The Evidence Extracting-Summarizing-Embedding

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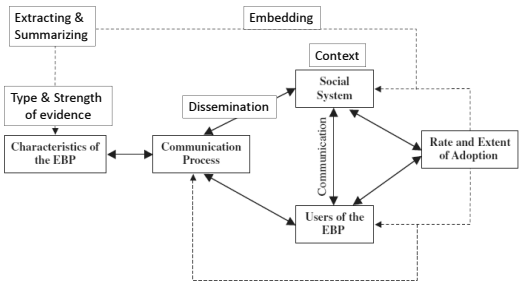
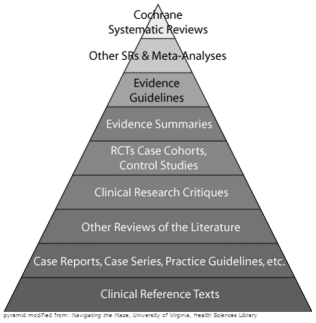
Implementation Model



Titler 2010

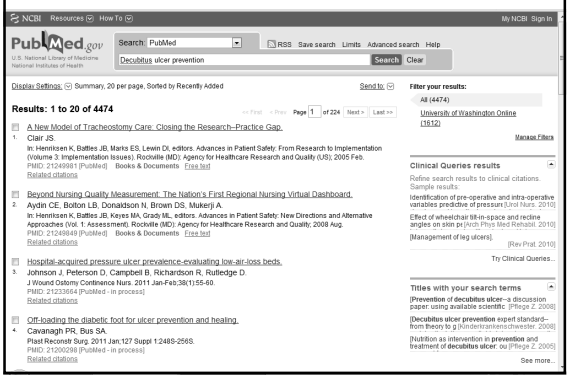
EXTRACTING

Levels of Evidence



pyramid modified from: Navigating the Haze, University of Virginia, Health Sciences Library

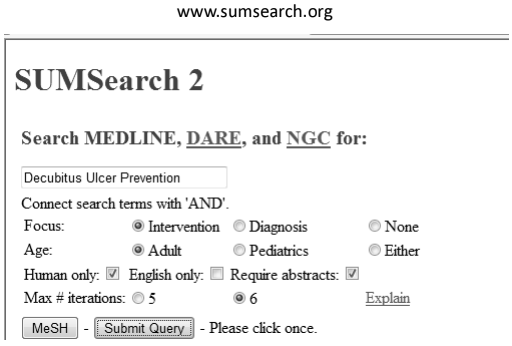
PubMed Search

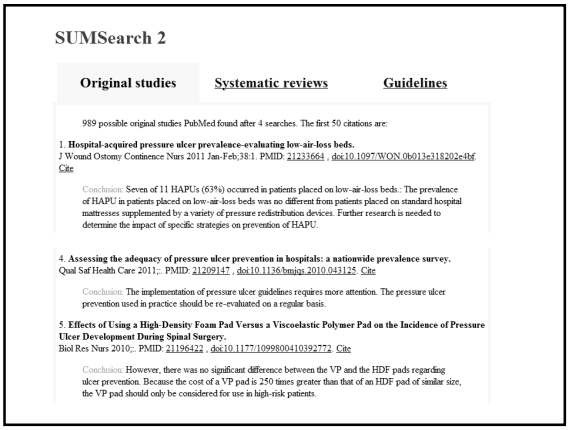


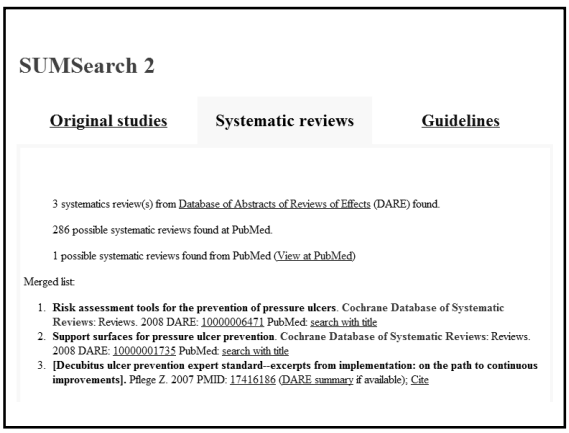
Meta-Search Engines
TRIP
SUMSearch

SUMSearch

www.sumsearch.org

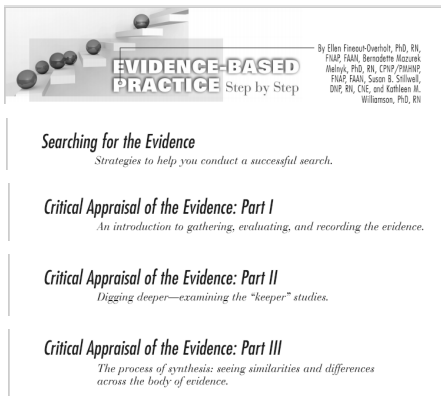






Evaluation of an Individual Study

- **What was the purpose of the study?**
  - Was it clear and easy to understand?
- **Who was studied**
  - What were the inclusion/exclusion criteria?
  - How were the subjects randomized?
  - Were the groups balanced in any way?
- **Intervention/Control**
  - What was the intervention – was it clearly outlined?
  - Were there any factors left out that would have been useful in understanding how the study was undertaken?
  - **Could you replicate the study given the information provided?**
- **Outcome variables**
  - What were the outcome variables?
  - Did the outcomes allow the investigators to meet the objectives of the study?
- **Results**
  - What were the results of the study?
  - Were the results supported by the data?
  - Do you agree with the interpretation of the results?
- **Implications**
  - **How would you apply this information in your practice (is it feasible)?**
  - **Would you recommend this article/clinical practice to your colleagues**?



SUMMARIZING

Summary Table

Study Info	Purpose	Sample	Intervention	Outcomes	Results	Feasibility/use
Meade (2006)	Q1-2 hr rounds on pt satisfaction and safety	14 hospitals	1-2 hour rounds	Patient satisfaction	↓ Falls ↓ Call light use ↑ Patient satisfaction	No details on rollout of intervention
Woodward	Decrease patient uncertainty regarding nurse availability, fall rates, satisfaction, call light use	? Not specified	1-2 hour rounds Charge Nurse completed rounds 4Ps	Patient satisfaction Falls Charge nurse survey	↓ Falls ↓ Call light use ↑ Patient satisfaction	?Charge nurse Theoretical framework No survey of charge nurse satisfaction
Gardner	Test model of practice that optimized the role of HA Test hourly rounds	Med-surg Australia 123 pts (68 experimental ward/61 control)	Q1 hr rounds by HA Standardized protocol	Pt satisfaction Practice environment	Pt satisfaction (NS)	Pt satisfaction survey developed No benefit from intervention

Grade of Recommendation	Benefits vs Risk & Burdens	Methodological Quality
1A: Strong recommendations/high-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	RCTs without important limitations or overwhelming evidence from observational studies
1B: Strong recommendation moderate quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs with important limitations (inconsistent results, methodological flaws, indirect or imprecise) or exceptionally strong evidence from observational studies
1C: Strong Recommendation, low quality or very low quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Observational studies or case series
2A: Weak recommendation, high quality evidence	Benefits closely balanced with risk and burden	RCTs without important limitations or overwhelming evidence from observational studies
2B: Weak recommendation, moderate quality evidence	Benefits closely balanced with risk and burden	RCTs with important limitations (inconsistent results, methodological flaws, indirect or imprecise) or exceptionally strong evidence from observational studies
2C: Weak recommendation, low quality or very low quality evidence	Uncertainty in the estimates of benefits, risks and burden: benefits, risk and burden may be closely balanced	Observational studies or case series

Guyatt C, et al. Grading Strength of Recommendations and Quality of Evidence in Clinical Guidelines. Report From an American College of Chest Physicians Task Force. *CHEST 2006; 129:174–181*

Stetler: Levels of Evidence

Level and Quality of Evidence	**Type of Evidence**
I	Meta analysis or systematic review of multiple controlled studies or clinical trials
II	Individual experimental studies with randomization
III	Quasi-experimental studies (nonrandomized controlled single group, pre-post, cohort, time series, or matched case design
IV	Nonexperimental studies, such as comparative and correlational descriptive research as well as qualitative studies
V	Program evaluation, research utilization, quality improvement projects, case reports, or benchmark data
VI	Opinions of respected authorities or the opinions of expert committee – may include textbooks and clinical product guidelines

American Association of Critical Care Nurses Evidence-Leveling System

Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Qualitative studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufacturers' recommendations only

Armola Crit Care Nurse 2009

EMBEDDING

Evidence-Based Policies and Procedures

Policy and Procedure Manual

References: Guidelines for Documenting **N-A-13.003**

A. Research References:

Research references should be footnoted as R_1, R_2, R_3, etc. in the body of the policy, procedure or document where the citation takes place. Specific footnote information should then be listed at the end of the document.

Example:

Research References:

R_1 Goode, C.J., Titler, M., Rakel, B., Ones, K.S., Kleiber, C., Small, S., & Triolo, P.K. (1991). A meta-analysis of effects of heparin flush and saline flush: Quality and cost implications. *Nursing Research*, 40, 423-430.

B. Literature References:

Literature references can be cited in two ways:

1. If an entire document is based on an article(s), the literature reference may be noted as such at the end of the document.
2. If a specific statement or section is based on information in the literature, that section should be footnoted as L_1, L_2, etc. with the specific footnote information noted at the end of the document.

Example:

Literature References:

L_1 Danek, G.D. & Norris, E.M. (1992). Pediatric IV catheters: Efficacy of saline flush. *Pediatric Nursing, 18*(2), 111-113.

C. National Guideline References:

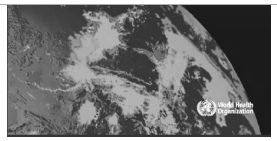
1. If an entire document is based on published guidelines, the National Guideline Reference may be noted as such at the end of the document.
2. If a specific statement or section is based on information in the guideline, that section should be footnoted as N1, N2, etc. with the specific footnote information noted at the end of the document.

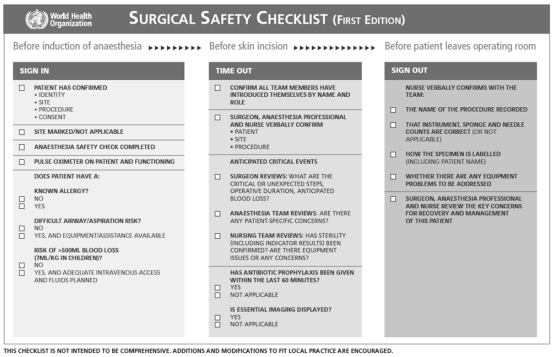
Example:

N1 Herr, K. et al. (2000). *Evidence-Based Guideline: Acute Pain Management in the Elderly.* AHRQ #1R01 HS10482-01. Agency for Healthcare Research and Quality.

What About Checklists?

A checklist is 'a formal list used to identify, schedule, compare or verify a group of elements or . . . used as a visual or oral aid that enables the user to overcome the limitations of short-term human memory'





World Health Organization — SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▸▸▸▸▸▸▸▸▸ Before skin incision ▸▸▸▸▸▸▸▸▸▸▸▸▸ Before patient leaves operating room

SIGN IN

- ☐ PATIENT HAS CONFIRMED
  - IDENTITY
  - SITE
  - PROCEDURE
  - CONSENT
- ☐ SITE MARKED/NOT APPLICABLE
- ☐ ANAESTHESIA SAFETY CHECK COMPLETED
- ☐ PULSE OXIMETER ON PATIENT AND FUNCTIONING

DOES PATIENT HAVE A:

KNOWN ALLERGY?
☐ NO
☐ YES

DIFFICULT AIRWAY/ASPIRATION RISK?
☐ NO
☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?
☐ NO
☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

TIME OUT

- ☐ CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE
- ☐ SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM
  - PATIENT
  - SITE
  - PROCEDURE

ANTICIPATED CRITICAL EVENTS

- ☐ SURGEON REVIEWS: WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?
- ☐ ANAESTHESIA TEAM REVIEWS: ARE THERE ANY PATIENT-SPECIFIC CONCERNS?
- ☐ NURSING TEAM REVIEWS: HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?
☐ YES
☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?
☐ YES
☐ NOT APPLICABLE

SIGN OUT

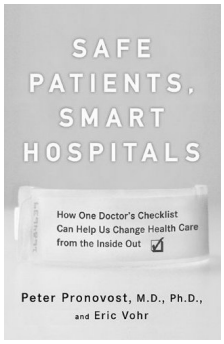
- ☐ NURSE VERBALLY CONFIRMS WITH THE TEAM:
- ☐ THE NAME OF THE PROCEDURE RECORDED
- ☐ THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT (OR NOT APPLICABLE)
- ☐ HOW THE SPECIMEN IS LABELLED (INCLUDING PATIENT NAME)
- ☐ WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED
- ☐ SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.

Rules from the Aviation Industry

- Succinct items (✓ vs algorithm or procedure)
- No more than 1 page
- Sentences simple and clear, yet maintain professional language of the field
- Cluttering and coloring is limited
- Items amenable to verbal confirmation
- **Checklists associated with actions that allow corrections or modifications to ensure safety**

Weiser 2010/Winters 2010



Technical work answers problems with known answers and is skill and knowledge based

- Easy to identify
- Often lend themselves to quick and easy solutions
- Often solved by an authority or expert
- Requires change in just one or a few places; often contained within organizational boundaries
- People are generally receptive to technical solutions
- Solutions can often be implemented quickly – even by edict

Heifetz & Laurie Harvard Business Review 1997

Adaptive work is required when our deeply held beliefs are challenged, when the values that made us successful before become less relevant and when legitimate, yet competing perspectives emerge

- Difficult to identify (easy to deny)
- Require changes in values, beliefs, roles, relationships and approaches to work
- People with the problem do the work of solving it
- Require change in numerous places; usually crosses organizational boundaries
- People often resist even acknowledging adaptive challenges
- Solutions require experiments and new discoveries; they can take a long time to implement and cannot be implemented by edict

Heifetz & Laurie - Harvard Business Review 1997

Leading Change

	Executive Leaders	Team Leaders	Staff
Engage adaptive	**How Do I Make the World a Better Place?** ➢How do I create an organization that is safe for patients and rewarding for staff? ➢How does this strategy fit our mission?	**How Do I Make the World a Better Place?** ➢How do I create a unit that is safe for patients and rewarding for staff? ➢How do I touch their hearts?	**How Do I Make the World a Better Place?** ➢Do I believe I can change the world, starting with my unit? ➢Can I help make my unit safer for patients and a better place to work?
Educate technical	**What Do I Need to Know?** ➢What is the business case? ➢How do I engage the Board and Medical Staff? ➢How can I monitor progress?	**What Do I Need to Know?** ➢What is the evidence? ➢Do I have executive and medical staff support? ➢Are there tools to help me develop a plan?	**What Do I Need to Know?** ➢Why is this change important? ➢How are patient outcomes likely to improve? ➢How does my daily work need to change? ➢Where do I go for support?
Execute adaptive	**What Do I Need to Do?** ➢Do the Board and Medical Staff support the plan and have the skills and vision to implement? ➢How do I know the team has sufficient resources, incentives and organizational support?	**What Do I Need to Do?** ➢Do the Staff Know the plan and do they have the skills and commitment to implement? ➢Have we tailored this to our environment?	**What Do I Need to Do?** ➢Can I be a better team member and team leader? ➢How can I share what I know to make care better? ➢Am I learning from defects?
Evaluate technical	**How Will I Know I Made a Difference?** ➢Have resources been allocated to collect and use safety data? ➢Is the work climate better? ➢Are patients safer? ➢How do I know?	**How Will I Know I Made a Difference?** ➢Have I created a system for data collection, unit level reporting, and using data to improve? ➢Is the work climate better? ➢Are patients safer? ➢How do I know?	**How Will I Know I Made a Difference?** ➢What is our unit level report card? ➢Is the unit a better place to work? ➢ Is teamwork better? ➢Are patients safer? ➢How do I know?

IT'S ALL ABOUT ME

What's In It For Me?

Risk of SARS Associated with Inconsistent Use of PPE (Lau 2004)	
PPE	**OR**
N95 mask or paper facemask	2.0
Goggles	6.4
• ≥ 3	7.9
# Equipment inconsistently used /caring for general pt	
•0	1.0
•1 to 2	4.9
• ≥ 3	10.8

50% of healthcare workers with documented H1N1 infections were infected in a healthcare setting

MMWR 2009 **58(23);641-645**

The Law of Epidemics

- **The Power of Context**
  - "Epidemics are sensitive to the conditions and circumstances of the times and places in which they occur."
- **The Stickiness Factor**
  - The specific content of a message that renders its impact memorable
- **The Law of the Few**
  - "The success of any kind of social epidemic is heavily dependent on the involvement of people with a particular and rare set of social gifts."
  - 80/20 rule

Gladwell: The Tipping Point

Making Your Message Sticky
SUCCESS

- Principle 1. **S**implicity
- Principle 2. **U**nexpectedness
- Principle 3. **C**oncreteness
- Principle 4. **C**redibility
- Principle 5. **E**motions
- Principle 6. **S**tories

The Law of the Few

We are all more likely to act our way into a new way of thinking than to think our way into a new way of acting
-Pascale

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY MAY 2009, VOL. 30, NO. 5

ORIGINAL ARTICLE

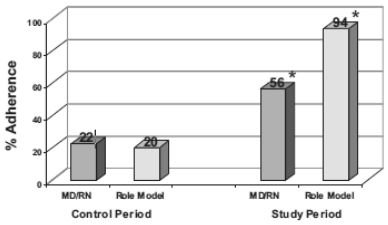
A Qualitative Exploration of Reasons for Poor Hand Hygiene Among Hospital Workers: Lack of Positive Role Models and of Convincing Evidence That Hand Hygiene Prevents Cross-Infection

- MDs
  - **Importance of hand hygiene for self-protection**
  - Lack of evidence for efficacy of hand hygiene in preventing cross infection
- RN/MDs
  - **Personal beliefs about efficacy of hand hygiene**
  - **Norms provided by senior hospital staff**
    - "If you arrive here and no one washes their hands…yes, I think you copy that behavior. You think that's what they do so that must be right"
- Medical Students
  - **Copy behaviors of their superiors – including noncompliance**

Erasmus *Infect Control Hosp Epidemiol* 2009; 30:415-419

Hand hygiene adherence is influenced by the behavior of role models

James Schneider, MD; David Moromisato, MD; Beth Zemetra, RN; Lisa Rizzi-Wagner, RN; Niurka Rivero, MD; Wilbert Mason, MD; Flerida Imperial-Perez, RN; Lawrence Ross, MD



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