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Guidance and Guidelines

Public Health England

Guidance
Antimicrobial stewardship: Start smart - then focus
First published: 17 November 2011
Last updated: 25 March 2015, see all updates
Part of: Antimicrobial Resistance (AMR)
Applies to: England
The aim of this toolkit is to provide an outline of evidence-based antimicrobial stewardship in the secondary healthcare setting.

Guidance
Antimicrobial consumption data; validation protocol for NHS acute trusts
First published: 25 March 2015
Acute NHS trusts are asked to validate their antibiotic prescribing data using this Public Health England (PHE) validation protocol.

National Institute for Health and Care Excellence (NICE)

NICE Shared learning examples
These show how NICE guidance and standards have been put into practice by a range of health, local government and social care organisations.
Reducing the risk of C Difficile by reviewing prescribing of high risk antibiotics

New and Updated Cochrane Systematic Reviews

New Reviews – March 2015
Chlorhexidine skin or cord care for prevention of mortality and infections in neonates

Updated Reviews – March 2015
Azithromycin for acute lower respiratory tract infections
Intravenous immunoglobulin for suspected or proven infection in neonates

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Title: Assessing patient awareness of proper hand hygiene.
Citation: Nursing, May 2015, vol. 45, no. 5, p. 27-30 (May 2015)
CLABSI reduction efforts should include efforts to minimize contamination of NCs. The primary outcome was the difference revealed by Poisson multivariate regression analysis. The secondary outcome was a comparison of organism-specific CLABSI rates by NC type. Results. Among 15,845 hospital admissions, 140,186 central-line days and 221 CLABSIIs were recorded during the study period. In a multivariate model, the CLABSI rate per 1,000 central-line days was lower with silver-coated NCs than with standard NCs (1.21 vs 1.79; $P=0.005$). A lower CLABSI rate per 1,000 central-line days for the silver-coated NCs versus the standard NCs was observed with S. aureus (0.11 vs 0.30, $P=0.02$), enterococci (0.10 vs 0.27, $P=0.03$), and Gram-negative organisms (0.28 vs 0.63, $P=0.003$) but not with coagulase-negative staphylococci (0.31 vs 0.36) or Candida spp. (0.42 vs 0.40). Conclusions. The use of silver-coated NCs decreased the CLABSI rate by 32%. CLABSI reduction efforts should include efforts to minimize contamination of NCs.

Abstract: The authors hypothesized that patients may not understand the forms of effective hand hygiene employed in the hospital environment. Multiple studies demonstrate the importance of hand hygiene in reducing healthcare-associated infections (HAIS). Extensive research about how to improve compliance has been conducted. Patients' perceptions of proper hand hygiene were evaluated when caregivers used soap and water, waterless hand cleaner, or a combination of these. No significant differences were observed, but many patients reported they did not notice whether their providers cleaned their hands. Educating patients and their caregivers about the protection afforded by proper, consistent hand hygiene practices is important. Engaging patients to monitor healthcare workers may increase compliance, reduce the spread of infection, and lead to better overall patient outcomes. This study revealed a need to investigate the effects of patient education on patient perceptions of hand hygiene. Results of this study appear to indicate a need to focus on patient education and the differences between soap and water versus alcohol-based hand sanitizers as part of proper hand hygiene. Researchers could be asking: "Why have patients not been engaged as members of the healthcare team who have the most to lose?"

2. Title: Bloodborne viruses and workplace injury risk

Abstract: Staff working in healthcare settings face risk from bloodborne viruses through occupational injuries. Nurses and healthcare assistants (HCAs) represent the biggest group of healthcare workers reporting exposure to bloodborne viruses, with more than half of injuries among this group between 2004 and 2013 involving a needlestick injury. Action is needed to reduce these risks, such as the procurement and use of safety-engineered devices and the provision of safe working conditions. Raising awareness of needlestick injuries among all healthcare staff may also help.

3. Title: Comparison of a silver-coated needleless connector and a standard needleless connector for the prevention of central line-associated bloodstream infections

Abstract: Objective. To assess the impact of a novel, silver-coated needleless connectors (NCs) on central-line-associated bloodstream infection (CLABSI) rates compared with a mechanically identical NCs without a silver coating. Design. Prospective longitudinal observation study setting. Two 500-bed university hospitals patients. All hospitalized adults from November 2009 to June 2011 with non-hemodialysis central lines interventions. Hospital A started with silver-coated NCs and switched to standard NCs in September 2010; hospital B started with standard NCs and switched to silver-coated NCs. The primary outcome was the difference revealed by Poisson multivariate regression in CLABSI rate using standard Centers for Disease Control and Prevention surveillance definitions. The secondary outcome was a comparison of organism-specific CLABSI rates by NC type. Results. Among 15,845 hospital admissions, 140,186 central-line days and 221 CLABSIIs were recorded during the study period. In a multivariate model, the CLABSI rate per 1,000 central-line days was lower with silver-coated NCs than with standard NCs (1.21 vs 1.79; incidence rate ratio =0.68 [95% CI: 0.52-0.89], $P=0.005$). A lower CLABSI rate per 1,000 central-line days for the silver-coated NCs versus the standard NCs was observed with S. aureus (0.11 vs 0.30, $P=0.02$), enterococci (0.10 vs 0.27, $P=0.03$), and Gram-negative organisms (0.28 vs 0.63, $P=0.003$) but not with coagulase-negative staphylococci (0.31 vs 0.36) or Candida spp. (0.42 vs 0.40). Conclusions. The use of silver-coated NCs decreased the CLABSI rate by 32%. CLABSI reduction efforts should include efforts to minimize contamination of NCs.

4. Title: Effect of cleaning and disinfection of toys on infectious diseases and micro-organisms in daycare nurseries

Abstract: To determine the efficacy of cleaning and disinfection of toys on the incidence of infections in daycare nurseries.
Abstract: Background: The rising number of children in daycare nurseries increases opportunities for the transmission of infectious diseases. Pathogens may be transmitted directly from child to child via sneezing, coughing and touching, or indirectly via the environment. Toys are among the fomites with the highest pathogen load, but their role in disease transmission is unknown. Aim: To determine if washing and disinfection of toys can reduce sickness absence and microbial pathogen load in the nursery environment. Methods: Twelve nurseries (caring for 587 children) were randomized to intervention and control groups. The intervention consisted of washing and disinfection of toys and linen every two weeks for three months by a commercial cleaning company. The extent and causes of sickness absence among the children were recorded in both groups before and after introduction of the intervention. Ten sampling points in each nursery were examined for bacteria and respiratory viruses. Results: The presence of respiratory virus DNA/RNA was widespread, but very few pathogenic bacteria were found in the environment. The intervention reduced the presence of adenovirus [odds ratio (OR) 2.4, 95% confidence interval (CI) 1.1-5.0], rhinovirus (OR 5.3, 95% CI 2.3-12.4) and respiratory syncytial virus (OR 4.1, 95% CI 1.5-11.2) compared with the control group, but the intervention had no effect on sickness absence or disease patterns in the nurseries. Conclusion: Although cleaning and disinfection of toys every two weeks can decrease the microbial load in nurseries, it does not appear to reduce sickness absence among nursery children.

Publication type: Journal: Article
Source: EMBASE

5.Title: Evidence update on prevention of surgical site infection.
Citation: Current Opinion in Infectious Diseases, 01 April 2015, vol./is. 28/2(158-163), 09517375
Author(s): Leaper, David, Ousey, Karen
Language: English
Abstract: PURPOSE OF REVIEW: Surgical site infection (SSI) is a common healthcare-associated infection and complicates up to 10-20% of operations with considerable strain on healthcare resources. Apart from the widely adopted use of appropriate hair removal, antibiotic prophylaxis, avoidance of hypothermia and perioperative glycaemic control to reduce SSIs, this review has considered new research and systematic reviews, and whether their findings should be included in guidelines. RECENT FINDINGS: The efficacy of preoperative bathing/showering, antibiotic prophylaxis for clean surgery and perioperative oxygen supplementation to reduce the risk of SSI is still in doubt. By contrast, the use of 2% chlorhexidine in alcohol skin preparation, postoperative negative pressure wound therapy and antiseptic surgical dressings do show promise. Antimicrobial sutures in independent meta-analyses were found to reduce the risk of SSI after all classes of surgery (except dirty) whereas the use of wound guards, or diathermy skin incision (compared with scalpel incision), did not. SUMMARY: The incidence of SSI after surgery is not falling. Based on this review of published trials and evidence-based systematic reviews some advances might be included into these care bundles. More research is needed together with improved compliance with care bundles.
Publication type: journal article
Source: EMBASE

6.Title: Face touching: a frequent habit that has implications for hand hygiene.
Citation: American journal of infection control, Feb 2015, vol. 43, no. 2, p. 112-114 (February 2015)
Author(s): Kwok, Yen Lee Angela, Gralton, Jan, McLaws, Mary-Louise
Abstract: There is limited literature on the frequency of face-touching behavior as a potential vector for the self-inoculation and transmission of Staphylococcus aureus and other common respiratory infections. A behavioral observation study was undertaken involving medical students at the University of New South Wales. Their face-touching behavior was observed via videotape recording. Using standardized scoring sheets, the frequency of hand-to-face contacts with mucosal or nonmucosal areas was tallied and analyzed. On average, each of the 26 observed students touched their face 23 times per hour. Of all face touches, 44% (1,024/2,346) involved contact with a mucous membrane, whereas 56% (1,322/2,346) of contacts involved nonmucosal areas. Of mucous membrane touches observed, 36% (372) involved the mouth, 31% (318) involved the nose, 27% (273) involved the eyes, and 6% (61) were a combination of these regions. Increasing medical students' awareness of their habituated face-touching behavior and improving their understanding of self-inoculation as a route of transmission may help to improve hand hygiene compliance. Hand hygiene programs aiming to improve compliance with before and after patient contact should include a message that mouth and nose touching is a common practice. Hand hygiene is therefore an essential and inexpensive preventive method to break the colonization and transmission cycle associated with self-inoculation. Crown Copyright © 2015. Published by Elsevier Inc. All rights reserved.
Source: Medline
Abstract: Only a portion of hospital-acquired Clostridium difficile infections can be traced back to source patients identified as having symptomatic disease. Antibiotic exposure is the main risk factor for C difficile infection for individual patients and is also associated with increased asymptomatic shedding. Contact with patients taking antibiotics within the same hospital ward may be a transmission risk factor for C difficile infection, but this hypothesis has never been tested. To obtain a complete portrait of inpatient risk that incorporates innate patient risk factors and transmission risk factors measured at the hospital ward level and to investigate ward-level rates of antibiotic use and C difficile infection risk. A 46-month (June 1, 2010, through March 31, 2014) retrospective cohort study of inpatients 18 years or older in a large, acute care teaching hospital composed of 16 wards, including 5 intensive care units and 11 non-intensive care unit wards. Patient-level risk factors (eg, age, comorbidities, hospitalization history, antibiotic exposure) and ward-level risk factors (eg, antibiotic therapy per 100 patient-days, hand hygiene adherence, mean patient age) were identified from hospital databases. Incidence of hospital-acquired C difficile infection as identified prospectively by hospital infection prevention and control staff. A total of 255 of 34298 patients developed C difficile (incidence rate, 5.95 per 10 000 patient-days; 95% CI, 5.26-6.73). Ward-level antibiotic exposure varied from 21.7 to 56.4 days of therapy per 100 patient-days. Each 10% increase in ward-level antibiotic exposure was associated with a 2.1 per 10 000 (P

Source: Medline

8. Title: Impact of infection control interventions on rates of Staphylococcus aureus bacteraemia in National Health Service acute hospitals, East Midlands, UK, using interrupted time-series analysis.

Citation: Journal of Hospital Infection, 01 May 2015, vol./is. 90(1)(28-37), 01956701


Language: English

Abstract: BACKGROUND: Reducing healthcare-associated infection (HCAI) is a UK national priority. Multiple national and regional interventions aimed at reduction have been implemented in National Health Service acute hospitals, but assessment of their effectiveness is methodologically challenging. AIM: To assess the effectiveness of national and regional interventions undertaken between 2004 and 2008 on rates of meticillin-resistant Staphylococcus aureus (MRSA) and meticillin-sensitive Staphylococcus aureus (MSSA) bacteraemia within acute hospitals in the East Midlands, using interrupted time-series analysis. METHODS: We used segmented regression to compare rates of MRSA and MSSA bacteraemia in the pre-intervention, implementation, and post-intervention phases for combined intervention packages in eight acute hospitals. FINDINGS: Most of the change in MSSA and MRSA rates occurred during the implementation phase. During this phase, there were significant downward trends in MRSA rates for seven of eight acute hospital groups; in four, this was a steeper quarter-on-quarter decline compared with the pre-intervention phase, and, in one, an upward trend in the pre-intervention phase was reversed. Regarding MSSA, there was a significant positive effect in four hospital groups: one upward trend during the pre-intervention phase was reversed, two upward trends plateaued, and in one hospital group an indeterminate trend decreased significantly. However, there were significant increasing trends in quarterly MSSA rates in four hospital groups during the implementation or post-intervention periods. CONCLUSION: The impact of interventions varied by hospital group but the overall results suggest that national and regional campaigns had a beneficial impact on MRSA and MSSA bacteraemia within the East Midlands.

Publication type: journal article
Source: CINAHL

9. Title: Infection prevention and antimicrobial stewardship: important in all settings.

Citation: Healthcare Infection, 01 March 2015, vol./is. 20/1(1-(3), 18355617

Author(s): Friedman, N. Deborah

Language: English

Abstract: The application of epidemiologic and scientific principles together with statistical analysis to prevent or reduce the rates of infection defines infection control and has been shown to be cost-effective. However, infection control in acute hospitals is only the very beginning. In order to effectively prevent infection, infection control programs need to expand to other settings. This themed edition of Healthcare Infection highlights issues relevant to infection control and antimicrobial stewardship (AMS) outside of the acute hospital setting.

Publication type: journal article
Source: CINAHL
10. Title: Infection prevention and control
Citation: Nursing Standard, Mar 2015, vol. 29, no. 29, p. 37-42, 0029-6570 (March 18, 2015)
Author(s): Pegram, Anne, Bloomfield, Jacqueline
Abstract: All newly registered graduate nurses are required to have the appropriate knowledge and understanding to perform the skills required for patient care, specifically the competencies identified in the Nursing and Midwifery Council’s essential skills clusters. This article focuses on the third essential skills cluster - infection prevention and control. It provides an overview and discussion of the key skills and behaviours that must be demonstrated to meet the standards set by the Nursing and Midwifery Council. In doing so, it considers the key principles of infection prevention and control, including local and national policies, standard infection control precautions, risk assessment, standard isolation measures and asepsis. [PUBLICATION] 26 references
Source: BNI

11. Title: Managing skin and soft-tissue infection and nosocomial pneumonia caused by MRSA: A 2014 follow-up survey
Citation: International Journal of Antimicrobial Agents, April 2015, vol./is. 45/S1(S1-14), 0924-8579;1872-7913 (24 Apr 2015)
Author(s): Dryden M., Andrasevic A.T., Bassetti M., Bouza E., Chastre J., Baguneid M., Esposito S., Giamarello H., Gyssens I., Nathwani D., Unal S., Voss A., Wilcox M.
Language: English
Abstract: As a follow-up to our 2009 survey, in order to explore opinion and practice on the epidemiology and management of meticillin-resistant Staphylococcus aureus (MRSA) in Europe, we conducted a second survey to elicit current opinions on this topic, particularly around antibiotic choice, dose, duration and route of administration. We also aimed to further understand how the management of MRSA has evolved in Europe during the past 5 years. Members of an expert panel of infectious diseases specialists convened in London (UK) in January 2014 to identify and discuss key issues in the management of MRSA. Following this meeting, a survey was developed comprising 36 questions covering a wide range of topics on MRSA complicated skin and soft-tissue infection and nosocomial pneumonia management. The survey instrument, a web-based questionnaire, was sent to the International Society of Chemotherapy for distribution to registered European infection societies and their members. This article reports the survey results from the European respondents. At the time of the original survey, the epidemiology of MRSA varied significantly across Europe and there were differing views on best practice. The current findings suggest that the epidemiology of healthcare-associated MRSA in Europe is, if anything, even more polarised, whilst community-acquired MRSA has become much more common. However, there now appears to be a much greater knowledge of current treatment/management options, and antimicrobial stewardship has moved forward considerably in the 5 years since the last survey.
Publication type: Journal: Article
Source: EMBASE

12. Title: Mental models: a basic concept for human factors design in infection prevention.
Citation: The Journal of hospital infection, Apr 2015, vol. 89, no. 4, p. 335-339 (April 2015)
Author(s): Sax, H, Clack, L
Abstract: Much of the effort devoted to promoting better hand hygiene is based on the belief that poor hand hygiene reflects poor motivation. We argue, however, that automatic unconscious behaviour driven by ‘mental models’ is an important contributor to what actually happens. Mental models are concepts of reality - imaginary, often blurred, and sometimes unstable. Human beings use them to reduce mental load and free up capacity in the conscious mind to focus on deliberate activities. They are pragmatic solutions to the complexity of life. Knowledge of such mental processes helps healthcare designers and clinicians overcome barriers to behavioural change. This article reviews the concept of mental models and considers how it can be used to improve hand hygiene and patient safety. Copyright © 2015 The Healthcare Infection Society. Published by Elsevier Ltd. All rights reserved.
Source: Medline

13. Title: Norovirus introduction routes into nursing homes and risk factors for spread: a systematic review and meta-analysis of observational studies
Citation: Journal of Hospital Infection, Mar 2015, vol. 89, no. 3, p. 163-178, 0195-6701 (March 2015)
Author(s): Petrigiani, M., Van Beek, J., Borsboom, G., Richardus, J.H., Koopmans, M.
Abstract: Norovirus causes substantial morbidity and mortality in nursing homes, with high attack rates in residents and staff. Immediate implementation of infection control measures is crucial. The aim of this review was to assess the evidence for sources and modes of introduction of norovirus, and factors contributing to spread. A systematic
review of the literature was performed, including peer-reviewed original studies on outbreaks confirmed by reverse transcriptase-polymerase chain reaction. Data on source, index case, transmission mode, attack rate, outbreak duration, and risk factors were extracted. Attack rate and outbreak duration were compared by mode of introduction. Based on the selection criteria, 40 outbreak reports and 18 surveillance studies were included. There is little systematic information available on norovirus introduction into nursing homes, but, from evidence obtained from outbreak reports, it was determined that outbreaks often start with single index cases (57.5%), associated with higher attack rates among residents \( (P = 0.02) \). Foodborne introduction was described for 7% of outbreak reports that were characterized by finding multiple index cases. In surveillance studies only 0.7% of outbreaks was reported to be foodborne, 28.5% as person-to-person, and 70.8% remained unknown or not mentioned. Risk factor analyses suggested that transmission was associated with bedside care and exposure to vomit. These findings lead to the following recommendations: (i) to standardize outbreak reports; (ii) to improve early detection and isolation of sporadic cases; (iii) to improve personal hygiene of staff especially with highly dependent residents; and (iv) to comply with protocols to avoid exposure to vomit. [PUBLICATION] 40 references

Source: BNI

14. Title: Preventing healthcare-associated infections: the role of surveillance
Citation: Nursing Standard, Feb 2015, vol. 29, no. 23, p. 52-58, 0029-6570 (February 4, 2015)
Author(s): Mitchell, Brett G, Russo, Philip L
Abstract: Surveillance of healthcare-associated infections is central to healthcare epidemiology and infection control programmes and a critical factor in the prevention of these infections. By definition, the term 'infection prevention' implies that healthcare-associated infections may be preventable. The purpose of surveillance is to provide quality data that can be used in an effective monitoring and alert system and to reduce the incidence of preventable healthcare-associated infections. This article examines the purpose of surveillance, explains key epidemiological terms, provides an overview of approaches to surveillance and discusses the importance of validation. [Continuing Professional Development, NS779] [PUBLICATION] 36 references

Source: BNI

15. Title: Protecting the frontline: Designing an infection prevention platform for preventing emerging respiratory viral illnesses in healthcare personnel
Citation: Infection Control and Hospital Epidemiology, March 2015, vol./is. 36/3(336-345), 0899-823X (01 Mar 2015)
Author(s): Branch-Elliman W., Price C.S., McGeer A., Perl T.M.
Language: English
Abstract: Healthcare personnel often find themselves on the frontlines of any epidemic, and may be at particularly high risk of acquiring respiratory viral illnesses when compared to the general population. Many aspects dictate how respiratory viruses spread both inside the hospital and out: Elements to consider include the specific type of virus being targeted for prevention, as well as environmental conditions and host factors, such as age and immune status. Due to the diverse nature of these agents, multiple modes of transmission, including contact, droplet, aerosol, and transocular, must be considered when designing an effective infection prevention program. In this review, we examine the data behind current theories of respiratory virus transmission and key elements of any respiratory illness prevention program. We also highlight other influences that may come into play, such as the cost-effectiveness of choosing one respiratory protection strategy over another.
Publication type: Journal: Article
Source: EMBASE

16. Title: Response to the Ebola crisis in Sierra Leone
Citation: Nursing Standard, Feb 2015, vol. 29, no. 26, p. 37-41, 0029-6570 (February 25, 2015)
Author(s): Davies, Beauty Chiedza, Bowley, Douglas, Roper, Katrina
Abstract: The Ebola outbreak in 2014 marked the first time that an epidemic of this viral haemorrhagic fever had occurred in West Africa. From its origin in Guinea, the outbreak rapidly increased to become a humanitarian crisis affecting all aspects of life in the three countries worst affected: Guinea, Sierra Leone and Liberia. Improving understanding of Ebola virus disease among the general population and instigating the behavioural changes required to help break the epidemic were central to the public health response. This article explores some of the misconceptions about Ebola as it spread into Sierra Leonean communities, and the social mobilisation response of the government of Sierra Leone. It is a reflective account of conversations with Sierra Leonean nationals during a military deployment at the International Security Advisory Team headquarters medical treatment facility in Freetown. [PUBLICATION] 24 references
Source: BNI
17. Title: Risk factors for periprosthetic joint infection after total joint arthroplasty: A systematic review and meta-analysis
Citation: Journal of Hospital Infection, February 2015, vol./is. 89/2(82-89), 0195-6701;1532-2939 (01 Feb 2015)
Author(s): Zhu Y., Zhang F., Chen W., Liu S., Zhang Q., Zhang Y.
Language: English
Abstract: Many of the mooted risk factors associated with periprosthetic joint infection (PJI) after total joint arthroplasty (TJA) remain controversial and are not well characterized. Online and manual searches were performed using Medline, Embase, Chinese National Knowledge Infrastructure and the Cochrane Central Database from January 1980 to March 2014). For inclusion, studies had to meet the quality assessment criteria of the CONSORT statement, and be concerned with evaluation of risk factors for PJI after TJA. Two reviewers extracted the relevant data independently and any disagreements were resolved by consensus. Fourteen studies were included in this meta-analysis. The following significant risk factors for PJI were identified: body mass index (both continuous and dichotomous variables); diabetes mellitus; corticosteroid therapy; hypoalbuminaemia; history of rheumatoid arthritis; blood transfusion; presence of a wound drain; wound dehiscence; superficial surgical site infection; coagulopathy; malignancy, immunodepression; National Nosocomial Infections Surveillance Score >2; other nosocomial infection; prolonged operative time; and previous surgery. Factors that were not significantly associated with PJI were: cirrhosis; hypothyroidism; urinary tract infection; illicit drug abuse; alcohol abuse; hypercholesterolaemia; hypertension, ischaemic heart disease; peptic ulcer disease; hemiplegia or paraplegia; dementia; and operation performed by a staff surgeon (vs a trainee). Strategies to prevent PJI after TJA should focus, in particular, on those patients at greatest risk of infection according to their individual risk factors.
Publication type: Journal: Review
Source: EMBASE

18. Title: Root cause analysis to support infection control in healthcare premises.
Citation: Journal of Hospital Infection, 01 April 2015, vol./is. 89/4(331-334), 01956701
Author(s): Venier, A-G
Language: English
Abstract: Infection control teams (ICTs) seek to prevent healthcare-associated infections (HCAIs). They undertake surveillance and prevention, promote safety and quality of care, and evaluate and manage risk. Root cause analysis (RCA) can support this work but is not widely used by ICTs. This paper describes how ICTs can use RCA to enhance their day-to-day work. Many different tools and methods exist for RCA. Its primary aim is to identify the factors that have led to HCAI, but RCA can also be used for near-misses. A team effort and multidisciplinary work are usually required. Published accounts and personal experience in the field indicate that an ICT that correctly uses RCA implements more effective prevention measures, improves practice and collaborative working, enhances teamwork, and reduces the risk of HCAI. RCA should be promoted among ICTs because it adds value to their work and helps to develop a hospital culture that anticipates and pre-empts problems.
Publication type: journal article
Source: CINAHL

19. Title: Screening and isolation to control meticillin-resistant Staphylococcus aureus: Sense, nonsense, and evidence
Citation: The Lancet, March 2015, vol./is. 385/9973(1146-1149), 0140-6736;1474-547X (21 Mar 2015)
Author(s): Fatkenheuer G., Hirschel B., Harbarth S.
Language: English
Publication type: Journal: Review
Source: EMBASE
Full text: Available Lancet at Lancet, The

20. Title: Sharp truth: health care workers remain at risk of bloodborne infection.
Author(s): Rice, B D, Tomkins, S E, Ncube, F M
Abstract: In 2013, new regulations for the prevention of sharps injuries were introduced in the UK. All health care employers are required to provide the safest possible working environment by preventing or controlling the risk of sharps injuries. To analyse data on significant occupational sharps injuries among health care workers in England, Wales and Northern Ireland before the introduction of the 2013 regulations and to assess bloodborne virus seroconversions among health care workers sustaining a blood or body fluid exposure. Analysis of 10 years of
information on percutaneous and mucocutaneous exposures to blood or other body fluids from source patients infected with a bloodborne virus, collected in England, Wales and Northern Ireland through routine surveillance of health care workers reported for the period 2002-11. A total of 2947 sharps injuries involving a source patient infected with a bloodborne virus were reported by health care workers. Significant sharps injuries were 67% higher in 2011 compared with 2002. Sharps injuries involving an HIV-, hepatitis B virus- or hepatitis C virus (HCV)-infected source patient increased by 107, 69 and 60%, respectively, between 2002 and 2011. During the study period, 14 health care workers acquired HCV following a sharps injury. Our data show that during a 10-year period prior to the introduction of new regulations in 2013, health care workers were at risk of occupationally acquired bloodborne virus infection. To prevent sharps injuries, health care service employers should adopt safety-engineered devices, institute safe systems of work and promote adherence to standard infection control procedures. © The Author 2015. Published by Oxford University Press on behalf of the Society of Occupational Medicine. All rights reserved. For Permissions, please email: journals.permissions@oup.com.

Source: Medline

21.Title: Sharps injuries in a teaching hospital: changes over a decade.
Author(s): Kevitt, F, Hayes, B
Abstract: Sharps injuries create a high volume of occupational health (OH) workload in the health care setting. The deadline for implementation of the European Sharps Directive was 11 May 2013. To compare the epidemiology of sharps injuries reported in a large Irish teaching hospital in 2008-10 with those reported between 1998 and 2000. We compared data from electronic and paper OH records of sharps injuries reported between 1 January 2008 and 31 December 2010 with those from a previous study of sharps injuries reported between 1 January 1998 and 31 December 2000. A total of 325 sharps injuries were reported in 2008-10, compared with 332 in 1998-2000 (P = 0.568). Hepatitis B immunity in sharps injury recipients in 2008-10 was 87% compared to 86% in 1998-2000 (P = 0.32). Glove use was reported in 80% of reported injuries in 2008-10 compared with 74% in 1998-2000 (P = 0.32). In 2008-10, 49% of injuries occurred during disposal or following improper disposal of sharps, compared with 42% in 1998-2000. There was no significant change in the epidemiology of sharps injuries reported between 2008 and 2010 compared with 1998-2000. Further education in standard precautions, safe disposal of sharps, the use of safety-engineered devices and the benefits of hepatitis B immunization is needed. © The Author 2014. Published by Oxford University Press on behalf of the Society of Occupational Medicine. All rights reserved. For Permissions, please email: journals.permissions@oup.com.

Source: Medline

22.Title: Systematic qualitative literature review of health care workers' compliance with hand hygiene guidelines
Citation: American Journal of Infection Control, Mar 2015, vol. 43, no. 3, p. 269-274, 0196-6553 (March 2015)
Author(s): Smiddy, Maura P, Connell, Rhona O, Creedon, Sile A
Abstract: Acquisition of a health care-associated infection is a substantial risk to patient safety. When health care workers comply with hand hygiene guidelines, it reduces this risk. Despite a growing body of qualitative research in this area, a review of the qualitative literature has not been published. A systematic review of the qualitative literature. The results were themed by the factors that health care workers identified as contributing to their compliance with hand hygiene guidelines. Contributing factors were conceptualized using a theoretical background. This review of the qualitative literature enabled the researchers to take an inductive approach allowing for all factors affecting the phenomenon of interest to be explored. Two core concepts seem to influence health care workers' compliance with hand hygiene guidelines. These are motivational factors and perceptions of the work environment. Motivational factors are grounded in behaviorism, and the way in which employees perceive their work environment relates to structural empowerment. Noncompliance with hand hygiene guidelines remains a collective challenge that requires researchers to adopt a consistent and standardized approach. Theoretical models should be used intentionally to better explain the complexities of hand hygiene. [Publication] 72 references

Source: BNI

23.Title: Systematic review of the effectiveness of strategies to encourage patients to remind healthcare professionals about their hand hygiene
Citation: Journal of Hospital Infection, Mar 2015, vol. 89, no. 3, p. 141-162, 0195-6701 (March 2015)
Author(s): Davis, R., Parad, A., Pinto, A., Buetow, S.
Abstract: Background: Patients could help to improve the hand hygiene (HH) compliance of healthcare professionals (HCPs) by reminding them to sanitize their hands. Aim: To review the effectiveness of strategies aimed at increasing patient involvement in reminding HCPs about their HH. Methods: A systematic review was conducted across

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Medline, EMBASE and PsycINFO between 1980 and 2013. Findings: Twenty-eight out of a possible 1956 articles were included. Of these, 23 articles evaluated the effectiveness of developed patient-focused strategies and five articles examined patients’ attitudes towards hypothetical strategies. Sixteen articles evaluated single-component strategies (e.g. videos) and 12 articles evaluated multi-modal approaches (e.g. combination of video and leaflet). Overall, the strategies showed promise in helping to increase patients' intentions and/or involvement in reminding HCPs about their HH. HCP encouragement appeared to be the most effective strategy. However, the methodological quality of the articles in relation to addressing the specific aims of this review was generally weak. Conclusion: A number of strategies are available to encourage patients to question HCPs about their HH. Better controlled studies with more robust outcome measures will enhance understanding about which strategies may be most successful and why. [PUBLICATION] 111 references

Source: BNI

24. Title: Time for action—Improving the design and reporting of behaviour change interventions for antimicrobial stewardship in hospitals: Early findings from a systematic review.

Citation: International journal of antimicrobial agents, Mar 2015, vol. 45, no. 3, p. 203-212 (March 2015)

Author(s): Davey, Peter, Peden, Claire, Charani, Esmita, Marwick, Charis, Michie, Susan

Abstract: There is strong evidence that self-monitoring and feedback are effective behaviour change techniques (BCTs) across a range of healthcare interventions and that their effectiveness is enhanced by goal setting and action planning. Here we report a summary of the update of a systematic review assessing the application of these BCTs to improving hospital antibiotic prescribing. This paper includes studies with valid prescribing outcomes published before the end of December 2012. We used a structured method for reporting these BCTs in terms of specific characteristics and contacted study authors to request additional intervention information. We identified 116 studies reporting 123 interventions. Reporting of BCTs was poor, with little detail of BCT characteristics. Feedback was only reported for 17 (13.8%) of the interventions, and self-monitoring was used in only 1 intervention. Goals were reported for all interventions but were poorly specified, with only three of the nine characteristics reported for ≥50% of interventions. A goal threshold and timescale were specified for just 1 of the 123 interventions. Only 29 authors (25.0%) responded to the request for additional information. In conclusion, both the content and reporting of interventions for antimicrobial stewardship fell short of scientific principles and practices. There is a strong evidence base regarding BCTs in other contexts that should be applied to antimicrobial stewardship now if we are to further our understanding of what works, for whom, why and in what contexts. Copyright © 2015 The Authors. Published by Elsevier B.V. All rights reserved.

Source: Medline

25. Title: Turning the tide or riding the waves? Impacts of antibiotic stewardship and infection control on MRSA strain dynamics in a Scottish region over 16 years: Non-linear time series analysis

Citation: BMJ Open, 2015, vol./is. 5/3, 2044-6055 (2015)

Author(s): Lawes T., Lopez-Lozano J.-M., Nebot C., Macartney G., Subbarao-Sharma R., Dare C.R.J., Edwards G.F.S., Gould I.M.

Language: English

Abstract: Objectives: To explore temporal associations between planned antibiotic stewardship and infection control interventions and the molecular epidemiology of methicillin-resistant Staphylococcus aureus (MRSA). Design: Retrospective ecological study and time-series analysis integrating typing data from the Scottish MRSA reference laboratory. Setting: Regional hospital and primary care in a Scottish Health Board. Participants: General adult (N=1 051 993) or intensive care (18 235) admissions and primary care registrations (460 000 inhabitants) between January 1997 and December 2012. Interventions: Hand-hygiene campaign; MRSA admission screening; antibiotic stewardship limiting use of macrolides and '4Cs' (cephalosporins, coamoxiclav, clindamycin and fluoroquinolones). Outcome measures: Prevalence density of MRSA clonal complexes CC22, CC30 and CC5/Other in hospital (isolates/1000 occupied bed days, OBs) and community (isolates/10 000 inhabitant-days). Results: 67% of all clinical MRSA isolates (10 707/15 947) were typed. Regional MRSA population structure was dominated by hospital epidemic strains CC30, CC22 and CC45. Following declines in overall MRSA prevalence density, CC5 and other strains of community origin became increasingly important. Reductions in use of '4Cs' and macrolides anticipated declines in sublineages with higher levels of associated resistances. In multivariate time-series models (R<sup>2</sup>=0.63-0.94) introduction of the hand-hygiene campaign, reductions in mean length of stay (when >4 days) and bed occupancy (when >74 to 78%) predicted declines in CC22 and CC30, but not CC5/other strains. Lower importation pressures, expanded MRSA admission screening, and reductions in macrolide and third generation cephalosporin use (thresholds for association: 135-141, and 48-81 defined daily doses/1000 OBs, respectively) were followed by declines in all clonal complexes. Strain-specific associations with fluoroquinolones and clindamycin reflected resistance phenotypes of clonal
complexes. Conclusions: Infection control measures and changes in population antibiotic use were important predictors of MRSA strain dynamics in our region. Strategies to control MRSA should consider thresholds for effects and strain-specific impacts.

**Title:** Understanding the current state of infection prevention to prevent Clostridium difficile infection: a human factors and systems engineering approach

**Citation:** American Journal of Infection Control, Mar 2015, vol. 43, no. 3, p. 241-247, 0196-6553 (March 2015)

**Author(s):** Yanke, Eric, Zellmer, Caroline, Van Hoof, Sarah, Moriarty, Helene, Carayon, Pascale, Safdar, Nasia

**Abstract:** Achieving and sustaining high levels of health care worker (HCW) compliance with contact isolation precautions is challenging. The aim of this study was to determine HCW work system barriers to and facilitators of adherence to contact isolation for patients with suspected or confirmed Clostridium difficile infection (CDI) using a human factors and systems engineering approach. This prospective cohort study took place between September 2013 and November 2013 at a large academic medical center (hospital A) and an affiliated Veterans Administration hospital (hospital B). A human factors engineering (HFE) model for patient safety, the Systems Engineering Initiative for Patient Safety model, was used to guide work system analysis and direct observation data collection. There were 288 observations conducted. HCWs and visitors were assessed for compliance with all components of contact isolation precautions (hand hygiene, gowning, and gloving) before and after patient contact. Time required to complete contact isolation precautions was measured, and adequacy of contact isolation supplies was assessed. Full compliance with contact isolation precautions was low at both hospitals A (7%) and B (22%). Lack of appropriate hand hygiene prior to room entry (compliance for hospital A: 18%; compliance for hospital B: 29%) was the most common reason for lack of full compliance. More time was required for full compliance compared with compliance with no components of contact isolation precautions before patient room entry, inside patient room, and after patient room exit (59.9 vs 3.2 seconds, P=.001; 507.3 vs 149.7 seconds, P=.006; 15.2 vs 1.3 seconds, P=.001, respectively). Compliance was lower when contact isolation supplies were inadequate (4% vs 16%, P=.005). Adherence to contact isolation precautions for CDI is a complex, time-consuming process. HFE analysis indicates that multiple work system components serve as barriers and facilitators to full compliance with contact isolation precautions and should be addressed further to prevent CDI. [Publication] 23 references

**Source:** BNI

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**Title:** Ventilator-associated infection: the role for inhaled antibiotics.

**Citation:** Current Opinion in Pulmonary Medicine, 01 May 2015, vol./is. 21/3(239-249), 10705287

**Author(s):** Palmer, Lucy B

**Language:** English

**Abstract:** PURPOSE OF REVIEW: Despite multiple protocols for the prevention of ventilator-associated pneumonia (VAP), respiratory infections have not been eliminated in the ICU. The profound disruption in both airway integrity and mucociliary clearance caused by the endotracheal tube makes it unlikely there will ever be a zero rate of respiratory infection in critically ill ventilated patients or a 100% cure rate when infection is present. In fact, options for treatment are diminishing as bacteria resistant to most, or in some hospitals all, systemic antibiotics increase in prevalence from our liberal use of systemic antibiotics. Inhaled therapy with proper delivery will result in the high concentrations of antibiotics needed in the treatment of increasingly resistant organisms. RECENT FINDINGS: Data from many recent investigations have focused on inhaled antibiotics as: adjunctive therapy to systemic antibiotic for VAP, monotherapy for VAP, and as monotherapy for ventilator-associated tracheobronchitis. The clinical outcomes of these studies will be reviewed as well as their effect on multidrug-resistant organisms. SUMMARY: The present review will focus on the rationale for inhaled therapy, the current studies examining the delivery and clinical efficacy of inhaled antibiotics, and the potential role for this mode of delivery actually decreasing antibiotic resistance in the respiratory tract.

**Publication type:** journal article

**Source:** CINAHL

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**Title:** Washing uniforms at home: adherence to hospital policy

**Citation:** Nursing Standard, Feb 2015, vol. 29, no. 25, p. 37-43, 0029-6570 (February 18, 2015)

**Author(s):** Riley, Kate, Laird, Katie, Williams, John

**Abstract:** Infection control is a priority for all hospitals to reduce the spread of healthcare-associated infections (HCAIs). Textiles especially uniforms, are a possible route of HCAI transmission. There are protocols to ensure...
hospital laundry services meet accepted standards, however healthcare uniforms are laundered by staff at home and variations in practice occur. A questionnaire was used to conduct a service evaluation at four hospitals in different NHS trusts to determine how closely healthcare staff followed hospital guidelines on laundering and aftercare of uniforms at home. Responses showed that not all staff followed these guidelines; 44% of staff washed their uniforms below the recommended temperature of 60°C, which presents a potential route for cross-contamination and infection. [PUBLICATION] 22 references

Source: BNI

Publications

Royal College of Nursing and Infection Prevention Society

Infection prevention and control within health and social care: commissioning, performance management and regulation arrangements (England) PDF 290KB
Publication date: 20 February 2015

News

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