E-Resources for Evidence-Based Practice

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Objectives

- Describe E-Resources to use for evidence-based nursing (EBN) practice

- Identify strategies to improve searching skills to find appropriate evidence on the web to improve patient care
Thanks to Janet Schnall for the content of her slides.
Presentation web site

http://libguides.uwb.edu/EResourcesEBP
What is evidence-based practice?

- Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.

- The practice of evidence based medicine means *integrating individual clinical expertise with the best available external clinical evidence* from systematic research.

Evidence-Based Practice

The EBM Triad

- Individual Clinical Expertise
- Best External Evidence
- Patient Values & Expectations
5 Steps for EBN Practice

1. Convert your information into an answerable question (PICO)

2. Search the literature for the best available evidence

3. Evaluate search results for validity and usefulness

4. Apply the findings to your clinical practice along with clinical expertise and patient’s perspective to plan care

5. Evaluate your professional performance (self reflection; audit; peer assessment)
What makes good evidence?

**Good**
- Based on scientific research
- RCT
- Systematic review
- Meta-analysis
- Clinical guidelines

**Shoddy**
- Opinion
- Consensus
- Because it’s been done this way for 100 years
Why do nurses need to do EBP?

- Results in better patient outcomes:
  Failure to use evidence results in lower quality, less effective and more expensive care.


- Standards of practice and “best practices” change over time
- Keeps practice current and relevant
- Increases confidence in decision making
Barriers to Nurses using EBP

- Lack of time
- Lack of value of research in practice
- Lack of understanding of electronic databases
- Lack of computer skills
- Difficulty understanding research articles

Lots of Evidence Pyramids!
Evidence Pyramid

Systematic Reviews, Meta-Analyses  
ex. Cochrane

Evidence Summaries, Evidence Guidelines  
ex. DynaMed, Nursing Reference Center, Natural Standard, NGC

Randomized Controlled Trials (RCTs), Cohort Studies, Qualitative Studies  
ex. MEDLINE, CINAHL

Background Information, Expert Opinion  
ex. Textbooks
How to Locate E-Resources

- Ask your librarian
- Washington licensed nurses: HEAL-WA.org
- Oregon: Resources for Non-OHSU Oregon licensed health professionals
  http://www.ohsu.edu/xd/education/library/orhp.cfm
- Alaska: EBSCO Nurse Academics
- Idaho: ProQuestHealth and Medical Complete www.lili.org
- Others: check with your public or State library
Search for the Best Evidence to Answer the Question
Search Databases Efficiently for Research Journal Articles

- MEDLINE/PubMed
  ebscohost.com OR pubmed.gov

- CINAHL/CINAHL Plus
  ebscohost.com
MEDLINE/PubMed

ebscohost.com OR
pubmed.gov

- PubMed includes MEDLINE (1940’s+)
- Indexes 5,000 biomedical journals
- Covers all aspects of biosciences and healthcare
- 75%-80% of citations have abstracts
- Updated 5x/week
Two MEDLINE/PubMed Strategies for Finding Evidence-Based Citations

1. Use Publication Type of Article limits
   - Randomized Controlled Trial
   - Meta-Analysis
   - Practice Guideline
   - Clinical Trial
   - Consensus Development Conference

2. Use Clinical Queries
Q: What frequency of turning is recommended to prevent pressure ulcers in hospitalized patients with recent CVA and reduced mobility?
Strategy #1: Limit to RCTs under Publication Type
MEDLINE Results

1. Turning for Ulcer Reduction: a multisite randomized clinical trial in nursing homes.

To determine optimal repositioning frequency of nursing home (NH) residents at risk for pressure ulcers (PrUs) when cared for on high-density foam mattresses.

Subjects: Ontario; United States; Beds adverse effects; Nursing Homes supply & distribution; Pressure Ulcer nursing; Aged: 65+ years; Aged: 80 and over; All Adult: 19+ years; Female: Male


To test the effectiveness of a pressure ulcer (PU) prevention intervention featuring musical cues to remind all long-term care (LTC) staff (nursing and ancillary) to help every resident move or reposition.

Subjects: United States; Cues; Homes for the Aged; Long-Term Care methods; Music Therapy methods; Pressure Ulcer prevention & control; Aged: 65+ years; All Adult: 19+ years; Female: Male
Conduct a search in PubMed to bring up the “filters” on left side of the page.
Strategy #2: Clinical Queries Link: Found on the PubMed Advanced Search Page

PubMed Clinical Queries

Results of searches on this page are limited to specific clinical research areas. For comprehensive searching, please use the PubMed Advanced Search Page.

Clinical Study Categories

- **Category**: Therapy
- **Scope**: Broad

Systematic Reviews

**Results: 5 of 35**

A systematic review of economic evaluations assessing interventions aimed at preventing or treating pressure ulcers.

Palfreyman SJ, Stone PW.

Continuous bedside pressure mapping and rates of hospital-associated pressure ulcers in a medical intensive care unit.

Behrendt R, Ghaznavi AM, Mahan M, Craft S,

**Results: 5 of 12**

Prevention of Pressure Ulcers Among People With Spinal Cord Injury: A Systematic Review.

Groah SL, Schladen M, Pineda CG, Hsieh CH.
PM R. 2014 Dec 18; Epub 2014 Dec 18.

A systematic review of economic evaluations assessing interventions aimed at preventing or treating pressure ulcers.

Palfreyman SJ, Stone PW.
CINAHL or [CINAHL Plus] cinahl.com

- Cumulative Index to Nursing and Allied Health Literature
- Provides coverage from 1982 [1937] to date, of nursing and 17 allied health disciplines literature
- 1700+ [3800+] journals indexed including virtually all English-language nursing journals
- Can easily search for Research articles
CINAHL: Enter search terms

Searching: CINAHL Complete

- pressure ulcer
- AND prevention
- AND turning or reposition*

[Search button]
CINAHL Limit Your Results Screen

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CINAHL Publication Type Limits

- Clinical trial
- Critical path
- Meta-synthesis
- Practice guidelines
- Research
- Standards
- Systematic review
1. A systematic review of economic evaluations assessing interventions aimed at preventing or treating pressure ulcers

Palfreyman, Simon J.; Stowe, Patrice W.; International Journal of Nursing Studies, 2016, 52 (3): 709-83. (journal article - research, systematic review, tables/Charts) ISSN: 0020-7489 CINAHL AN: 2012002261

Abstract: Background: Pressure ulcers have an adverse impact on patients and can also result in additional costs and workload for healthcare providers. Interventions to prevent pressure ulcers are focused on identifying at-risk patients and using systems such as mattresses and turning to relieve pressure. Treatments for pressure ulcers are directed towards promoting wound healing and symptom relief. Both prevention and treatment have associated costs for healthcare providers. The aim of this study was to systematically review the economic evidence for prevention and treatment interventions for pressure ulcers. Design: A systematic review of comparative clinical studies that evaluate interventions to either prevent or treat pressure ulcers. Data sources: Searches of the major electronic databases were conducted to identify articles on costs or economic analysis for interventions directed towards prevention or treatment of pressure ulcers. Comparative clinical studies were included. Review articles, case series, non-randomised studies in a foreign language that did not have an abstract in English were excluded from the review. Methods: Decisions regarding inclusion or exclusion were based on a consensus of the authors of the title or abstract. Potential citations were obtained for more detailed review and assessed for inclusion criteria. The studies identified for inclusion were assessed using the key criteria of the CHEERS checklist. Costs were standardised to US dollars and adjusted for inflation to 2013. Results: The searches identified 108 potential studies. After review of the citations a total of 12 studies were included: 12 examined prevention interventions and 11 treatments. Review against the CHEERS criteria showed that the majority of included trials had poor reporting and a lack of detail regarding calculation. Few studies reported more than aggregate costs of treatments with only a small reporting unit cost outcomes. Conclusions: Existing evidence was poor in regard to the cost-effectiveness of interventions for the prevention and treatment of pressure ulcers. Much of the published evidence was poor reporting quality when compared to guidelines which provide key criteria for studies to examine costs within an economic analysis.

Subjects: Pressure Ulcer Therapy; Pressure Ulcer Prevention and Control; Pressure Ulcer Care Economics; Skin Care Economics; Costs and Cost Analysis

Cited References: (93)

6. Factors contributing to evidence-based pressure ulcer prevention. A cross-sectional study.


Abstract: Background: Implementation of evidence-based care for pressure ulcer prevention is lacking. As the hospital organization is complex, more knowledge is needed to understand how nursing care in this area can be improved. Objectives: The present study investigated the associations between variables on different levels in the healthcare setting (patient, unit, hospital) and the documentation of (1) risk assessment and (2) skin assessment within 24 h of admission, the use of (3) pressure-reducing mattresses and (4) planned repositioning in bed. Design: A cross-sectional study. Design: A cross-sectional study. Participants: Geriatric (n = 8), medical (n = 26) and surgical (n = 19) units. All adult patients (>17 years), in total 925, were included. Methods: A one-day prevalence study was conducted using the methodology specified by the European Pressure Ulcer Advisory Panel, together with the established methods used by the Collaborative Alliance for Nursing Outcomes. Independent variables were patient characteristics, hospital type, unit type, nurse staffing and workload. Dependent variables were documented risk and skin assessment within 24 h of admission, pressure-reducing mattresses and planned repositioning in bed. The data were analysed with Logistic regression using the Generalized Estimating Equation (GEE) approach. Results: Patients at risk of developing pressure ulcers (Braden < 17) had higher odds of having risk assessment documented, and of receiving pressure-reducing mattresses and planned repositioning. Patients at the general hospital were less likely to have risk and skin assessment documented and to receive pressure-reducing mattresses. On the other hand, planned repositioning was more likely to be used at the general hospital. When total hours of nursing care was lower, patients had higher odds of having pressure-reducing mattresses but were less likely to have planned repositioning. Conclusion: Patient characteristics (high age and risk score) and hospital type were associated with pressure ulcer prevention. Surprisingly, nurse staffing played only a minor role. Leaders in healthcare organizations should establish routines on different levels that support evidence-based pressure ulcer prevention, and registered nurses need to assume responsibility for bedside care.

Subjects: Pressure Ulcer Prevention and Control; Nursing Practice; Evidence-Based Nursing Staff; Hospital; Middle Aged: 45-64 years; Aged: 66- years; Aged: 80 and over; Male; Female

Cited References: (31) Times Cited in this Database: (1)
To see the Full Text, when no is link available --click on the article title

Scroll down to, and click on the “DOI” link to view the full text
Factors contributing to evidence-based pressure ulcer prevention. A cross-sectional study

Eva Swing, a,b,c, Ewa Idvald, d,c, Hans Högbner, a,b, Lena Gunningberg, a,c,d

a Clinical Teaching Centre, County Council of Gøteborg, Sweden
b Centre for Research & Development, Oskola University, County Council of Gøteborg, Sweden
c Department of Public Health and Caring Sciences, Uppsala University, Sweden
d Department of Caring Science, University of Gothenburg, Sweden

ABSTRACT

Background: Implementation of evidence-based care for pressure ulcer prevention is lacking. As the hospital organization is complex, more knowledge is needed to understand how nursing care in this area can be improved.

Objectives: The present study investigated the associations between variables on different levels in the healthcare setting (patient, unit, hospital) and the documentation of (1) risk assessment and (2) skin assessment within 24 h of admission, the use of (3) pressure-reducing mattresses and (4) planned repositioning in bed.

Design: A cross-sectional study.

Settings: One university hospital and one general hospital.

Participants: Geriatric (n = 8), medical (n = 24) and surgical (n = 19) units. All adult patients (>17 years), in total 825, were included.

Methods: A one-day prevalence study was conducted using the methodology specified by the European Pressure Ulcer Advisory Panel, together with the established methods used by the Collaborative Alliance for Nursing Outcomes. Independent variables were patient characteristics, hospital type, unit type, nurse staffing and workload. Dependent variables were documented risk and skin assessment within 24 h of admission, pressure-reducing mattresses and planned repositioning in bed. The data were analyzed with logistic regression using the Generalized Estimating Equation (GEE) approach.

Results: Patients at risk of developing pressure ulcers (Braden 17) had higher odds of having risk assessment documented, and of receiving pressure-reducing mattresses and planned repositioning. Patients at the general hospital were less likely to have risk and skin assessment documented and to receive pressure-reducing mattresses. On the other hand, planned repositioning was more likely to be used at the general hospital. When total hours of nursing care was lower, patients had higher odds of having pressure-reducing mattresses but were less likely to have planned repositioning.

Conclusion: Patient characteristics (high age and risk score) and hospital type were associated with pressure ulcer prevention. Surprisingly, nurse staffing played only a minor role. Leaders in healthcare organizations should establish routines on different levels that support evidence-based pressure ulcer prevention, and registered nurses need to assume responsibility for bedside care.
CINAHL Plus with Full Text

What is CINAHL Plus with Full Text?

CINAHL Plus with Full Text provides access to the literature in nursing and 17 allied health disciplines dating back to 1937. Over 4600 journals are indexed including virtually all English language nursing journals along with selected titles in biomedicine, alternative therapies, and consumer health. It also offers access to Evidence-Based Care Sheets, searchable cited references, and over 350 research instrument descriptions.

How is CINAHL Plus different from PubMed?

How is CINAHL Plus different from PubMed?

<table>
<thead>
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<th>PubMed</th>
<th>CINAHL Plus</th>
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<td>Coverage: 1937 to date</td>
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<td>Indexes 4900 journals in nursing and allied health</td>
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<td>Includes citations to journal articles, book chapters, dissertations, AVs, nurse practice acts, Evidence-Based Care Sheets, research instruments, etc.</td>
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Locating E-Journals

- Check with your library for access to full-text e-journals
- Check with your State or Public library
- HEAL-WA for WA state nurses
  heal-wa.org
  - Includes CINAHL and MEDLINE Complete
  - A-Z journals: 2,600 full-text journals
Open Access and Free Journal Sites

- BioMed Central, [biomedcentral.com](http://biomedcentral.com)
  - Independent publishing house providing immediate free access to peer-reviewed biomedical research
  - Includes BMC Nursing, etc.
- PubMed Central, [pubmedcentral.gov](http://pubmedcentral.gov)
  - National Library of Medicine's free digital archive of biomedical and life sciences journal literature
- Free Medical Journals, [freemedicaljournals.com](http://freemedicaljournals.com)
- Highwire Press, [highwire.stanford.edu](http://highwire.stanford.edu)
  - Provides full-text to over 1,000 peer-reviewed scientific, medical and social science journals.
Search for Practice Guidelines

- National Guideline Clearinghouse guideline.gov
- Nursing Reference Center ebscohost.com
- MEDLINE/PubMed pubmed.gov
- CINAHL cinahl.com
- Advanced Google or Google Scholar google.com/advanced_search?hl=en scholar.google.com
Clinical Practice Guidelines

- Systematically developed statements of appropriate care designed to assist the practitioner and patient make decisions about appropriate health care for specific clinical circumstances

- Usually based on the most current available research if from reputable, authoritative organizations

- Developed using widely varying standards
  - Cost may be considered as well as health outcomes or politics
National Guideline Clearinghouse
guideline.gov

- Initiative of the Agency for Healthcare Research and Quality (AHRQ)
- Database of clinical practice guidelines and related documents
- Free
- Updated weekly
- Voluntary participation
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<th>1. GUIDELINE SYNTHESIS: Prevention of Pressure Ulcers</th>
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<tbody>
<tr>
<td>6. Association for the Advancement of Wound Care guideline of pressure ulcer guidelines. 2010 Oct 1. NGC008120 Association for the Advancement of Wound Care - Nonprofit Organization. View all guidelines by the developer(s)</td>
</tr>
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Guideline Summary

Guideline Title

Pressure ulcer prevention and treatment protocol. Health care protocol.

Bibliographic Source(s)


Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Institute for Clinical Systems Improvement (ICSI). Pressure ulcer prevention and treatment. Health care protocol. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2010 Apr. 69 p. [102 references]
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<td>DateReleased</td>
<td>2009</td>
<td>2008 Jan (revised 2012 Jan)</td>
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<tr>
<td>Adaptation</td>
<td>Not applicable: The guideline was not adapted from another source.</td>
<td>Not applicable: The guideline was not adapted from another source.</td>
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<td>Source(s) of Funding</td>
<td>The European Pressure Ulcer Advisory Panel (EPUAP) and National Pressure Ulcer Advisory Panel (NPUAP) gratefully acknowledge the contributions of the following individuals and groups for financially supporting the presentation and dissemination of the guideline. All financial contributions were made after the guideline was developed and in no way influenced the development of the guideline or its content. Financial contributions are being used for the printing and dissemination of the guideline. The following Minnesota health plans provide direct financial support: Blue Cross and Blue Shield of Minnesota, HealthPartners, Medica, Security Health Plan of Wisconsin, and UCare. In-kind support is provided by the Institute for Clinical Systems Improvement’s (ICSI) members.</td>
<td>The National Institute for Health and Care Excellence (NICE)</td>
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Searching for Practice Guidelines in:

**Medline/ PubMed**

Limit to Practice Guideline
In **MEDLINE**, under Pub Type:

Limit to Practice Guidelines
under Article Types:

**CINAHL**

Limit to Practice Guidelines
under Publication Type
Search for Evidence Summaries

- DynaMed
  ebscohost.com/dynamed
- UpToDate
  uptodate.com
- Nursing Reference Center
  ebscohost.com
DynaMed
www.ebscohost.com/dynamed

- Provides summaries of the best evidence for over 3,500 clinical topics
- Can quickly browse and find key recommendations
- Updated daily
- Monitors content of over 500 journals and systematic review databases
- Available for PDA and mobile devices
pressure ulcer search

**Pressure ulcer**

Updated 2015 Mar 18 04:53:00 PM: hydrogel dressings have limited evidence to evaluate effect on wound healing in adults with pressure ulcers (Cochrane Database Syst Rev 2015 Feb 17) view update | Show more updates

**Related Summaries:**
- Diabetic foot ulcer
- Venous ulcer
- Osteomyelitis
- Cellulitis
- Peripheral arterial disease (PAD) of lower extremities
Prevention:

Risk assessment:
- perform structured risk assessment as soon as possible (NPUAP/EPUAP/PPIA Strength of Evidence A, Strong positive recommendation)\(^{(3)}\)
- always include comprehensive skin assessment (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- re-assess risk if patient's condition changes (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- assess risk for bedfast and/or chairfast (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- inspect skin affected by medical devices (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- for pediatric patients, assess skin at least once a shift (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- for obese patients, assess all skin folds regularly (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
- risk assessment scales

Repositioning:
- reposition all patients at risk for pressure ulcer unless contraindicated (NPUAP/EPUAP/PPIA Strength of Evidence A, Strong positive recommendation)\(^{(3)}\)
- consider clinical factors when determining frequency of repositioning, such as (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)\(^{(3)}\)
  - tissue tolerance
  - skin condition
  - activity and mobility levels
  - medical condition
  - treatment objectives
  - comfort
- general techniques\(^{(3)}\)
  - encourage patient to reposition regularly (NPUAP/EPUAP/PPIA Strength of Evidence C, Weak positive recommendation)
  - ensure that pressure is actually relieved or redistributed (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)
  - do not allow pressure on bony prominences with non-blanchable erythema (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)
  - when repositioning, reduce friction and shear by using manual handling aids (such as lift sheets), lifting, and not dragging (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)
  - if transferring patient who needs total assistance to a chair, use split leg sling mechanical lift if possible and remove sling after transfer (NPUAP/EPUAP/PPIA Strength of Evidence C, Weak positive recommendation)
  - do not increase pressure or shear forces (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)
  - do not leave any equipment or devices (such as moving/handling equipment, tubes, or bedpan) under patient unless it's designed for that purpose (NPUAP/EPUAP/PPIA Strength of Evidence C, Strong positive recommendation)
- techniques for patients in bed\(^{(3)}\)
DynaMed: Treatment Overview

Treatment overview:

- assess
  - ulcer category/stage
  - management of comorbidities, such as limited mobility, diabetes, peripheral arterial disease (PAD) of lower extremities, smoking
  - nutritional status
- address pain management
- reposition so that pressure is relieved or redistributed (NPUAP/EPUAP/PPPIA Strength of Evidence A, Strong positive recommendation)
- consider pressure-relieving support surfaces (NPUAP/EPUAP/PPPIA Strength of Evidence C, Strong positive recommendation)
- ulcer care
  - wound cleansing
    - potable water or normal saline appropriate for most pressure ulcers (NPUAP/EPUAP/PPPIA Strength of Evidence C, Weak positive recommendation)
    - consider topical antiseptics to manage biofilm (NPUAP/EPUAP/PPPIA Strength of Evidence C, Weak positive recommendation)
  - wound dressing
    - consider dressing that maintains moist wound environment and controls exudate without desiccating ulcer bed (NPUAP/EPUAP/PPPIA Strength of Evidence C, Strong positive recommendation)
    - hydrocolloid dressings may improve pressure ulcer healing rates (level 2 [mid-level] evidence)
DynaMed: Treatment, detailed

- Arginine-, zinc-, and antioxidant-enriched nutritional formula might increase complete healing in malnourished adults (level 2 [mid-level] evidence)
  - Based on randomized trial with high loss to follow-up and results of borderline statistical significance
  - 200 malnourished adults with stage II, III, or IV pressure ulcers living in long-term care settings or receiving home healthcare services randomized to energy-dense, protein-rich oral formula enriched with arginine, zinc, and antioxidants 400 mL/day vs. equal volume isocaloric, isonitrogenous control formula for 8 weeks
  - All patients received standard wound care, patients receiving home healthcare services were given general dietary advice, and institutionalized patients received a diet tailored to individual requirements
  - 31% lost to follow-up
  - Comparing enriched formula vs. control formula at 8 weeks
    - Complete healing in 16.9% vs. 9.7% (p = 0.097)
    - Pressure ulcer area reduced by mean of 60.9% vs. 45.2% (p = 0.026)
    - ≥ 40% reduction in pressure ulcer area in 69.9% vs. 54.1% (p = 0.02, NNT 7)
  - No significant differences in incidence of wound infections, mean reduction in pressure ulcer area at 4 weeks, or mean total number of dressings required
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<th>Level of evidence</th>
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<td>1b</td>
<td>Individual randomized controlled trial</td>
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<tr>
<td>B</td>
<td>2a</td>
<td>Systematic review of cohort studies</td>
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<tr>
<td></td>
<td>2b</td>
<td>Individual cohort study</td>
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<td></td>
<td>3a</td>
<td>Systematic review of case-control studies</td>
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<td></td>
<td>3b</td>
<td>Individual case-control study</td>
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<td>C</td>
<td>4</td>
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<td>D</td>
<td>5</td>
<td>Expert opinion without explicit critical appraisal or based on physiology or bench research</td>
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DynaMed Guidelines

Guidelines:

Guideline comparison:


International guidelines:

- National Pressure Ulcer Advisory Panel/European Pressure Ulcer Advisory Panel/Pan Pacific Pressure Injury Alliance (NPUAP/EPUAP/PPPIA) clinical practice guideline on prevention and treatment of pressure ulcers can be found at NPUAP/EPUAP/PPPIA 2014 Sep PDF
- international expert evidence-based recommendations on negative pressure wound therapy: treatment variables (pressure levels, wound filler and contact layer) can be found in J Plast Reconstr Aesthet Surg 2011 Sep;64 Suppl:S1
- Italian Society of Infectious Tropical Diseases (Societa Italiana di Malattie Infettive e Tropicali)/International Society of Chemotherapy (SIMIT/ISC) guideline on diagnosis and management of skin and soft-tissue infections can be found in J Chemother 2011 Oct;23(5):251

United States guidelines:

- Institute for Clinical Systems Improvement (ICSI) pressure ulcer prevention and treatment protocol can be found at ICSI 2012 Jan PDF or at National Guideline Clearinghouse 2012 Jul 30:36059
- Agency for Healthcare Research and Quality, formerly Agency for Health Care Policy and Research (AHCPR) guidelines on
  - treatment of pressure ulcers can be found at AHCPR 1994 Dec
  - prevention of pressure ulcers can be found at AHCPR 1992 May
- Hartford Institute for Geriatric Nursing (HIGN) evidence-based geriatric nursing protocols for best practice guideline on pressure ulcer prevention can be found at HIGN 2012 Jul PDF or at National Guideline Clearinghouse 2013 Sep 23:43935
INTRODUCTION — Pressure ulcers are among the most common conditions encountered in hospitalized patients or those requiring long-term institutional care [1]. Ulcer prevention is a cost-effective approach that positively impacts health status [2-6]. As of October 2008, guidelines from the Center for Medicare and Medicaid Services (CMS) in the United States state that hospitals will no longer receive additional payments when patients develop stage 3 or 4 pressure ulcers (table 1) [7]. Failure to provide appropriate pressure ulcer prevention and care may also expose providers to liability [8].

The prevention of pressure ulcers will be reviewed here. The treatment, epidemiology, pathogenesis, clinical manifestations, and staging are discussed separately. (See “Epidemiology, pathogenesis and risk assessment of pressure ulcers” and “Clinical staging and management of pressure ulcers”.)

RISK ASSESSMENT — Risk assessment, which includes a comprehensive history and physical examination, should identify patients at risk for pressure ulcers who will benefit from preventive measures, as well as factors that are potentially correctable [9]. The pathogenesis of pressure ulcers, risk factors for pressure ulcers, and risk prediction tools are discussed in detail separately. (See “Epidemiology, pathogenesis and risk assessment of pressure ulcers”, section on “Risk factors”, and “Epidemiology, pathogenesis and risk assessment of pressure ulcers”, section on “Risk prediction”.)
Repositioning interval — Typically, a two-hour interval is recommended for repositioning. It has been demonstrated that skin erythema and ischemic changes can occur in healthy adults in less than two hours on a standard mattress [23]. Skin and soft tissues with borderline perfusion at baseline can develop irreversible changes with even shorter intervals of pressure. Whether a two-hour frequency (versus a longer interval) is optimal is uncertain, particularly when a high-quality support surface is being used [24]. A Cochrane systematic review included only three trials evaluating the effects of any repositioning schedule or different patient positions with respect to the incidence of pressure ulcer in the adult population [25]. All three trials were at high risk of bias [26-28]. Two trials compared the 30° and 90° tilt positions using similar repositioning frequencies. A pooled analysis found no difference for the risk of developing pressure ulcer for 30° tilt versus the standard 90° position. The third trial compared differing repositioning frequencies. No significant differences in the incidence of pressure ulcers were found for repositioning every two versus every three hours on a standard mattress, or between every four and every six hours on viscoelastic foam. However, each of these studies was underpowered to detect meaningful differences. Whether any of these interventions are cost-effective remains unclear. A later study of 942 nursing home residents at risk for pressure ulcer and managed on a high-density foam mattress found no difference in pressure ulcer incidence for those turned at two three-, or four-hour intervals [29].

Continuous rotation — Continuous lateral rotation was originally developed to enhance respiratory function in hospitalized patients, but has been advocated by some for the prevention and management of pressure ulcers. Continuous lateral rotation is achieved with a mechanized bed that continuously rotates around its longitudinal axis. Observational studies indicate modest improvements in healing rates when continuous lateral rotation is added to an
Nursing Reference Center
ebscohost.com

- Point-of-care EBP nursing resource
- Includes **Evidence-Based Care Sheets**
  - evidence-based summaries on key topics incorporating the best available evidence through rigorous systematic surveillance
- Also includes full-text journals and texts; practice guidelines; skills and procedures; patient education materials; CE, and more
<table>
<thead>
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**Key Content**

- **Quick Lessons**
  Clinically-organized nursing overviews that are designed to map the nursing workflow

- **Evidence-Based Care Sheets**
  Evidence-based summaries on key topics incorporating the best available evidence through rigorous systematic surveillance
Pressure Ulcers: Prevention Strategies

What We Know
- Pressure ulcers (PUs) are also referred to as ischemic ulcers caused by poor blood flow. PUs are caused by a combination of factors, including pressure, friction, shear, and moisture.
- Risk factors for PUs include older age, history of smoking, diabetes, chronic kidney disease, and immobility.

What We Can Do
- Learn more about PU prevention so you can accurately assess your patient’s personal characteristics and health education needs. Share this knowledge with your colleagues.
- Collaborate with an interdisciplinary healthcare team to prevent PU development.
- Assess PU risk and skin condition.
  - On admission, assess for skin compromise, including redness, warmth, and swelling.
  - Use a validated skin assessment tool, such as the Braden Scale.

Coding Matrix

References

Revised July 11, 2014
Use a Meta-Search Engine to Find Evidence Sites

- Allows you to search multiple other search engines simultaneously and combine the results.
TRIP Database
tripdatabase.com

- Metasearch engine
- Performs a simple search of more than 75 databases
- Finds evidence based resources
- Searches Cochrane, National Guideline Clearinghouse, Bandolier, etc.
Search for Systematic Review and Meta-Analyses Resources

- Cochrane Database of Systematic Reviews
- PubMed Systematic Reviews
- CINAHL
Systematic review vs Meta-analysis

- **Systematic review**: a literature review of RCTs focused on a single question which tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question.

- **Meta-analysis**: systematic review combining results of several studies using quantitative statistics.
Cochrane Database of Systematic Reviews

- ‘Gold standard’ for high quality systematic reviews
- Includes full-text
- Abstracts available in CINAHL and MEDLINE/PubMed
Cochrane Library Search

Search
Title, Abstract, Keywords
pressure ulcer*
reposition* or turning

Search Manager
Medical Terms (MeSH)
Browse
Go
Save
Add to Search Manager

Cochrane Database of Systematic Reviews: Issue 3 of 12, March 2015

Issue updated daily throughout month

There are 20 results from 8787 records for your search on 'pressure ulcer' in Title, Abstract, Keywords and reposition* or turning in Cochrane Reviews'

Sort by
Relevance: high to low

Select all | Export all | Export selected

Support surfaces for pressure ulcer prevention
Elizabeth McInnes, Asmara Jammali-Blasi, Sally EM Bell-Syer, Jo C Dumville and Nicky Cullum
Online Publication Date: April 2011

Support surfaces for treating pressure ulcers
Elizabeth McInnes, Jo C Dumville, Asmara Jammali-Blasi and Sally EM Bell-Syer
Online Publication Date: December 2011

Repositioning for pressure ulcer prevention in adults
Brigid M Gillespie, Wendy P Chaboyer, Elizabeth McInnes, Bridie Kent, Jennifer A Whitty and Lukman Thalib
Online Publication Date: April 2014

Dressings and topical agents for preventing pressure ulcers
Zena EH Moore and Joan Webster
Online Publication Date: August 2013
Authors' conclusions

Despite the widespread use of repositioning as a component of the management plan for individuals with existing pressure ulcers, no randomised trials exist that assess the effects of repositioning patients on the healing rates of pressure ulcers. Therefore, we cannot conclude whether repositioning patients improves the healing rates of pressure ulcers. The effect of repositioning on pressure ulcer healing needs to be evaluated.
Some Cochrane Library Pressure Ulcer Systematic Reviews

- Re-positioning for pressure ulcer prevention
- Nutritional interventions for preventing and treating pressure ulcers
- Support surfaces for pressure ulcer prevention
- Wound cleansing for pressure ulcers
- Risk assessment tools for the prevention of pressure ulcers
- Educational interventions for healthcare professionals to prevent pressure ulcers
Finding Systematic Reviews and Meta-Analyses in PubMed

Use Clinical Queries: Systematic Reviews

- PubMed Clinical Queries

Limit to Type of Article: Meta-Analysis

- Conduct a search to see the Article Types options
Finding Systematic Reviews and Meta-Analyses in CINAHL

- Limit search to Publication Type: **Systematic Review**

- Search for **Meta Analysis** as a Subject Heading
Searching for Evidence Pyramid

- MetaSearch Engines: ex. TRIP
- Systematic Reviews, Meta-Analyses: ex. Cochrane
- Evidence Summaries, Evidence Guidelines: ex. DynaMed, Nursing Reference Center, Natural Standard, NGC
- Randomized Controlled Trials (RCTs), Cohort Studies, Qualitative Studies: ex. MEDLINE, CINAHL
- Background Information, Expert Opinion: ex. Textbooks, Uptodate
Navigating the Web Beyond Basic Google to Find Evidence?

- Google  google.com
  - Largest search engine: over 25 billion pages
  - Relevance ranking based on link analysis
- Google Advanced Search  www.google.com/advanced_search?hl=en
- Google Scholar  scholar.google.com
Google Advanced Search Features
www.google.com/advanced_search?hl=en

- **File Format**, *i.e.* pdf
- **Date**, *i.e.* pages updated in last 3 months
- **Occurrences**, *i.e.* terms appear in title
- **Domain**, *i.e.* .gov, .edu
- **Links**, *i.e.* pages that link to the page
Advanced Google Search for Guidelines

Find pages with...
- all these words: pressure ulcer prevention guidelines
- this exact word or phrase:
- any of these words:
- none of these words:
- numbers ranging from: to

Then narrow your results by...
- language: any language
- region: any region
- last update: anytime
- site or domain:
- terms appearing: in the title of the page

SafeSearch: Show most relevant results
reading level: no reading level displayed
file type: any format
usage rights: not filtered by license

.gov, .edu
in title
pdf

Advanced Search
Google search limiting to .org sites
Google Scholar
scholar.google.com

- Searches for **scholarly literature**, including peer-reviewed papers, theses, books, abstracts and technical reports
- Finds articles from academic publishers, professional societies, universities, etc. as well as scholarly articles on the web
- "Cited by" link identifies # that have cited the original
- Access to full text only available with subscription
- **Caution:** Not a reliable sole source for searching scholarly literature
The turn team: a novel strategy for reducing pressure ulcers in the surgical intensive care unit
MD Still, LC Cross, M Dunlap, R Rencher... - Journal of the American ..., 2013 - Elsevier
... For example, all registered nurses and PCAs received online training in pressure ulcer prevention
and Braden scale scoring, so it is possible that the decrease in pressure ulcers was due, at least
in part, to increased knowledge and preventive care as opposed to ...
Cited by 15  Related articles  All 5 versions  Cite  Save  More

Continuous bedside pressure mapping and rates of hospital-associated pressure ulcers in a medical intensive care unit
R Behrendt, AM Ghaznavi, M Mahan, S Craft... - American Journal of ..., 2014 - AACN
... Ulcers were categorized according to the international guidelines 4: stage I, nonblanchable
erythema; stage II ... to be greater than 75 mm Hg, and blue areas show low pressures of less ... clinically
unstable, then the caregivers were advised to minimize the high-pressure area, not ...
Cited by 4  Related articles  All 3 versions  Cite  Save  More

Turning Evidence Based Research into Evidence Based Practice in Pressure Ulcer Prevention
M Duffy - 6th Annual Nursing Quality Conference (Jan. 25-27, ..., 2012 - ana.confex.com
Purpose: Prevalence of unit acquired pressure ulcers continues to be an issue despite
extensive evidence based research. The aim of this project is to effectively implement
research into practice and decrease pressure ulcer prevalence in a high-risk patient ...
Cite  Save  More

A systematic review of economic evaluations assessing interventions aimed at preventing or
treating pressure ulcers
SJ Palfreyman, PW Stone - 2014 - Elsevier
Must Evaluate Web Resources:
Evaluation Strategies

- Evaluate using Criteria for Evaluating Web Resources
- Determine the type of site by analyzing Web Site Addresses
- A User's Guide to Finding and Evaluating Health Information on the Web
  www.mlanet.org/resources/userguide.html
Criteria for Evaluating Web Sites

http://media.hsl.washington.edu/media/howto/navigating/criteria.pdf

- Authority
- Accuracy
- Objectivity
- Currency
- Coverage
- Design
Analyze the Website Address

- edu
- org
- com
- gov
- net

The URL (Uniform Resource Locator) includes the name of the host computer which can indicate the purpose of the web site.

Example URL: http://www.cdc.gov/nip/child.htm

- **Name of host computer**: www.cdc.gov
- **sub directory**: nip
- **filename**: child.htm

- **How information is transmitted**: http
- **filename**: child.htm
List of E-Resources for Ambulatory Care
From Janet Schnall in 2014.
Handout located online at
http://media.hsl.washington.edu/media/schnall/AmbCare2014handout.pdf

E-Resources for Ambulatory Care Nursing
Janet G. Schnall, MS, AHIP
University of Washington Health Sciences Libraries
schnall@uw.edu
http://libguides.hsl.washington.edu/schnall

This list includes selected E-Resources for ambulatory care nursing.

Key
$=Fee required (or contact your local library)
M=Mobile (includes mobile applications and interfaces optimized for mobile access)
O=Online
H=HEAL-WA (Online access to evidence-based health information resources for Washington State nurses and other health professionals; registration required) http://heal-wa.org/
*=E-Resource discussed in the presentation

General Medical Information
ACCESSSS http://plus.mcmaster.ca/accessss/
Meta-search engine that simultaneously searches evidence-driven medical publications and high quality clinical literature. Need to register. O*

CINAHL Cumulative Index to Nursing and Allied Health Literature
http://www.ebscohost.com/biomedical-libraries/cinahl-database
Indexes the literature of nursing, biomedicine, health sciences librarianship, alternative/complementary medicine, consumer health and 17 allied health disciplines. SHMO

Cochrane Database of Systematic Reviews http://www.cochrane.org/
Systematic reviews of primary research in human health care and health policy that investigate the effects of

List of E-Resources for Ambulatory Care
From Janet Schnall in 2014

**E-Resources for Ambulatory Care Nursing**

Janet G. Schnall, MS, AHIP
University of Washington Health Sciences Libraries
schnall@uw.edu
http://libguides.hsl.washington.edu/schnall

This list includes selected E-Resources for ambulatory care nursing.

**Key**

$ = Fee required (or contact your local library)
M = Mobile (includes mobile applications and interfaces optimized for mobile access)
O = Online
H = HEAL-WA (Online access to evidence-based health information resources for Washington State nurses and other health professionals; registration required) [http://heal-wa.org/](http://heal-wa.org/)
*=E-Resource discussed in the presentation

**CINAHL** Cumulative Index to Nursing and Allied Health Literature
http://www.ebscohost.com/dnbimedical-libraries/the-cinahl-database
Indexes the literature of nursing, biomedicine, health sciences librarianship, alternative/complementary medicine, consumer health and 17 allied health disciplines. SHMO

**Cochrane Database of Systematic Reviews** [http://www.cochrane.org/](http://www.cochrane.org/)
Systematic reviews of primary research in human health care and health policy that investigate the effects of interventions for prevention, treatment, and rehabilitation. Internationally recognized as the highest standard in evidence-based health care. SHMO

Evidence-based summaries for over 3,500 topics that answer clinical questions occurring during practice. Updated daily, monitors the content of more than 500 medical journals and systematic evidence review databases. Includes drug and disease information. SHMO*

Point of care clinical reference featuring up-to-date, peer-reviewed medical reviews organized by specialty. MO
Final Thoughts

- Remember key resources to find evidence for your clinical practice: PubMed/MEDLINE and CINAHL
- NGC, TRIP
- DynaMed, Nursing Reference Center
- Cochrane Database of Systematic Reviews...
- **Apply** the findings to your clinical practice along with your clinical expertise and patient’s perspective to plan care
Thank You!
Questions?

PowerPoint:
http://libguides.uwb.edu/EResourcesEBP

Julie Planchon Wolf, MLIS
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