underwent cesarean section between 2005 and 2016 in Ireland were included. Potential risk factors for incisional surgical site infection were selected based on the existing literature and their availability within the HIPE database. The risk of incisional surgical site infection following cesarean section with exact Poisson 95% confidence intervals were reported. Multivariable Poisson regression included all potential risk factors simultaneously. Risk ratios are reported with their 95% confidence intervals and P-values.

RESULTS: There were 802,182 deliveries during the study period, 219,859 of which (27.4%) were by cesarean section. There were 1396 cases of incisional surgical site infection, a risk of 0.63% (95% confidence interval: 0.60-0.67%). Public patients had approximately 20% higher risk and the risk was almost 40% higher among women aged over 35 years compared with those aged under 25 years. Most notable, related to the morbidities assessed, was the twofold increased risk of incisional surgical site infection associated with pre-existing diabetes and with urinary tract infection in pregnancy. Premature rupture of membranes, pyrexia during labour and postpartum haemorrhage each increased risk by 40-60%. Hematoma of a cesarean section wound remained by far the strongest risk factor for incisional surgical site infection.

CONCLUSION: Of all the risk factors we studied, hematoma had the strongest association with development of incisional surgical site infection. Of all women birthing by cesarean section in Ireland during 2005-2016, 25% had at least one of the risk factors identified by our study. Approximately 40% of the incisional surgical site infection cases came from this 25%. This might suggest that a universal approach to reducing risk of surgical site infection is warranted.

Database: Medline

55. The impact of childhood pneumococcal vaccination on hospital admissions in England: a whole population observational study.

Author(s): Shiri, Tinevimbo; McCarthy, Noel D; Petrou, Stavros

Source: BMC infectious diseases; Jun 2019; vol. 19 (no. 1); p. 510

Publication Date: Jun 2019

Publication Type(s): Journal Article

PubMedID: 31182036

Available at [BMC infectious diseases](#) - from BioMed Central

Available at [BMC infectious diseases](#) - from Europe PubMed Central - Open Access

Available at [BMC infectious diseases](#) - from EBSCO (MEDLINE Complete)

Available at [BMC infectious diseases](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC infectious diseases](#) - from Unpaywall

Abstract:



BACKGROUND: Pneumococcal infections are major causes of morbidity and mortality worldwide. We use routine hospital admissions data and time-series modelling analysis to estimate the impact of the seven and thirteen valent pneumococcal conjugate vaccines (PCV7 and PCV13) on hospital admissions due to pneumococcal disease in England.

METHODS: Hospital admissions for pneumococcal meningitis, bacteraemia and pneumonia between January 1, 2003 and December 31, 2015 were identified from the national Hospital Episode Statistics database for all age groups in England. We model the impact of pneumococcal vaccination using interrupted time series analysis. Hospital admissions prior to vaccine introduction were extrapolated to predict the expected number of admissions in the absence of pneumococcal vaccines. Admissions avoided over time were estimated by comparing the fitted interrupted time series and the expected model for no vaccination in a Bayesian framework.

RESULTS: Overall, there were 43,531 (95% credible interval (CrI): 36486-51,346) fewer hospital admissions due to bacteraemia, meningitis and pneumonia in England during the period from 2006 to 2015 than would have been expected if pneumococcal vaccines had not been implemented, with the majority of hospital admissions avoided due to pneumonia. Among young children reductions in meningitis were more common, while among adults reductions in pneumonia admissions were relatively more important, with no evidence for reduced bacteraemia and meningitis among older adults. We estimated that 981 (95% CrI: 391-2018), 749 (95% CrI: 295-1442) and 1464 (95% CrI: 793-2522) bacteraemia, meningitis and pneumonia related hospital admissions, respectively, were averted in children < 2 years of age.

CONCLUSIONS: Substantial reductions in hospital admissions for bacteraemia, meningitis and pneumonia in England were estimated after the introduction of childhood vaccination, with indirect effects being responsible for most of the hospital admissions avoided.

Database: Medline

56. Enterovirus and parechovirus meningitis in infants younger than 90 days old in the UK and Republic of Ireland: a British Paediatric Surveillance Unit study.

Author(s): Kadambari, Seilesh; Braccio, Serena; Ribeiro, Sonia; Allen, David J; Pebody, Richard; Brown, David; Cunney, Robert; Sharland, Mike; Ladhani, Shamez

Source: Archives of disease in childhood; Jun 2019; vol. 104 (no. 6); p. 552-557

Publication Date: Jun 2019

Publication Type(s): Journal Article

PubMedID: 30530486

Available at [Archives of disease in childhood](#) - from BMJ Journals

Available at [Archives of disease in childhood](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Archives of disease in childhood](#) - from Unpaywall

Abstract:

OBJECTIVES: This study aimed to prospectively collect detailed clinical information for all enterovirus (EV) and human parechovirus (HPeV) meningitis cases in infants aged <90 days in the UK and Ireland.

PARTICIPANTS, DESIGN AND SETTING: Prospective, active national surveillance during July 2014 to July 2015 through the British Paediatric Surveillance Unit. Reporting paediatricians completed questionnaires requesting information on clinical presentation, investigations, management and outcomes at hospital discharge and after 12 months.

MAIN OUTCOME MEASURES: To describe the clinical burden of EV and HPeV meningitis in infants aged <90 days.

RESULTS: During the 13-month surveillance period, 703 cases (668 EV, incidence 0.79/1,000 live-births; 35 HPeV, 0.04/1,000 live-births) were identified. The most common clinical presentations were fever (EV: 570/668(85%); HPeV: 28/35(80%)), irritability (EV: 441/668(66%); HPeV: 23/35(66%)) and reduced feeding (EV: 363/668(54%); HPeV 23/35(66%)). Features of circulatory shock were present in 27% (182/668) of EV and 43% (15/35) of HPeV cases. Overall, 11% (76/668) of EV and 23% (8/35) of HPeV cases required intensive care support. Nearly all cases (678/703, 96%) were confirmed by cerebrospinal fluid (CSF) PCR, with 52% (309/600) having normal CSF white cell count for



age. Two infants with EV meningitis died (2/668, 0.3%) and four survivors (4/666, 0.6%) had long-term complications at 12 months' follow-up. Infants with HPeV meningitis survived without sequelae. Overall 189 infants had a formal hearing test and none had sensorineural hearing loss.

CONCLUSION: The incidence of laboratory-confirmed EV/HPeV meningitis in young infants is more than twice that for bacterial meningitis. Less than 1% will develop severe neurological complications or die of their infection. Further studies are required to formally assess long-term neurodevelopmental sequelae.

Database: Medline



#	Database	Search term	Results
1	Medline	exp "CLOSTRIDIUM INFECTIONS"/ OR clostridium difficile	36525
2	Medline	exp STAPHYLOCOCCUS/ OR "methicillin resistant staphylococcus aureus" OR MRSA	113324
3	Medline	exp "METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS"/	14166
4	Medline	("vancomycin resistant enterococci").ti,ab	2866
5	Medline	exp "VANCOMYCIN-RESISTANT ENTEROCOCCI"/	623
6	Medline	exp "VANCOMYCIN RESISTANCE"/	3338
7	Medline	exp ENTEROCOCCUS/ OR (bacter* ADJ meningitis) OR (streptococc* ADJ infection*)	63750
8	Medline	exp "STREPTOCOCCAL INFECTIONS"/	78774
9	Medline	exp MENINGITIS/	55278
10	Medline	(coli ADJ infection).ti,ab	1729
11	Medline	exp "ESCHERICHIA COLI"/	277195
12	Medline	exp "CROSS INFECTION"/	58808
13	Medline	exp "SURGICAL WOUND INFECTION"/	36036
14	Medline	(1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13)	628667
15	Medline	(anti-infect* ADJ2 agent*).ti,ab	1048
16	Medline	exp "ANTI-INFECTIVE AGENTS"/	1946059
17	Medline	(antibiotic*).ti,ab	328236
18	Medline	(15 OR 16 OR 17)	2080851



19	Medline	(14 AND 18)	185592
20	Medline	(preven* OR clean* OR hygiene OR handwash* OR disinfect* OR control*).ti,ab	4946903
21	Medline	(infection).ti,ab	1067020
22	Medline	exp INFECTIONS/	2621269
23	Medline	(infection ADJ2 control).ti,ab	30293
24	Medline	exp "INFECTION CONTROL"/	63053
25	Medline	(20 OR 21 OR 22 OR 23 OR 24)	7380941
26	Medline	(14 AND 25)	369665
27	Medline	(resistance OR resistant).ti,ab	976112
29	Medline	exp "DRUG RESISTANCE, BACTERIAL"/ OR exp "DRUG RESISTANCE, MICROBIAL"/	162098
30	Medline	(27 OR 29)	1014622
31	Medline	(14 AND 30)	109415
32	Medline	(19 AND 26 AND 31)	51499
33	Medline	((hospital OR acute setting OR (community ADJ2 care)) AND ("national health service" OR NHS OR UK OR "united kingdom" OR britain OR england OR scotland OR wales OR ireland)).ti,ab	31126
34	Medline	(32 AND 33) [DT 2019-2020]	17
35	Medline	(19 OR 26 OR 31)	442220
36	Medline	(33 AND 35) [DT 2019-2020]	68
37	BNI	(clostridium infection* OR clostridium 655 difficile).ti,ab	



38	BNI	"STAPHYLOCOCCUS INFECTIONS"/	1270
39	BNI	("methicillin resistant staphylococcus aureus").ti,ab	556
40	BNI	(MRSA).ti,ab	1266
41	BNI	(vancomycin resistance).ti,ab	68
42	BNI	(vancomycin-resistance enterococci).ti,ab	2
43	BNI	(enterococcus).ti,ab	160
44	BNI	(bacter* ADJ meningitis).ti,ab	222
45	BNI	(streptococc* ADJ infection*).ti,ab	143
46	BNI	MENINGITIS/	1070
47	BNI	(coli ADJ2 infection*).ti,ab	91
48	BNI	(escherichia coli).ti,ab	500
49	BNI	(cross infection).ti,ab	844
50	BNI	(surgical wound infection).ti,ab	341
51	BNI	(37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49 OR 50)	5370
52	BNI	(anti-infect* ADJ2 agent*).ti,ab	11
54	BNI	(antibiotic*).ti,ab	6088
55	BNI	(anti infective agent*).ti,ab	15
56	BNI	(52 OR 54 OR 55)	6098
57	BNI	(51 AND 56)	823
58	BNI	(preven* OR clean* OR hygiene OR handwash* OR disinfect* OR control*).ti,ab	121065



59	BNI	(infection*).ti,ab	31544
61	BNI	(infection ADJ2 control).ti,ab	3540
62	BNI	(58 OR 59 OR 61)	139041
63	BNI	(51 AND 62)	3701
64	BNI	(resistance OR resistant).ti,ab	9008
66	BNI	(drug resistance).ti,ab	841
67	BNI	(64 OR 66)	9008
68	BNI	(51 AND 67)	1291
69	BNI	(57 OR 63 OR 68)	4140
70	BNI	(57 OR 63 OR 68) [DT 2019-2020]	168

