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**Literature search results**

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**Search details**


**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; CINAHL; MEDLINE; Google Scholar

**Database search terms:** “venous access device*” OR “vascular access device*”, “peripheral cannula*”, "peripheral venous cannula*", "peripheral venous catheter*", (“peripheral intravenous catheter*” OR “peripheral IV catheter*”), (venepuncture OR venipunctiure OR venepuncture), exp CATHETERIZATION, PERIPHERAL, "peripheral catheter*", infectio*, exp INFECTION, (“blood stream” OR blood-stream OR bloodstream), phlebitis, exp PHLEBITIS

**Evidence search string(s):** (peripheral (cannula* OR catheter* OR venepuncture)) AND infection

**Google search string(s):** (peripheral (cannulation OR catheterisation OR catherization OR venepuncture)) infection

**Summary**

Some suggestions for reducing infection are flushing with heparin instead of saline (1); education, feedback, patient awareness, culture changes, care bundles, guidelines, standardisation and high impact interventions (2, 3, 6, 7, 11, 12, 16, 19, 22, 24, 26, 27, 32, 33, 34); using phlebitis scoring systems (4, 35, 36); changing the dwell time or site; re-siting or replacing (8, 9, 14, 17, 18, 20, 30, 31) and a dedicated team (10).
Guidelines

Great Ormond Street Hospital
Peripheral venous cannulation of children. 2012

NICE
Infection control: full guideline, 2012
p. 39, p. 47, p. 51 and p. 164-201 all discuss infection control and vascular access devices

Royal College of Nursing
Essential practice for infection prevention and control, 2012
p. 25-26 discusses vascular access devices

Competencies: an education and training competency framework for peripheral venous cannulation in children and young people, 2010

Evidence-based reviews
n/a

Published research

Medline results

1. Title: Intermittent flushing with heparin versus saline for maintenance of peripheral intravenous catheters in a medical department: a pragmatic cluster-randomized controlled study.

Citation: Worldviews on Evidence-Based Nursing, December 2012, vol./is. 9/4(221-6), 1545-102X;1741-6787 (2012 Dec)

Author(s): Bertolino G, Pitassi A, Tinelli C, Staniscia A, Guglielmana B, Scudeller L, Luigi Balduini C

Language: English

Abstract: BACKGROUND: Three meta-analyses conducted in the 1990s concluded that the effect of intermittent flushing with heparin at low concentration (10 U/mL) was equivalent to that of 0.9% sodium chloride flushes in preventing occlusion or superficial phlebitis. No firm conclusion was reached on the safety and efficacy of heparin concentrations of 100 U/mL used as an intermittent flush. PURPOSE: To determine whether flushing peripheral intravenous catheters with 3 mL of a 100 U heparin/mL solution instead of saline improves the outcome of infusion devices. METHODS: Cluster-randomized, controlled, two-arm, open trial, conducted in a research and teaching hospital in Northern Italy, involving 214 medical patients without contraindications to heparin; 107 randomly allocated to heparin and 107 to saline flushes (control group). Main outcome measure was catheter occlusion and catheter-related phlebitis. RESULTS: Patients with either phlebitis or occlusion were 45 (42.1%) in the heparin group and 68 (63.6%) in the saline group (OR 0.41; 95% CI 0.24-0.72; p= 0.002); patients with occlusion alone were 23 (21.5%) and 47 (43.9%), respectively (p= 0.03); patients with phlebitis alone were 28 (26.2%) and 56 (52.6%) respectively (p= <0.001). Similar results were obtained when the analysis was based on catheters. No heparin severe side effects were identified. Limitations: Lack of blinding, patient selection, cluster randomization of periods of treatment. CONCLUSIONS: Heparin 100 U/mL in the maintenance of peripheral venous catheters was more effective than saline solution, in that it reduced the number of catheter-related phlebitis/occlusions and the number of catheters per patient, with potential advantages to both patients and the health system. It also appeared safe.
However, subjects with platelet or coagulation defects were excluded, and, therefore, caution should be used when prescribing this type of catheter maintenance to patients at risk of bleeding. 2012 Sigma Theta Tau International.

**Publication Type:** Journal Article  
**Source:** MEDLINE

2. **Title:** Sustained improvements in peripheral venous catheter care in non-intensive care units: a quasi-experimental controlled study of education and feedback.  
**Citation:** Infection Control & Hospital Epidemiology, May 2012, vol./is. 33/5(449-55), 0899-823X;1559-6834 (2012 May)  
**Author(s):** Fakih MG, Jones K, Rey JE, Berriel-Cass D, Kalinicheva T, Szpunar S, Saravolatz LD  
**Language:** English  
**Abstract:** BACKGROUND AND OBJECTIVES: Peripheral venous catheters (PVCs) can be associated with serious infectious complications. We evaluated the effect of education and feedback on process measures to improve PVC care and infectious complications. DESIGN: Quasi-experimental controlled crossover study with sampling before and after education. SETTING: An 804-bed tertiary care teaching hospital. PARTICIPANTS: Nurses and patients in 10 non-intensive care units. METHODS: We implemented a process to improve PVC care in 10 non-intensive care units. The 4 periods (each 3 months in duration) included a preintervention period and a staggered educational intervention among nurses. During intervention period 1, 5 units participated in the intervention (group A), and 5 units served as a control group (group B). Group B underwent the intervention during intervention period 2, and both groups A and B received feedback on performance during intervention period 3. Process measures were evaluated twice monthly, and feedback was given to nurses directly and to the unit manager on a monthly basis. RESULTS: During the preintervention period, there were no significant differences between groups A and B. Of 4,904 intravascular catheters evaluated, 4,434 (90.4%) were peripheral. By the end of the study, there were significant improvements in processes, compared with the preintervention period, including accurate documentation of dressing (from 442 cases [38%] to 718 cases [59%]; P < .0001), catheter dressing being intact (from 968 cases [88.5%] to 1,024 cases [95.2%]; P < .0001), and correct demonstration of scrubbing the hub before infusion (from 161 demonstrations [54%] to 316 demonstrations [95%]; P < .0001). There was a significant reduction in PVC-associated bloodstream infection, from 2.2 cases per 10,000 patient-days during the preintervention period (5 cases) to 0.44 cases per 10,000 patient days during the 3 intervention periods (3 cases; P = .016). CONCLUSIONS: Education and real-time feedback to nurses increases and sustains compliance with processes to reduce the risk of infection from PVCs.

**Publication Type:** Journal Article, Randomized Controlled Trial, Research Support, Non-U.S. Gov't  
**Source:** MEDLINE

3. **Title:** Outcomes of a continuing education course on intravenous catheter insertion for experienced registered nurses.  
**Citation:** Journal of Continuing Education in Nursing, April 2012, vol./is. 43/4(177-81), 0022-0124;0022-0124 (2012 Apr)  
**Author(s):** Lyons MG, Kasker J  
**Language:** English  
**Abstract:** Many experienced nurses report a lack of confidence in their intravenous (IV) catheter skills despite training with a phlebotomist and designated orientation time with the IV team. This study assessed the success of an IV catheter insertion continuing education class aimed at improving experienced nurses’ skills levels, confidence, and knowledge regarding IV catheter insertion, maintenance, and infection prevention. Through a partnership between a hospital
and a college of nursing continuing education program, a 1-day course was provided for 33 experienced nurses. The educators sought to determine whether a continuing education course improved the knowledge and skills of experienced nurses regarding the insertion of peripheral IV catheters and whether the nurses retained the knowledge and skills learned in a formal IV course over time. The findings showed that the continuing education IV course improved the knowledge and skills of experienced nurses. Improvement in knowledge was shown immediately after the course and 8 to 12 weeks later. **Skills improvement with regard to infection prevention and policy adherence was evident.** Because confidence data were collected with two different scales before and after the course, they were unusable for statistical testing. Further study is needed to determine whether nurses' confidence levels would improve after the implementation of a formal IV course. Replication studies are also needed to validate the results with a larger sample size. Copyright 2012, SLACK Incorporated.

**Publication Type:** Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from [Journal of Continuing Education in Nursing](https://www.jcu.edu)  

4. **Title:** Phlebitis: treatment, care and prevention.  
**Citation:** Nursing Times, September 2011, vol./is. 107/36(18-21), 0954-7762:0954-7762 (2011 Sep 13-19)  
**Author(s):** Higginson R, Parry A  
**Language:** English  
**Abstract:** Peripheral venous catheter-associated phlebitis is caused by inflammation to the vein at a cannula access site. It can have a mechanical, chemical or infectious cause. Good practice when inserting a cannula, including appropriate choice of device and site, can help to prevent phlebitis. Good infection control techniques are also vital in preventing the condition. **There are two phlebitis scoring systems, which should be used in routine practice to identify and treat early signs of the peripheral venous cannulation.**  
**Publication Type:** Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from [the ULHT Library and Knowledge Services' eJournal collection in Nursing Times](https://www.nursingtimes.nhs.uk)  

5. **Title:** Guidelines for the prevention of intravascular catheter-related infections.  
**Citation:** Clinical Infectious Diseases, May 2011, vol./is. 52/9(e162-93), 1058-4838:1537-6591 (2011 May)  
**Language:** English  
**Publication Type:** Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from [EBSCOhost in Clinical Infectious Diseases](https://www.ebscohost.com)  
Available from [Highwire Press in Clinical Infectious Diseases](https://www.clinicalinfectious.org)  

6. **Title:** Peripheral intravenous catheters: the road to quality improvement and safer patient care.  
**Citation:** Journal of Hospital Infection, January 2011, vol./is. 77/1(37-41), 0195-6701:1532-2939 (2011 Jan)  
**Author(s):** Boyd S, Aggarwal I, Davey P, Logan M, Nathwani D  
**Language:** English  
**Abstract:** Huge success has been noted internationally in reducing catheter-
related bloodstream infection with 'care bundles' for central venous catheters in intensive care units. A multidisciplinary team from the Infectious Diseases Unit at Ninewells Hospital, Dundee designed a 'bundle' for peripheral venous catheters (PVCs) based on drafts developed by Health Protection Scotland (details available online). A senior medical student collected weekly data, carried out monthly 'plan, do, study, act' (PDSA) cycles and displayed the results on the ward in real time. Data consisted of measures to assess objectively clinical performance for insertion (recording date, indication and location) and maintenance (daily review of necessity, clinical appearance of site, duration less than 72 h and timely removal). Care bundle compliance was assessed for each patient and percentage compliance plotted weekly. The initial compliance of 54% improved by 1.11% per week to 82% (95% confidence interval: 0.6-1.6%; P=0.0001). This was attributed to multiple interventions including daily assessment of PVC necessity, weekly audit and feedback, monthly patient safety meetings to discuss issues with compliance, the introduction of new PVC dressings and the promotion of new PVC care plans.

In conclusion, we demonstrated a significant improvement in PVC management on a single unit by using a care bundle approach. In order to improve compliance, further implementation of the PVC care bundle throughout the hospital has been necessary. Copyright A 2010 The Hospital Infection Society. Published by Elsevier Ltd. All rights reserved.

**Publication Type:** Journal Article  
**Source:** MEDLINE

### 7. Title: Role of patient awareness in prevention of peripheral vascular catheter-related bloodstream infection.

**Citation:** Infection Control & Hospital Epidemiology, January 2011, vol./is. 32/1(95-6), 0899-823X;1559-6834 (2011 Jan)  
**Author(s):** McHugh SM, Corrigan MA, Dimitrov BD, Morris-Downes M, Fitzpatrick F, Cowman S, Tierney S, Hill AD, Humphreys H  
**Language:** English  
**Publication Type:** Journal Article, Research Support, Non-U.S. Gov't  
**Source:** MEDLINE

### 8. Title: Do prolonged peripherally inserted central venous catheter dwell times increase the risk of bloodstream infection?

**Citation:** Infection Control & Hospital Epidemiology, November 2010, vol./is. 31/11(1184-7), 0899-823X;1559-6834 (2010 Nov)  
**Author(s):** Milstone AM, Sengupta A  
**Language:** English  
**Publication Type:** Journal Article  
**Source:** MEDLINE

### 9. Title: Soft tissue infections related to peripheral intravenous catheters in hospitalised patients: a case-control study.

**Citation:** Journal of Hospital Infection, October 2010, vol./is. 76/2(124-9), 0195-6701;1532-2939 (2010 Oct)  
**Author(s):** Lee WL, Liao SF, Lee WC, Huang CH, Fang CT  
**Language:** English  
**Abstract:** Peripheral intravenous (i.v.) catheter-related soft tissue infections begin with local skin and soft tissue inflammation, which can progress to cellulitis or even tissue necrosis requiring aggressive surgical treatment. We conducted a matched case-control study to investigate risk factors for peripheral i.v. catheter-related soft tissue infections in hospitalised patients. We retrospectively identified 46 cases that occurred during 2006-2008 in two teaching hospitals. Each case was randomly matched with four control subjects from the same ward and on the same day that the soft tissue infections arose. Risk factors were analysed using conditional logistic regression. Multiple regression analysis identified the following independent risk factors: >24h of continuous i.v. fluid infusion (odds ratio: 5.2, P=0.001),
insertion site in lower extremity (8.5, P=0.003), use of an infusion pump (4.6, P=0.023), and hospitalisation due to a neurological or neurosurgical condition (3.6, P=0.018). The population-attributable fractions (the percentage of cases in the study population that could be prevented if the exposure were removed) were 40%, 19%, 24% and 25%, respectively. Minimising unnecessarily prolonged i.v. fluid infusion and avoidance of insertion in the lower extremity may significantly reduce the incidence of peripheral i.v. catheter-related soft tissue infection in the study hospitals. Copyright 2010 The Hospital Infection Society. Published by Elsevier Ltd. All rights reserved.

**Publication Type:** Journal Article  
**Source:** MEDLINE

10. **Title:** Benefits of establishing an intravenous team and the standardization of peripheral intravenous catheters.  
**Citation:** Journal of Infusion Nursing, May 2010, vol./is. 33/3(156-60), 1533-1458;1539-0667 (2010 May-Jun)  
**Author(s):** da Silva GA, Priebe S, Dias FN  
**Language:** English  
**Abstract:** The purpose of this study was to show the importance of a team dedicated to intravenous (IV) insertion and the standardization of peripheral IV catheters in reducing venipuncture attempts, reducing cases of phlebitis, and optimizing costs. The benefits achieved by the team were a decrease in venipuncture attempts, a decrease of phlebitis (from 0.47% to 0.35%), the optimization of the team's time, and a 29.47% reduction in the use of catheters. The study corroborates the IV team's importance in the process of managing nurses' workflow, since it provides important indicators for quality management.  
**Publication Type:** Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from Journal of Infusion Nursing

11. **Title:** Implementing and standardising the use of peripheral vascular access devices.  
**Citation:** Journal of Clinical Nursing, March 2010, vol./is. 19/5-6(721-7), 0962-1067;1365-2702 (2010 Mar)  
**Author(s):** Easterlow D, Hoddinott P, Harrison S  
**Language:** English  
**Abstract:** AIMS AND OBJECTIVES: To assess the impact of a change initiative relating to the use of peripheral intravenous cannulae on healthcare-acquired infections in an acute hospital trust in London, UK. BACKGROUND: The prevalence of healthcare-acquired infections has increased in the UK in recent years. Causal factors include poor practice and declining standards of cleanliness and hygiene in healthcare settings. DESIGN: Implementation of a change management initiative. METHODS: A baseline audit was conducted to identify areas for change. Based on the audit findings, a change initiative was implemented which included the introduction of a new, non-ported needle-safe cannula, together with changes in practices relating to peripheral intravenous cannulae care. RESULTS: In the eight months postintroduction of the new cannulae, decreases of 53% and 35% were reported in the number of methicillin-resistant Staphylococcus aureus and healthcare-acquired infection cases, respectively, compared with the same period prior to implementation. Audits results also demonstrated considerable improvements in practices relating to cannula care following implementation of the change initiative. CONCLUSIONS: A change in culture, the adoption of a non-ported cannula and improvements in practices relating to peripheral intravenous cannulae care led to significant reductions in healthcare-acquired infections during the period of the study. RELEVANCE TO CLINICAL PRACTICE: The adoption of appropriate cannulae and
administration sets to minimise infection risk can help to reduce the incidence of methicillin-resistant S. aureus and healthcare-acquired infection cases resulting from peripheral venous cannulation. Training and support to encourage the adoption of best practice, in conjunction with regular follow-up audits, can lead to a reduction in infection rates and general improvements in the quality of peripheral line care. The findings of this study provide similar institutions with evidence to guide decision-making on cannula care.

**Publication Type:** Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from EBSCOhost in Journal of Clinical Nursing  
Available from the ULHT Library and Knowledge Services' eJournal collection in Journal of Clinical Nursing

12. **Title:** Improving peripheral IV cannula care: implementing high-impact interventions.  
**Citation:** British Journal of Nursing, November 2009, vol./is. 18/20(1242-6), 0966-0461;0966-0461 (2009 Nov 12-25)  
**Author(s):** Aziz AM  
**Language:** English  
**Abstract:** Infection prevention and control measures have been recognized as effective in minimizing the risk of infection from peripheral intravenous (IV) cannulas. However, this relies on health professionals' compliance with guidelines for the care of patients with IV catheters and at times it may be that practice is inconsistent with guidelines. This article discusses the care required for peripheral cannulas and shows how implementing the high-impact interventions can improve peripheral IV catheter care on insertion and its management afterwards.

13. **Title:** Minimizing catheter-related bloodstream infections: one unit's approach.  
**Citation:** Advances in Neonatal Care, October 2009, vol./is. 9/5(209-26; quiz 227-8), 1536-0903;1536-0911 (2009 Oct)  
**Author(s):** Cooley K, Grady S  
**Language:** English  
**Abstract:** Catheter-related bloodstream infection (CRBSI) is the most common complication related to peripherally inserted central catheters in the neonatal intensive care unit. CRBSIs are responsible for many morbidities and mortalities occurring in special care nurseries. However, these vascular access devices are an essential aspect of neonatal care and therefore are indispensable. To minimize CRBSI incidences and improve patient outcomes, objectives must be established to focus on the prevention of these potentially life-threatening infections. This article identifies the interventions incorporated by our facility to prevent nosocomial bloodstream infections.

14. **Title:** Position of peripheral venous cannulae and the incidence of thrombophlebitis: an observational study.  
**Citation:** Journal of Advanced Nursing, June 2009, vol./is. 65/6(1268-73), 0309-2402;1365-2648 (2009 Jun)  
**Author(s):** Cicolini G, Bonghi AP, Di Labio L, Di Mascio R  
**Language:** English  
**Abstract:** AIM: This paper is a report of a study conducted to investigate the most suitable location of peripheral venous cannulae to reduce the incidence of
thrombophlebitis. BACKGROUND: Peripheral intravenous cannulae are used for vascular access, but the site of insertion and size of the cannula could expose patients to local and systemic infectious complications. Small cannula size is an important factor in reducing the incidence of thrombophlebitis, but cannula location has not yet been studied. Evidence-based knowledge on how to prevent these complications is needed. METHOD: An observational survey carried out was carried out in 2007 with 427 patients in one Italian hospital. A structured observation protocol was used to survey the frequency of thrombophlebitis and the relationship of location and size of peripheral intravenous cannulae. The variables evaluated were age, gender, cannula size and site of cannula location. Chi-square or Student t tests were used, and the adjusted odds ratios and relative 95% confidence intervals are reported. RESULTS: The frequency of peripheral intravenous cannulae thrombophlebitis was higher in females (OR: 1.91; CI: 1.20-3.03; P < 0.006). The highest incidence was found in patients with cannulae inserted in the dorsal side of the hand veins compared to those with cannulae inserted in cubital fossa veins (OR: 3.33; CI: 1.37-8.07; P < 0.001). CONCLUSION: The use of cubital fossa veins rather than forearm and hand veins should be encouraged to reduce the risk of thrombophlebitis in patients with peripheral intravenous cannulae.

Publication Type: Journal Article
Source: MEDLINE
Full Text: Available from EBSCOhost in Journal of Advanced Nursing

15. Title: Does elective re-siting of intravenous cannulae decrease peripheral thrombophlebitis? A randomized controlled study.
Citation: National Medical Journal of India, March 2009, vol./is. 22/2(60-2), 0970-258X;0970-258X (2009 Mar-Apr)
Author(s): Nishanth S, Sivaram G, Kalayarasan R, Kate V, Ananthakrishnan N
Language: English
Abstract: BACKGROUND: Peripheral venous thrombophlebitis (PVT) is a common complication of intravenous cannulation, occurring in about 30% of patients. We evaluated the effect of elective re-siting of intravenous cannulae every 48 hours on the incidence and severity of PVT in patients receiving intravenous fluids/drugs. METHODS: We randomized 42 patients who were admitted for major abdominal surgery to either the control or study group (n = 21 in either group). Informed consent was obtained from all of them. Cannulae in the control group were removed only if the site became painful, the cannula got dislodged or there were signs and symptoms suggestive of PVT, namely pain, erythema, swelling, excessive warmth or a palpable venous cord. Cannulae in the study group were changed and re-sited electively every 48 hours. All the patients were examined every 24 hours for signs and symptoms of PVT at the current and previous sites of infusion. RESULTS: The incidence of PVT was 100% (21/21) in the control group and only 9.5% (2/21) in the study group (p < 0.0001). The severity of PVT was also less in the study group compared with that in the control group. Day-wise correlation of the incidence of PVT showed that 82.6% of the episodes of PVT occurred on day 3. CONCLUSION: Elective re-siting of intravenous cannulae every 48 hours results in a significant reduction in the incidence and severity of PVT. We recommend that this should be adopted as standard practice in managing all patients who require prolonged intravenous therapy.
Publication Type: Journal Article, Randomized Controlled Trial
Source: MEDLINE

16. Title: The role of nurses working in emergency and critical care environments in the prevention of intravascular catheter-related bloodstream infections.
Citation: International emergency nursing, January 2009, vol./is. 17/1(60-8), 1878-013X;1878-013X (2009 Jan)
Author(s): Vandijck DM, Labeau SO, Secanell M, Rello J, Blot SI
Language: English
Abstract: Intravascular catheter-related infections are a major problem in healthcare. This review provides up-to-date guidance of evidence-based recommendations for the prevention of intravascular catheter-related infections with special focus on strategies relevant for nurses working in emergency and critical care environments or practitioners responsible for surveillance and control of infections. The review concludes by providing a range of approaches advocated for: (i) translating guidelines to the needs and expectations of emergency and critical care nurses, and (ii) increasing the chance of successful implementation and compliance with these recommendations.
Publication Type: Journal Article, Research Support, Non-U.S. Gov't, Review
Source: MEDLINE

17. Title: Is an increased dwell time of a peripherally inserted catheter associated with an increased risk of bloodstream infection in infants?
Citation: Infection Control & Hospital Epidemiology, August 2008, vol./is. 29/8(749-53), 0899-823X;1559-6834 (2008 Aug)
Author(s): Smith PB, Benjamin DK Jr, Cotten CM, Schultz E, Guo R, Nowell L, Smithwick ML, Thornburg CD
Language: English
Abstract: OBJECTIVE: To estimate the risk of bloodstream infection associated with catheter dwell time in infants.DESIGN: Retrospective study.SETTING: Duke University Medical Center neonatal intensive care unit, an academic, level 3 nursery in Durham, North Carolina.METHODS: A case of catheter-associated bloodstream infection was defined as one that occurred in an infant whose culture-positive blood sample was collected more than 24 hours after catheter insertion or within 72 hours after catheter removal. We used multivariable logistic regression to control for the catheter's position and dwell time as well as the infant's sex, gestational age, age at time of catheter insertion, birth weight, and weight at time of catheter insertion.RESULTS: We identified 135 cases of catheter-associated bloodstream infection. The mean catheter dwell time was 12.2 days (range, 0-113 days), and the mean time to bloodstream infection was 10.8 days (range, 1-57 days). An increase in catheter dwell time was associated with a lower risk of bloodstream infection (odds ratio, 0.975 [95% confidence interval, 0.954-0.996]; P = .02).CONCLUSION: No increased risk of catheter-associated bloodstream infection was observed with increased catheter dwell time. This may have been due to the infant's improved nutrition, decreased need for other invasive devices, and maturing skin and immune system as catheter dwell time increased.
Publication Type: Journal Article, Research Support, N.I.H., Extramural
Source: MEDLINE

18. Title: The relationship between peripheral intravenous catheter indwell time and the incidence of phlebitis.
Citation: Journal of Infusion Nursing, January 2008, vol./is. 31/1(39-45), 1533-1458;1533-1458 (2008 Jan-Feb)
Author(s): Powell J, Tarnow KG, Perucca R
Language: English
Abstract: The purpose of this study was to determine any relationship between peripheral IV catheter indwell time and phlebitis in hospitalized adults. A retrospective review of quarterly quality assurance data-monitoring indwell time, phlebitis rating, and site and tubing labels-was performed. Of 1,161 sites, only 679 had documented indwell time to use. Average indwell time was 1.9 days, and overall phlebitis rate was 3.7%. Analysis of variance revealed a significant association between phlebitis and indwell time. However, asymptomatic peripheral IVs may not need to be removed at regular intervals because there were healthy, asymptomatic sites with indwell time up to 10 days.
Publication Type: Journal Article
Source: MEDLINE
19. Title: The effectiveness of a nurse-initiated intervention to reduce catheter-associated bloodstream infections in an urban acute hospital: an intervention study with before and after comparison.

Citation: International Journal of Nursing Studies, November 2007, vol./is. 44/8(1324-33), 0020-7489;0020-7489 (2007 Nov)

Author(s): Tsuchida T, Makimoto K, Toki M, Sakai K, Onaka E, Otani Y

Language: English

Abstract: BACKGROUND: Catheter care is considered to be important for prevention of catheter-associated bloodstream infections (CABSIs) although epidemiological evidence is sparse.OBJECTIVES: To identify problems associated with catheter care and evaluate the effectiveness of nurse-initiated interventions to reduce CABSIs.DESIGN: An intervention study with before and after comparison.SETTINGS: CABSII surveillance was conducted in a 560-bed acute hospital located in a major urban area in Japan.PARTICIPANTS: Patients were enrolled in this study from April 2000 to December 2002 based on the following criteria: (1) adult inpatients; and (2) those in whom central venous lines or Swan-Ganz catheters were inserted for 2 days or longer.METHODS: In the first year, risk factors for CABSII and problems associated with catheter care were identified by inspection of the infection control nurse (ICN) or four trained link nurses, and the laboratory results. In the subsequent 2 years, the following interventions based on the surveillance results were implemented: (1) enhanced skin preparation by scrubbing with regular bathing soap and tap water; (2) a new method for stabilisation of the catheter inserted into the internal jugular vein, where additional dressing was placed over the sterilised dressing; (3) educating the staff on maximal sterile precautions by teaching staff members at their section meetings and displaying posters; (4) use of a check list and observation of catheter insertion by link nurses to monitor compliance; and (5) selection of a disinfectant that requires shorter contact time and has longer residual effect.RESULTS: After these interventions were implemented, the overall bloodstream infection (BSI) rate declined from 4.0/1000 device-days to 1.1/1000 device-days (p<0.005).CONCLUSIONS: We identified four problems—those related to skin preparation, dressing, sterile precautions and disinfectant. We implemented a series of interventions to reduce CABSIs; the overall CABSI rate decreased significantly.

Publication Type: Journal Article

Source: MEDLINE

Full Text: Available from International Journal of Nursing Studies; Note: ; Notes: Use the link to request articles from the library. Complete the appropriate online form and press 'Send'.

20. Title: Evidence for elective replacement of peripheral intravenous catheter to prevent thrombophlebitis: a systematic review.

Citation: Journal of Advanced Nursing, September 2006, vol./is. 55/6(715-22), 0309-2402;0309-2402 (2006 Sep)

Author(s): Idvall E, Gunningberg L

Language: English

Abstract: AIM: This paper reports a review of the scientific evidence for elective replacement of peripheral intravenous catheters in adults in the absence of any clinical complications, with the aim being to reduce the incidence and severity of thrombophlebitis.BACKGROUND: The incidence of thrombophlebitis associated with peripheral intravenous catheters has been reported to range from 5.3% to 77.5%. Many factors that increase the risk for thrombophlebitis have been reported, of which time in situ is one. In Sweden, the recommended guideline is elective replacement of peripheral intravenous catheters every 12-24
METHOD: A systematic literature review was carried out in 2005 using the Cochrane Library, OvidMedline and CINAHL databases and hand searching of reference lists and with keywords catheterization, peripheral, thrombophlebitis and parenteral nutrition. The review included randomized controlled trials of elective replacement of peripheral intravenous catheters in adults. Three reviewers assessed the data found according to predetermined criteria.

FINDING: Three randomized control trials met the inclusion criteria and were retrieved for critical appraisal. The samples in two of the trials included patients requiring total parenteral nutrition. Patients in the third trial were receiving crystalloid and drugs. Time intervals for elective replacement varied. Study quality and relevance were rated as 'medium' in two of the trials and as 'low' in the third trial.

CONCLUSION: Limited scientific evidence suggests that elective replacement of peripheral intravenous catheters reduces the incidence and severity of thrombophlebitis.

Publication Type: Journal Article, Research Support, Non-U.S. Gov't, Review
Source: MEDLINE
Full Text: Available from EBSCOhost in Journal of Advanced Nursing

21. Title: Prevention of infection in peripheral intravenous devices.
Citation: Nursing Standard, August 2006, vol./is. 20/49(49-56; quiz 57), 0029-6570:0029-6570 (2006 Aug 16-22)
Author(s): Lavery I, Ingram P
Language: English
Abstract: This article focuses on peripheral intravenous cannulation devices as one source of infection. Using the chain of infection, each aspect is explored to help reduce or prevent infection.
Publication Type: Journal Article, Review
Source: MEDLINE
Full Text: Available from EBSCOhost in Nursing Standard

22. Title: Short peripheral venous catheters: effect of evidence-based guidelines on insertion, maintenance and outcomes in a university hospital.
Citation: Journal of Hospital Infection, March 2005, vol./is. 59/3(197-204), 0195-6701:0195-6701 (2005 Mar)
Author(s): Couzigou C, Lamory J, Salmon-Ceron D, Figard J, Vidal-Trecan GM
Language: English
Abstract: This study was designed to evaluate the impact of hospital-wide guidelines for short peripheral venous catheters (SPVC) insertion on the frequency of local catheter-related complications. In a 1051-bed Parisian university hospital, two observational, point prevalence surveys were undertaken in 1996 and in 1998, separated by implementation of written guidelines for SPVC insertion. The outcomes of SPVC insertion were defined as the presence or absence of local catheter-related complications (erythema, purulence around the insertion point, tenderness or induration along the cannulated vein). The proportion of polyurethane catheter materials used (56% vs. 81%, P<0.001), correct and sterile fixation (80% vs. 92%, P<0.05), non-movable catheters (92% vs. 98%, P=0.03) and insertion record (58% vs. 76%, P<0.01) increased between 1996 and 1998. The frequency of local catheter-related complications decreased (15% vs. 4%, P<0.01). Age >73 years [odds ratio (OR) 6.0, 95% confidence interval (CI) 1.28-28.05] was positively associated with local catheter-related complications, whereas duration of insertion (until 72 h) (OR 0.29, 95% CI 0.09-0.89) and the implementation of guidelines (OR 0.26, 95% CI 0.09-0.67) were negatively associated with local catheter-related complications. The implementation of guidelines was independently negatively associated with local catheter-related complications (OR 0.31, 95% CI 0.09-0.97). The results suggest that hospital guidelines for SPVC insertion can improve catheter care and significantly
reduce local catheter-related complications.
Publication Type: Journal Article
Source: MEDLINE
Full Text:
Available from Journal of Hospital Infection; Note: ; Notes: Use the link to request articles from the library. Complete the appropriate online form and press 'Send'.

23. Title: A practical guide to venepuncture and blood sampling.
Citation: Nursing Standard, January 0001, vol./is. 22/29(29-36), 0029-6570;0029-6570 (2008 Mar 26-Apr 1)
Author(s): Scales K
Language: English
Abstract: This article provides an overview of the knowledge and skills required for peripheral venepuncture, including anatomy and physiology, psychological issues, consent, vein selection, infection control, venepuncture technique, sharps disposal and the prevention and management of complications. A period of supervision and assessment of competency is required to consolidate this theoretical knowledge, and practitioners should comply with the policies and procedures of their organisation.
Publication Type: Journal Article
Source: MEDLINE
Full Text:
Available from EBSCOhost in Nursing Standard

24. Title: Strategies for preventing peripheral intravenous cannula infection.
Citation: British Journal of Nursing, January 0001, vol./is. 17/19(S14-21), 0966-0461;0966-0461 (2008 Oct 23-Nov 12)
Author(s): Morris W, Heong Tay M
Language: English
Abstract: Peripheral intravenous (IV) cannulation is a procedure that involves breaching the integrity of the skin, exposing patients to the risk of infection. Acquisition of infection has associated costs both for patients and the NHS. The high number of peripheral IV cannulae (PICs) inserted annually has resulted in serious infection and significant morbidity (O'Grady et al, 2002). Risks associated with PIC infection must be addressed to reduce patient morbidity and increased cost of prolonged hospital admission and treatment. This article discusses the sources and routes of infection associated with peripheral IV cannulation, and examines healthcare management strategies for preventing infection when performing peripheral cannulation. These comprise: the Peripheral Venous Cannulation Policy, which empowers practitioners to challenge poor cannulation skills and standardize practice; education, which provides learning opportunities within programmes such as Infection Control Core Competencies Study Days, designed to promote infection prevention strategies directly related to cannula care and aimed at all levels of Trust staff; and the Peripheral Cannula Care Plan, which ensures accurate documentation of cannulation procedures. This last strategy is simple to use and provides a route for improving cannula-related documentation. A high standard of documentation will also assist audit, which is crucial to reducing PIC infection.
Publication Type: Journal Article, Review
Source: MEDLINE
Full Text:
Available from EBSCOhost in British Journal of Nursing

25. Title: Care of peripheral venous cannula sites.
Citation: Nursing Times, January 0001, vol./is. 108/34-35(12, 14-5), 0954-7762;0954-7762 (2012 Aug 21-Sep 3)
Author(s): McCallum L, Higgins D
Language: English
Abstract: Peripheral venous catheters are commonly used in hospitals to deliver intravenous therapy. They are associated with a range of complications that can be damaging to patients' health and increase healthcare costs. In order to minimise the risk of these complications, thorough patient assessment and careful catheter management are essential.

Publication Type: Journal Article
Source: MEDLINE
Full Text: Available from the ULHT Library and Knowledge Services' eJournal collection in Nursing Times

26. Title: Infection control in peripheral cannulae.
Citation: Nursing Standard, March 2004, vol./is. 18/27(37-40), 0029-6570;0029-6570 (2004 Mar 17-23)
Author(s): Hindley G
Language: English
Abstract: Cannulation is a procedure that is increasingly being performed by nurses, therefore it is important that they are aware of the complications associated with care and management. This article focuses on the infection risks associated with peripheral cannulae and how nurses can adapt their practice to care effectively for patients with peripheral lines.

Publication Type: Journal Article, Review
Source: MEDLINE
Full Text: Available from EBSCOhost in Nursing Standard

27. Title: Nurses' knowledge regarding patients with intravenous catheters and phlebitis interventions.
Citation: Journal of Vascular Nursing, June 2003, vol./is. 21/2(44-7; quiz 48-9), 1062-0303;1062-0303 (2003 Jun)
Author(s): Karadeniz G, Kutlu N, Tatlisumak E, Ozbakkaloglu B
Language: English
Abstract: This study was planned and applied in 2 stages. Stage I was applied to determine the knowledge of nurses working in the internal medicine, surgery, obstetrics and gynecology, pediatrics, and other services in Celal Bayar University Hospital about using intravenous catheter and intravenous fluid treatment, and the symptoms and treatment procedure for phlebitis. Stage II consisted of observation of all patients who had intravenous catheters for symptoms of phlebitis for 5 days and the interventions the nurses used for the patients who had phlebitis. In stage I, questionnaires were used to determine the knowledge of the nurses; in stage II, 2 investigators observed the patients. Results were evaluated using SPSS software with chi(2) statistical analysis. Nurses were found to have high knowledge levels, but their practices were not suitable to their knowledge levels. Of the patients who participated in the study, 67.24% showed symptoms of phlebitis. We found that there was a significant relationship (P <.05) between the selection of the vein and the occurrence of phlebitis in patients who had an intravenous catheter. We also found that the relationships between the age groups of the patients and phlebitis and the relationships between the diagnosis and phlebitis were statistically significant (P <.05).

Publication Type: Journal Article
Source: MEDLINE

28. Title: Guidelines for the prevention of intravascular catheter-related infections.
Citation: Infection Control & Hospital Epidemiology, December 2002, vol./is. 23/12(759-69), 0899-823X;0899-823X (2002 Dec)
BACKGROUND: Although many catheter-related bloodstream infections (CRBSIs) are preventable, measures to reduce these infections are not uniformly implemented. OBJECTIVE: To update an existing evidenced-based guideline that promotes strategies to prevent CRBSIs. DATA SOURCES: The MEDLINE database, conference proceedings, and bibliographies of review articles and book chapters were searched for relevant articles. STUDIES INCLUDED: Laboratory-based studies, controlled clinical trials, prospective interventional trials, and epidemiologic investigations. OUTCOME MEASURES: Reduction in CRBSI, catheter colonization, or catheter-related infection. SYNTHESIS: The recommended preventive strategies with the strongest supportive evidence are education and training of health care providers who insert and maintain catheters; maximal sterile barrier precautions during central venous catheter insertion; use of a 2% chlorhexidine preparation for skin antisepsis; no routine replacement of central venous catheters for prevention of infection; and use of antiseptic/antibiotic-impregnated short-term central venous catheters if the rate of infection is high despite adherence to other strategies (ie, education and training, maximal sterile barrier precautions, and 2% chlorhexidine for skin antisepsis). CONCLUSION: Successful implementation of these evidence-based interventions can reduce the risk for serious catheter-related infection.

Publication Type: Guideline, Journal Article, Research Support, Non-U.S. Gov't Source: MEDLINE Full Text: Available from Infection Control & Hospital Epidemiology; Note: ; Notes: Use the link to request articles from the library. Complete the appropriate online form and press 'Send'.


30. Title: Multi-centre research surveillance project to reduce infections/phlebitis associated with peripheral vascular catheters. Citation: Journal of Hospital Infection, November 2000, vol./is. 46/3(194-202), 0195-6701;0195-6701 (2000 Nov) Author(s): Curran ET, Coia JE, Gilmour H, McNamee S, Hood J Language: English Abstract: A surveillance project was undertaken on 37 surgical wards by infection control nurses with the aim of reducing phlebitis/infections associated with peripheral vascular catheters, and to identify risk factors. Data on 2934 catheters in situ longer than 24h was collected in two separate surveillance periods and results were fed back after each surveillance period. **Four significant risk factors were identified; what the catheters were used for, the duration the catheters were in situ, the surveillance period (the first surveillance period had a higher phlebitis rate than the second) and whether an infusion pump was used.** Logistic regression analysis showed that each of these had a significant effect after adjusting for the effects of the other three factors. Copyright 2000 The Hospital Infection Society.
Clinically indicated and routine replacement of peripheral IV catheters did not differ for phlebitis.

**Citation:** Annals of Internal Medicine, 15 January 2013, vol./is. 158/2(0-0), 00034819

**Author(s):** Maki DG

**Language:** English

**Abstract:** QUESTION In hospitalized patients, is clinically indicated replacement of peripheral IV catheters (PIVCs) equivalent to routine replacement every 3 days for phlebitis? METHODS DESIGN Randomized, controlled, equivalency trial. ACTRN12608000445370. ALLOCATION Concealed.* BLINDING Blinded* (laboratory staff, outcome assessor, and safety committee). FOLLOW-UP PERIOD 48 hours after catheter removal. SETTING 3 university-affiliated hospitals in Queensland, Australia. PATIENTS 3283 hospitalized medical or surgical patients >= 18 years of age (mean age 55 y, 63% men) with a PIVC in place and expected treatment 4 days. Exclusion criteria were bloodstream infection, planned removal of catheter within 24 hours, catheter already in situ for 72 hours, or catheter inserted in an emergency. INTERVENTION Replacement of PIVCs as indicated clinically by completion of therapy, phlebitis, infiltration, occlusion, accidental removal, or suspected infection (n = 1593); or routinely every third calendar day, unless otherwise clinically indicated (e.g., catheter failure before day 3 or unable to recannulate) (n = 1690). 39% (2322/5907) of catheters were inserted by an IV insertion service. OUTCOMES Primary outcome was phlebitis during use or within 48 hours of catheter removal. Phlebitis was defined as simultaneous presentation of >= 2 of the following: patient-reported pain or tenderness, with severity >= 2 on a 10-point scale; erythema extending >= 1 cm from insertion site; swelling extending >= 1 cm from insertion site; purulent discharge; or palpable venous cord beyond the catheter tip. 3000 patients were needed to detect equivalence of therapies at 4% phlebitis (equivalence margin 3%) with 95% power ([$\alpha$] = 0.05). PATIENT FOLLOW-UP 100% (intention-to-treat analysis). MAIN RESULTS Main results are in the Table. The absolute risk difference between groups for phlebitis (0.41%, 95% CI [-1.33 to 2.15]) was within the equivalence margin of 3%.

CONCLUSION Clinically indicated peripheral IV catheter replacement did not differ from routine replacement every 3 days for phlebitis in hospitalized patients.

### Table: Outcomes Event rates During catheterization or within 48 h after IV removal

<table>
<thead>
<tr>
<th></th>
<th>Clinically indicated</th>
<th>Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phlebitis (%)</td>
<td>7.2%</td>
<td>6.7%</td>
</tr>
<tr>
<td>CI (95%)</td>
<td>(17 to 36)</td>
<td></td>
</tr>
</tbody>
</table>

NS = not significant; other abbreviations defined in Glossary. RRI and CI calculated from relative risk in article. t>= 2 of patient-reported pain or tenderness with severity >= 2 on a 10-point scale; erythema extending >= 1 cm from insertion site; swelling extending >= 1 cm from insertion site; purulent discharge; or palpable venous cord beyond catheter tip.

**Publication Type:** journal article

**Source:** CINAHL

**Full Text:** Available from EBSCOhost in Annals of Internal Medicine

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**32. Title:** “Standardise intravenous line care to reduce infection risk”.

**Citation:** Nursing Times, 21 August 2012, vol./is. 108/34-35(11-11), 09547762

**Author(s):** Campbell, Caroline

**Language:** English

**Publication Type:** journal article

**Source:** CINAHL

**Full Text:**
33. **Title:** IV-line training cuts infection rates.  
**Citation:** Nursing Standard, 15 August 2012, vol./is. 26/50(8-8), 00296570  
**Language:** English  
**Publication Type:** journal article  
**Source:** CINAHL  
**Full Text:** Available from EBSCOhost in Nursing Standard

34. **Title:** Achieving zero catheter related blood stream infections: 15 months success in a community based medical center.  
**Citation:** Journal of the Association for Vascular Access, 01 December 2007, vol./is. 12/4(218-224), 15528855  
**Author(s):** Harnage SA  
**Language:** English  
**Abstract:** Achieving Zero Catheter Related Blood Stream Infections: 15 Month Success In A Community Based Medical Center. Background and Purpose: Catheter related blood stream infection (CRBSI) is a major cause of patient morbidity, mortality, and cost. Lower CRBSI rates would decrease inpatient length of stay. Project: An innovative central line bundle was developed to reduce CRBSI. An innovative combination of focused nursing practice and product technologies were selected for the bundle and implemented through a defined educational program. Data was collected from thirty-two critical care beds: 16 medical/surgical ICU and 16 Trauma-Neuro ICU beds. Results: From January 2006 thru March 2007 there were Zero occurrences of CRBSI. Over this 15 month period our PICC insertions increased by 103%, and our interventional radiology referral rate decreased to less than 2%. Implications/Conclusions: **A multimodality bundle, combining nursing practice interventions and technology can successfully decrease the incidence of CRBSI.** While some of the bundle components have not been widely researched and instead are based on theory or accepted clinical practice, the early outcome provides a basis for additional study and refinement. It also invites research into the various components of the bundle to evaluate the effect each separate practice and product lends to its success.  
**Publication Type:** journal article  
**Source:** CINAHL

35. **Title:** Evaluation of a visual infusion phlebitis scale for determining appropriate discontinuation of peripheral intravenous catheters.  
**Citation:** Journal of Infusion Nursing, 01 November 2006, vol./is. 29/6(338-345), 15331458  
**Author(s):** Gallant P, Schultz AA  
**Language:** English  
**Abstract:** Approximately 150 million peripheral intravenous (PIV) catheters are inserted annually in the United States, with a 5% incidence rate of phlebitis as an acceptable benchmark. In 2002, the Centers for Disease Control and Prevention recommended that PIV sites and administration sets be changed at least every 96 hours, yet clinical practice supported that at least 25% of PIV catheters showed no signs of phlebitis at 96 hours’ dwell time. This study reports the assessment results of 850 PIV catheters over the indwelling life of the catheter, using the Visual Infusion Phlebitis scale as the measure determining when a PIV should be removed.  
**Publication Type:** journal article  
**Source:** CINAHL  
**Full Text:** Available from Journal of Infusion Nursing
36. Title: Prospective surveillance of phlebitis associated with peripheral intravenous catheters.
Citation: American Journal of Infection Control, 01 June 2006, vol./is. 34/5(308-312), 01966553
Author(s): Malach T, Jerassy Z, Rudensky B, Schlesinger Y, Broide E, Olsha O, Yinnon AM, Raveh D
Language: English
Abstract: BACKGROUND: Guidelines have been published for prevention of phlebitis associated with peripheral intravenous catheters (IVC), but this complication continues to occur. We sought to determine the rate of phlebitis associated with peripheral IVCs to identify predictors for phlebitis and to isolate pathogenic bacteria from phlebitic catheter tips. METHODS: Nine-point prevalence studies were conducted during the years 1996-2003 of all hospitalized patients with a peripheral IVC. During the last 3 surveys, conducted in 2003, phlebitic lines were removed, and, for each line, 1 to 2 nonphlebitic lines, in place for 48 to 72 hours, were removed and cultured as controls. In between these surveys, findings and guidelines for improvement were distributed to the staff.
RESULTS: During these surveys, 40% +/- 8% of hospitalized patients had a peripheral IVC. The rate of peripheral IVC-associated phlebitis decreased from 12.7% (20/157) in 1998 to 2.6% (5/189) in 2003 (P < .01). Factors significantly associated with phlebitis included pain (P < .001), presence of the catheter for longer than 3 days (P < .05), and cleanliness of the dressing (P < .01). CONCLUSION: The rate of phlebitis associated with peripheral intravenous catheters decreased significantly throughout the study period. The identification of predictors for phlebitis and the dissemination of this information in an educational drive may have contributed to this improvement.
Publication Type: journal article
Source: CINAHL

37. Title: Guarding against vascular site infection.
Citation: Nursing Management, 01 April 2006, vol./is. 37/4(54-67), 07446314
Author(s): Rosenthal K
Language: English
Abstract: Arm yourself with the latest knowledge on equipmet and technique to protect patients from catheter-related bloodstream infections.
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Nursing Management - US
Available from Ovid in Nursing Management
Available from Nursing Management
Available from EBSCOhost in Nursing Management - US

38. Title: Venepuncture: best practice.
Citation: Nursing Standard, 17 August 2005, vol./is. 19/49(55-67), 00296570
Author(s): Lavery I, Ingram P
Language: English
Abstract: Venepuncture is the introduction of a needle into a vein to obtain a blood sample for haematological, biochemical or bacteriological analysis. It is the most common invasive procedure undertaken in hospital. This article provides guidance on the theory and practice of venepuncture.
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Nursing Standard

BACKGROUND: Although many catheter-related bloodstream infections (CRBSIs) are preventable, measures to reduce these infections are not uniformly implemented. OBJECTIVE: To update an existing evidence-based guideline that promotes strategies to prevent CRBSIs. DATA SOURCES: The MEDLINE database, conference proceedings, and bibliographies of review articles and book chapters were searched for relevant articles. STUDIES INCLUDED: Laboratory-based studies, controlled clinical trials, prospective interventional trials, and epidemiologic investigations. OUTCOME MEASURES: Reduction in CRBSI, catheter colonization, or catheter-related infection. SYNTHESIS: The recommended preventive strategies with the strongest supportive evidence are education and training of healthcare providers who insert and maintain catheters; maximal sterile barrier precautions during central venous catheter insertion; use of a 2% chlorhexidine preparation for skin antisepsis; no routine replacement of central venous catheters for prevention of infection; and use of antiseptic/antibiotic-impregnated short-term central venous catheters if the rate of infection is high despite adherence to other strategies (ie, education and training, maximal sterile barrier precautions, and 2% chlorhexidine for skin antisepsis). CONCLUSION: Successful implementation of these evidence-based interventions can reduce the risk for serious catheter-related infection.

Title: A survey of nurses' assessment of peripheral intravenous catheters.

Citation: British Journal of Nursing, 08 August 2002, vol./is. 11/15(999-1004), 09660461

Author(s): Creamer E, McCarthy G, Tighe I, Smyth E

Language: English

Abstract: The purpose of this survey was to improve nursing care of patients with peripheral intravenous catheters (PVCs), focusing on assessment of the PVC site for infection. The survey was conducted in 20 wards by an infection control nurse (ICN), recording data on assessment, site infection and removal/resiting of PVCs. Nursing staff were interviewed on assessment of the PVC site and nursing interventions were recorded. A total of 554 PVCs in 397 patients were surveyed of which 28 (5%) had site infection. There was no related bloodstream infection (BSI). Overall, PVCs were assessed 450 (81%) times by nurses. Malfunction was reported 95 (17%) times, pain 28 (5%) times and pyrexia 10 (2%) times. Characteristics that showed significant difference between 28 infected and 526 non-infected PVCs included when nurses assessed PVCs as infected, and nurses' intervention for PVCs inserted for 1-3 days' duration. Other characteristics were resiting PVCs when associated with malfunction and also resiting because of pain. The involvement of the ICN was likely to have contributed to the low infection rate. While not conclusive this survey identified characteristics between infected and non-infected PVCs that may have been associated with this low infection rate, namely, nurses' overall intervention in PVC care and assessment that is focused on identifying infection, and resiting for malfunction and pain. These are simple assessment and intervention measures that should not require the assignment of a dedicated ICN, but which are within the capabilities of all healthcare workers entrusted with PVC care.
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in British Journal of Nursing

41. Title: IV nursing: infection control considerations for peripheral IV catheters.
Citation: Dissector, 01 August 2002, vol./is. 30/2(10-10), 11747579
Author(s): Barrett C
Language: English
Publication Type: journal article
Source: CINAHL

42. Title: Prevention of infections related to peripheral intravenous devices.
Citation: Singapore Nursing Journal, 01 July 2002, vol./is. 29/3(20-23), 02180995
Language: English
Publication Type: journal article
Source: CINAHL

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by M Bonson - 2012 - Related articles
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Policy for Peripheral Venous Cannulation - NHS North Somerset
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Demonstrate clear knowledge of Trust policies, relating to peripheral Intravenous Cannulation, including Infection Control. Demonstrate a good understanding of ...
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campbellteaching.co.uk/lesson%20notes/.../CANNULATION.htm
If infection is identified in peripheral or central venous catheters they should be ... as a cause of mortality secondary to peripheral intravenous cannulation.(12).

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Peripheral intravenous cannulation: safe ... - Nursing Standard
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Apr 4, 2007 – route for infection and therefore requires strict ... and removal techniques for peripheral intravenous cannulation. The article is intended as a ...

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H Hirschmann, L Fux, J Podusel, K Schindler… - … of Hospital Infection, 2001 - Elsevier
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C Rourke, C Bates, RC Read - Journal of Hospital Infection, 2001 - Elsevier ...
... Keywords. Nosocomial; cross-infection; handwashing; venepuncture; tourniquets. References. ... 2; M Golder, CLH Chan, S O'Shea, K Corbett, IL Chrystie, G French; Potential risk of cross-infection during peripheral-venous access by contamination of tourniquets. ...
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D Macklin - AJN The American Journal of Nursing, 2003 - journals.lww.com ...
... Phlebitis: A painful complication of peripheral IV catheterization that may be prevented. Macklin, Denise BSN, RN,C, CRNI. Article Outline. Collapse Box Author Information. Denise Macklin is the president of Professional Learning Systems, Inc., Marietta, GA. ...
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S Adhikari, M Blaivas, D Morrison... - Journal of Ultrasound ..., 2010 - Am inst Ultrasound Med ...
... emergency ultrasound community. 11 It has been recommended to minimize the contact of the needle with the gel because of concerns for increased risk of infection during ultrasound-guided peripheral IV cannulation. 12 Aponte et ... Cited by 10 Related articles All 5 versions Cite