The Evidence
Extracting-Summarizing-Embedding

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EXTRACTING

Levels of Evidence

PubMed Search

Implementation Model

Meta-Search Engines
TRIP
SUMSearch
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

<table>
<thead>
<tr>
<th>Study Info</th>
<th>Purpose</th>
<th>Sample</th>
<th>Intervention</th>
<th>Outcomes</th>
<th>Results</th>
<th>Feasibility/Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meade (2006)</td>
<td>1-2 hr rounds on pt satisfaction and safety</td>
<td>14 hospitals</td>
<td>1-2-hour rounds</td>
<td>Patient satisfaction ↓, Falls ↓, Call light use ↑, Pa/g415ent satisfaction</td>
<td>No details on rollout of intervention</td>
<td></td>
</tr>
<tr>
<td>Woodward</td>
<td>Decrease patient uncertainty regarding nurse availability, fall rates, satisfaction, call light use</td>
<td>Not specified</td>
<td>1-2 hour rounds</td>
<td>Charge Nurse completed rounds</td>
<td>4Ps Patient satisfaction, Falls, Charge nurse survey ↓, Falls ↓, Call light use ↑, Patient satisfaction</td>
<td></td>
</tr>
<tr>
<td>Gardner</td>
<td>Test model of practice that optimized the role of HA</td>
<td>Med-surg, Australia</td>
<td>123 pts (68 experimental ward/61 control)</td>
<td>Q1 hr rounds by HA</td>
<td>Standardized protocol</td>
<td>Pt satisfaction Practice environment Pt satisfaction (NS) Pt satisfaction survey developed</td>
</tr>
</tbody>
</table>

### Grade of Recommendation

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

### Stetler: Levels of Evidence

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

### American Association of Critical Care Nurses Evidence-Leveling System

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

### Evidence-Based Policies and Procedures

**Policy and Procedure Manual**

**References: Guidelines for Documenting**

**A. Research References:**

- Research references should be documented in the policy, procedure or document where the criteria takes place. Specific footnote information should be footnoted at the end of the document.

**Example:**


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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.

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


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

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

Leading Change

<table>
<thead>
<tr>
<th>Executive Leaders</th>
<th>Team Leaders</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Do I Make the World a Better Place?</td>
<td>How Do I Make the World a Better Place?</td>
<td>How Do I Make the World a Better Place?</td>
</tr>
<tr>
<td>How do I create an organization that is safe for patients and rewarding for staff?</td>
<td>How do I create a unit that is safe for patients and rewarding for staff?</td>
<td>How do I create a unit that is safe for patients and rewarding for staff?</td>
</tr>
<tr>
<td>How does this strategy fit our mission?</td>
<td>How do I touch their hearts?</td>
<td>Do I believe I can change the world, starting with my unit?</td>
</tr>
<tr>
<td>How do I make my unit safer for patients and a better place to work?</td>
<td>How do I make my unit safer for patients and a better place to work?</td>
<td>Can I help make my unit safer for patients and a better place to work?</td>
</tr>
</tbody>
</table>

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 is the evidence?
- Do I have executive and medical staff support?
- Are there tools to help me develop a plan?

- Why is this change important?
- How are patient outcomes likely to improve?
- How does my daily work need to change?

- What is our unit level report card?
- Is the unit a better place to work?
- Is teamwork better?
- Are patients safer?

 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?

- Do the Staff Know the plan and do they have the skills and commitment to implement?
- Have we tailored this to our environment?

- 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?

- Have I created a system for data collection, unit level reporting, and using data to improve?
- Is the work climate better?
- Are patients safer?

- What is our unit level report card?
- Is the unit a better place to work?
- Is teamwork better?
- Are patients safer?


What's In It For Me?

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

MMWR 2009; 58(23);641-645

The Law of the 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. Simplicity
- Principle 2. Unexpectedness
- Principle 3. Concreteness
- Principle 4. Credibility
- Principle 5. Emotions
- Principle 6. Stories

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
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

References

- Fanc E, et al. How to use an article about quality improvement. JAMA, 2010, 304(20), 2270
- Goeschel CA. Nursing leadership at the crossroads: Michigan minimizing catheter related blood stream infections. Nursing in Critical Care, 2011, 30(1), 35
- Helseth RA, Lorenc OL. The work of leadership. Harvard Business Review, 1997 (Jan-Feb), 124-134