Implementation Science and the Direct Care Nurse

Advocate Nursing Research Symposium
6th Annual Symposium
April 17, 2018

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• Identify implementation strategies that are commonly found in the practice setting
• Explain the nurse’s role in implementing change
• Apply evidence-based implementation strategies to a change that considers the type of change, the context for change and the stakeholders involved in the change
Before we begin ...

We first need to consider the change to be made before selecting implementing strategies:

• Is our change based on the best available evidence?
  – How do we know?

• How do we know if our evidence is good or bad?
Handy Vs Best Available

Handy
• Quickly accessible
• Local
• Google searches
• ‘Spoon fed’ evidence or ‘grab and go’
• Does not necessarily mean the evidence is bad

Best Available
• Active search of databases
• ‘Best’ requires an appraisal of the quality of evidence
• ‘Available’ implies that a search is thorough and considers all evidence

Judging the quality of evidence requires using an appraisal tool
Handy Evidence

• Wolters Kluwer’s Up To Date

• Elsevier’s Clinical Key

• Lippincott’s Nursing Center
Appraisal Tools

• CASP:
  – http://www.casp-uk.net/casp-tools-checklists

• AGREE II:
  – https://www.agreetrust.org/agree-ii/

• JBI:
Consider this...

• In 2001, a large multi-site study found that tight glycemic control (80-110mg/dL) reduced mortality in ICU patients (vs. conventional treatment of 180-200mg/dL)

• Total of 1548 patients enrolled

• Findings showed a reduction in:
  – Overall mortality by 34%
  – Bloodstream infections by 46%
  – Acute renal failure by 41%
  – Lowered mechanical ventilation and ICU days
Based on these findings

Do you think hospitals and organizations:

A. Accepted findings and made changes
B. Accepted findings but waited for more evidence
C. Rejected findings and did things how they were always done
D. Rejected findings but changed practice
Finally, our findings **do not support** the guidelines of organizations such as the American Diabetes Association, the American Association of Clinical Endocrinologists and other organizations, including the Surviving Sepsis Campaign, who recommend intensive insulin therapy for all critically ill patients.
Ramifications


Benefits and risks of tight glucose control in critically ill adults: a meta-analysis.
Wiener RS¹, Wiener DC, Larson RJ.

+ Author information

Erratum in
JAMA. 2009 Mar 4;301(9):936.

Abstract
CONTEXT: The American Diabetes Association and Surviving Sepsis Campaign recommend tight glucose control in critically ill patients based largely on 1 trial that shows decreased mortality in a surgical intensive care unit. Because similar studies report conflicting results and tight glucose control can cause dangerous hypoglycemia, the data underlying this recommendation should be critically evaluated.

[Image of a woman looking up with question marks in the background]
Evidence

1. The clinical practice guidelines were using evidence from 1 study although it was a multisite study (common)

2. Subsequent meta-analysis considered all studies on the topic and pooled the data to increase the strength of findings (2008: n=34 studies and 2009: n=26)
Ask the Questions…

Does evidence support the change (intervention)?

Where was the evidence found?

How do I, as the nurse using the evidence, know that it is high quality?

What appraisal tools were used?

What kind of evidence is it?
What if...
Synthesized Evidence for Rapid Use

Recommendations

Prior to isolation:
- Provide competency training for nurses that enhance their ability to identify patients’ psychological needs (Grade B)
- Provide information to patients on what they can expect and take note of patients’ preferences for diversion. (Grade B)
- Create a plan with patients for routine preservation that includes set times (where possible) for medication, patient assessment, ancillary services, and family time. (Grade B)

During isolation:
- Identify and acknowledge individual patient’s coping style by incorporating this into the care plan (Grade B)
- Consistent assignment of nurses is recommended to encourage sustained nurse-patient connections and knowledge of individual patient’s needs and preferences. (Grade B)
- Ensure nurses have sufficient time with patients and to adequately prepare for entrance into the isolation room. (Grade B)
- Rooms should have internet accessibility, windows to the outside with blinds and visible clocks, radios, and televisions. (Grade B)
- Consider social time between family, friends, significant others and the patient to be a priority. (Grade B)
- Prepare patient and family for discharge, ask what information the need, and clarify understanding. (Grade B)

Implications for practice

Since the previous version of this review, we found one new study for inclusion (Afshinmajd 2014), but the conclusions remain unchanged. This updated review did not find evidence to support bed rest or fluid supplementation for preventing headache following lumbar puncture (low to moderate quality evidence).

For people who receive a lumbar puncture

People who receive a lumbar puncture for diagnostic or therapeutic reasons should be allowed to move freely in accordance with their ability and medical recommendations. In addition, there are no clear benefits or adverse side effects associated with additional oral fluid supplementation (low quality evidence). People should be free to decide whether or not to increase fluid intake after lumbar puncture, unless medical reasons recommend one or the other.

For clinicians

Clinicians should not routinely recommend rest after lumbar puncture to prevent PDPH. The adoption of this practice against the evidence implies patient discomfort (for example among women who give birth via a Cesarean section), or even complications such as venous stasis in people with risk factors.

For policymakers

Due to its lack of benefits and its implications in hospital and health system costs, rest after lumbar puncture to prevent PDPH should not be routinely recommended as a
Next Steps

We have high quality evidence, now what?
Implementation Strategies

- No one strategy or grouping works for every...
  - Problem
  - Person/Group
  - Setting
  - Change

Hot off the press...

Question...

How do we retain the key points of our change across settings (locations, units, organizations) considering that resources, skill sets and cultures are varied, yet our outcomes should be the same?

How do we get there?
Implementing Change

Implementation strategies should be selected based on context analysis, stakeholder assessment and be based on the best available evidence.
Context

• Complicated concept that includes consideration for:
  – Culture
  – Processes currently embedded in practice
  – Location, layout
  – Setting
  – People
  – Communication
  – Etc.
A normal day...

Consider a normal day in your nursing practice

• You go into the break room to put away your personal items
• You go into the nursing station to gather data
• You conduct change of shift rounding
• You document in the electronic record
  – What artifacts of implementing change do you think you see?
### Patient Questionnaire

<table>
<thead>
<tr>
<th>Topic</th>
<th>NEVER</th>
<th>USUALLY</th>
<th>ALWAYS/YES</th>
<th>-definitely</th>
<th>YES/ HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Communication with Nurses</td>
<td>5%</td>
<td>18%</td>
<td>77%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Communication with Doctors</td>
<td>4%</td>
<td>16%</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness of Hospital Staff</td>
<td>10%</td>
<td>25%</td>
<td>65%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Pain Management</td>
<td>7%</td>
<td>23%</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication About Medicines</td>
<td>21%</td>
<td>18%</td>
<td>61%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanliness of Hospital Environment</td>
<td>9%</td>
<td>19%</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promptness of Hospital Environment</td>
<td>1%</td>
<td>30%</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provided complete Discharge Information</td>
<td>17%</td>
<td>19%</td>
<td>83%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Rating of Hospital</td>
<td>9%</td>
<td>23%</td>
<td>68%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommend the Hospital</td>
<td>5%</td>
<td>25%</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Preventing falls with injury

The problem with falls is a leading cause of death & injury.

- Approximately 11,000 fatal falls occur in the hospital annually with an average cost of $14,000 per fall with injury.

#### Annual costs avoided from falls reduction

200 bed hospital = $1 million
Stakeholders

• Those individuals who are involved in or are affected by the change
• Critical to understand stakeholder’s influence and support levels
• Best effect comes from knowing and engaging the stakeholders
  – Let’s look at some tools
### Stakeholder Influence & Support Grid
(with generic strategies for engagement)

<table>
<thead>
<tr>
<th>INFLUENCE</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Will positively affect dissemination and adoption</td>
<td></td>
</tr>
<tr>
<td>• Need a great deal of attention and information to maintain buy-in</td>
<td></td>
</tr>
<tr>
<td><strong>Strategies:</strong></td>
<td></td>
</tr>
<tr>
<td>• Collaborate</td>
<td></td>
</tr>
<tr>
<td>• Involve &amp;/or provide opportunities where they can be supportive</td>
<td></td>
</tr>
<tr>
<td>• Support and nurture</td>
<td></td>
</tr>
<tr>
<td>• Encourage feedback</td>
<td></td>
</tr>
<tr>
<td>• Prepare for change management</td>
<td></td>
</tr>
<tr>
<td>• Empower</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Can positively affect dissemination and adoption if given attention</td>
</tr>
<tr>
<td>• Need attention to maintain buy-in and prevent development of neutrality</td>
</tr>
<tr>
<td><strong>Strategies:</strong></td>
</tr>
<tr>
<td>• Collaborate</td>
</tr>
<tr>
<td>• Encourage feedback</td>
</tr>
<tr>
<td>• Empower with professional status</td>
</tr>
<tr>
<td>• Encourage participation</td>
</tr>
<tr>
<td>• Prepare for change management</td>
</tr>
<tr>
<td>• Involve at some level</td>
</tr>
</tbody>
</table>

High Support
High Influence

High Support
Low Influence
<table>
<thead>
<tr>
<th>Low Support</th>
<th>Low Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Influence</td>
<td>Low Influence</td>
</tr>
</tbody>
</table>

- Can negatively affect dissemination and adoption in a big way
- Need great amount of attention to obtain support &/or neutrality
- Work towards buy-in

**Strategies:**
- Consensus
- Build relationships
- Recognize needs
- Use external stakeholders & consultants
- Involve at some level
- Stress how BPG are developed
- Don’t provoke into action
- Monitor

- Least able to influence dissemination and adoption
- Could have negative impact on plans
- Some attention to obtain support &/or neutrality
- Work towards project buy-in

**Strategies:**
- Consensus
- Guild relationships
- Recognize needs
- Use external stakeholders and consultants
- Involve at some level
- Monitor
# Example of a Stakeholder Engagement Plan

<table>
<thead>
<tr>
<th>Stakeholder Name</th>
<th>Contact Person</th>
<th>Impact</th>
<th>Support</th>
<th>Influence</th>
<th>What is important to the stakeholder?</th>
<th>How could the stakeholder contribute to the project?</th>
<th>How could the stakeholder block the project?</th>
<th>Strategy for engaging the stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service line Directors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| XXXX (ED) | XXXX (MS) | XXXX (L&D) | XXXX (Crit Care) | XXXX (Surg Serv) | Low: While patient satisfaction is important to this group if stakeholders, the # of patients impacted is low. They want what is best for their patients but this is a relatively small group of patients) | Low | High: This group sets the standard for practice in their service lines | Patient Satisfaction and culturally competent care for all patients | Collaborate to develop a plan of action and what culturally competent care looks like in their departments based on the available evidence and local context | Since the impact for this group will be low, they potentially could block the project due to lack of interest or support. If they do not advocate for the education and policy change they will be less likely to encourage implementation and education of staff. They could potentially | Consensus
| Build relationships including relationship with trans community member |
| Acknowledge the needs of this group and plan accordingly |
| Use external stakeholders such as trans community member |
| Involve them in the planning |
Frequently Used Implementation Strategies

- Audit/Feedback
- Clinical Decision Support Systems (prompts, cues)
- Opinion leaders
- Posters (educational materials)
- Inservices (educational outreach)
- Prompts and Cues
- Nudges

We will look at each, the evidence and main points
Audit / Feedback

• Evidence Synthesis:
  – Audit and feedback generally leads to small but potentially important improvements in professional practice
  – Effectiveness of audit and feedback depends on baseline performance and how feedback is provided

Clinical Decision Support Systems (CDSS)

Evidence Synthesis:

• Despite the cumulative knowledge of CDSSs, it is still not possible to draw definite conclusions on their effectiveness, especially for patient outcomes, because of heterogeneity in systems, settings, and outcomes assessed.

  – Improvements in process of care such as chronic disease management processes
  – Improved test ordering
  – All agreed that this is an immature area requiring standardization of CDSS

https://www.biomedcentral.com/collections/CCDSS
Opinion Leaders

Evidence Synthesis:

• The concept of opinion leadership has a good theoretical basis and strong face validity. Some trials of recruiting opinion leaders to support the implementation of research findings have observed significant improvements in clinical care.

  – Less effective for large groups (national influence)
  – More effective for specialized areas (limited spheres of influence)
  – May change over time


Print Educational Materials

Evidence Synthesis:

• When used alone may have a beneficial effect on process outcomes but not on patient outcomes

• When used in conjunction with other methods, has a stronger impact

Inservices
(Educational Outreach)

Evidence Synthesis:

• EO’s alone or when combined with other interventions have effects that are relatively consistent and small, but potentially important.

• Their effects on other types of professional performance vary from small to modest improvements.

Prompts and Cues

Evidence Synthesis:

• Considered a behavioral change technique
• Borderline positive effects of technology-based strategies
• Need to understand which characteristics are effective in promoting change

Nudges

‘Behavioral Theory’ that suggests changes can occur through suggestions that we are unaware of, are low cost yet still offer choices

- Alka Seltzer plop, plop, fizz, fizz
- Food choice placement
- Amsterdam urinal flies

Holds promise for implementing change!
What do we know?

• Strong support that using more than one strategy improves implementation
• A minimum of 3 different strategies for better outcomes
Problem:
A TB syringe used instead of an insulin syringe causing a 10-fold overdose

Causes:
1. TB and insulin syringes both had orange caps
2. Both syringe types were stored alongside each other causing ‘cross-contamination’ of needles
Case

Stakeholders gathered to examine case and determine changes including several direct care nurses, inventory management, supervisor, charge nurse, quality nurse, pharmacist and CNO.

Note, the facility espoused a non-punitive environment and this nurse self-reported the error.

Priorities:

1. Order different syringes (orange = insulin, red = TB)
2. Store insulin syringes in a different location than TB syringes
Case

Implementation Strategies

1. Opinion Leaders
2. Posters (educational materials)
3. Inservices (educational outreach)
4. Prompts and Cues
5. Nudges
Role of the Direct Care Nurse

• If nurses are:
  – The last line of defense for patients/populations
  – Have the most contact with patients/populations
  – Have in-depth knowledge of patients/populations
  – Are gatekeepers of patient care
  – Coordinate patient care
  – Apply interventions that directly affect patient care outcomes

Then nurses are critical to any change affecting patient care!
Role of the Direct Care Nurse

• Key roles:
  – Understand changes occurring
  – Identify clinical problems and report
  – Question practice
  – Ask to see the evidence
  – Recognize implementation strategies
  – Engage in committees or councils that work on changes
  – Provide the nurse’s perspective
  – Guide others to adhere to changes

• Remember, YOU are the key stakeholder for any change involving patient care!
Thank you for listening!
“You must be the change you wish to see in the world.”