

SESSION 4:

PRE-PROCESSED/APPRaised INFORMATION

SYNTHESIZING THE EVIDENCE

TRANSLATING EBP RECOMMENDATIONS INTO
PRACTICE

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Pre-processed/Pre-appraised Information

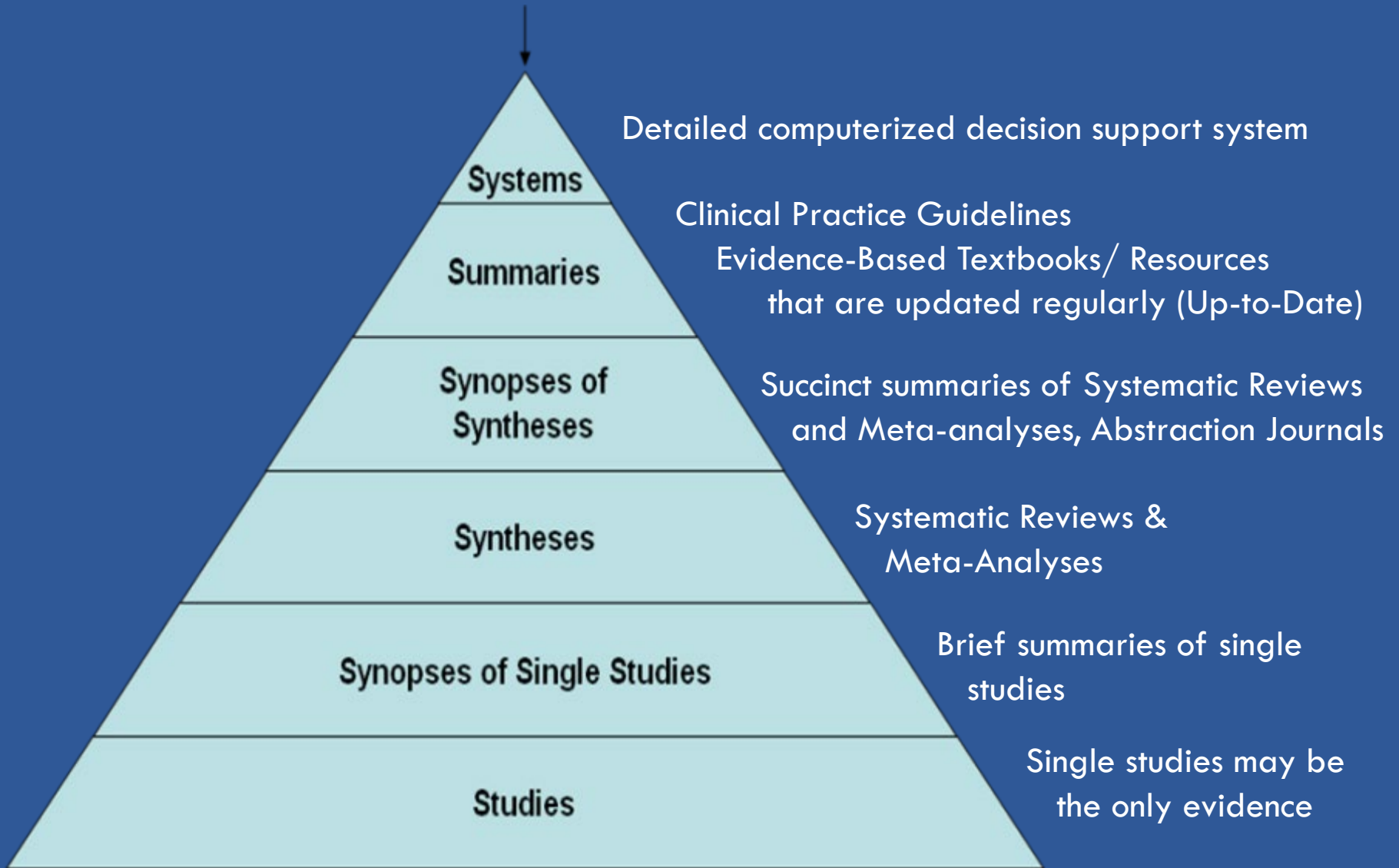
The Clinical Dilemma

- All health care providers face task of managing an overwhelming amount of information.
- There is rarely time during the day to sit down, let alone search for evidence relevant to our practice.
- How do we locate high-quality research evidence?
- What resources are most likely to lead us efficiently to high-quality research evidence?

Preprocessed/Preappraised Information

- Evidence that has been synthesized and sometimes summarized into key messages
- May also be pre-appraised or reviewed for methodological rigor.
 - What is the quality of the evidence?
 - What is the magnitude of effects?
 - How precise are estimates of effects?
 - Is there relevance to my clinical situation?
 - Is there evidence of side effects?
 - What are the costs?

Start Search Here



6S's of Preappraised Information (DiCenso et al., 2009)

Start search here

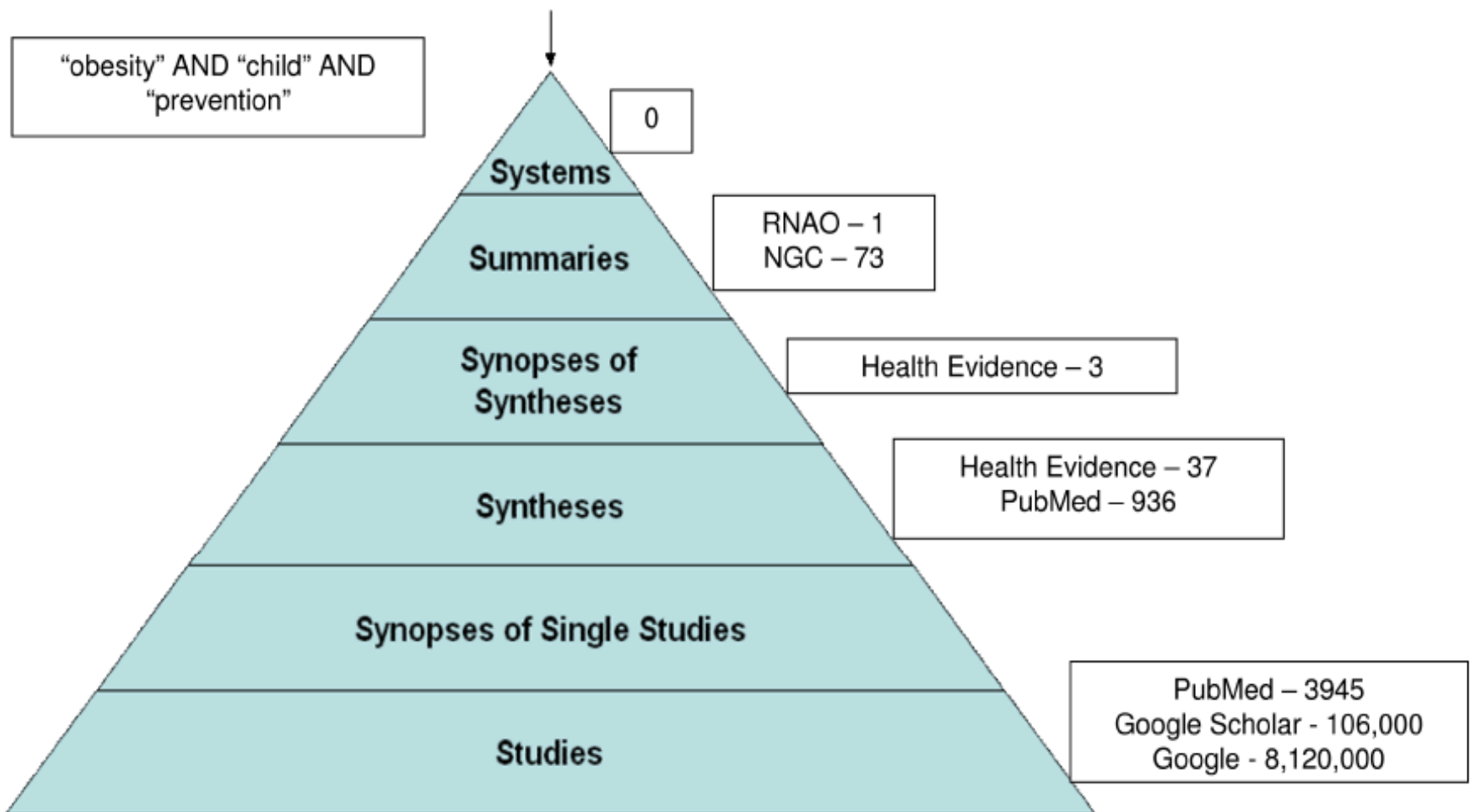


Figure 1 Search results mapped to 6S pyramid. Adapted from Accessing pre-appraised evidence: fine-tuning the 5S model into a 6S model, DiCenso, Bayley, & Haynes, 2009, 12, 99-101, 2010 with permission from BMJ Publishing Group Ltd.

Advantages of Decision Support Systems

- ❑ DSSs can enhance nursing practice in many ways.
 - ❑ Studies have found that they support novice nurses by recommending courses of action
 - ❑ and expert nurses by confirming the validity of their decisions.
 - ❑ By encouraging a user to think beyond her or his own experience and consider alternative options
 - ❑ DSSs can also increase productivity by accelerating the decision-making process.
 - ❑ And when used properly, these systems can virtually eliminate medication prescription and administration errors.

Disadvantage of Decision Support Systems

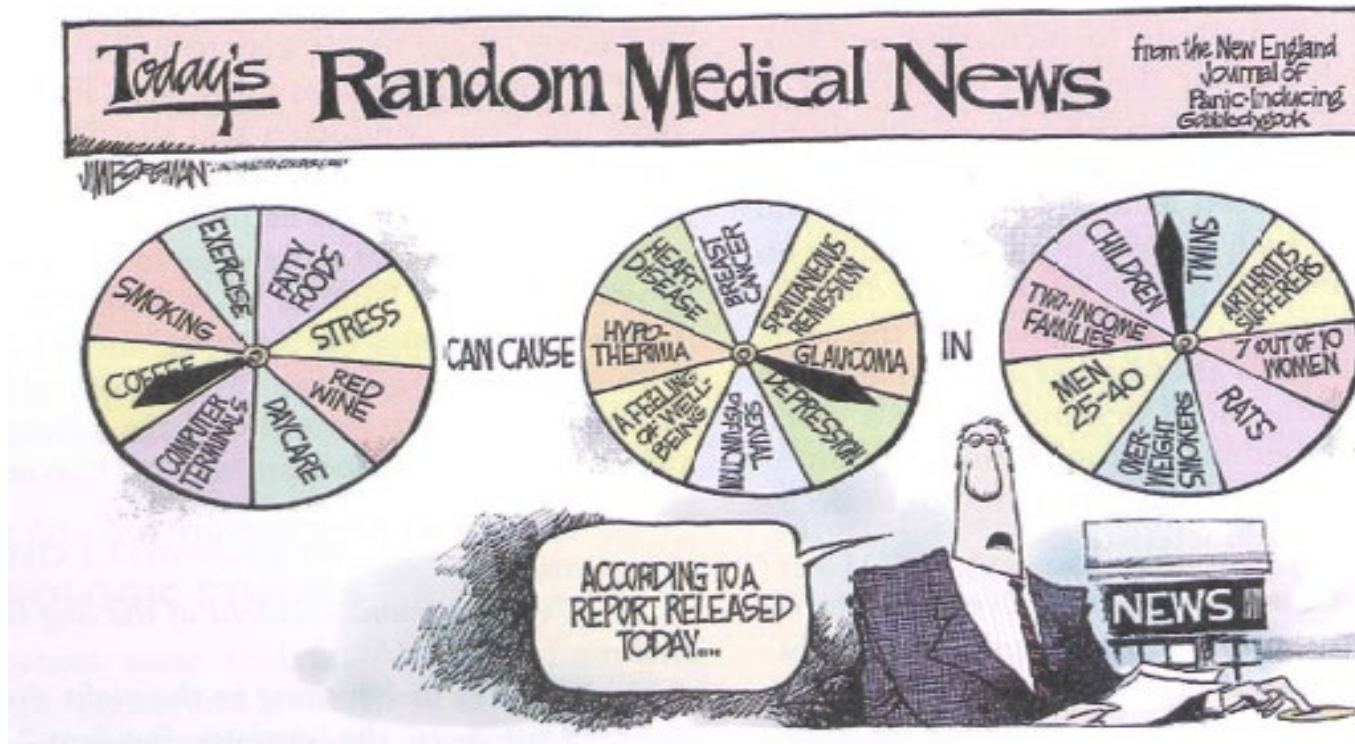
- Few CDSSs are currently available
- The user interface is not always “user-friendly”
- Designing and implementing such systems is challenging because of the computing infrastructure required, the need for patient data in a machine-processible form, and the changes to existing workflow that may result



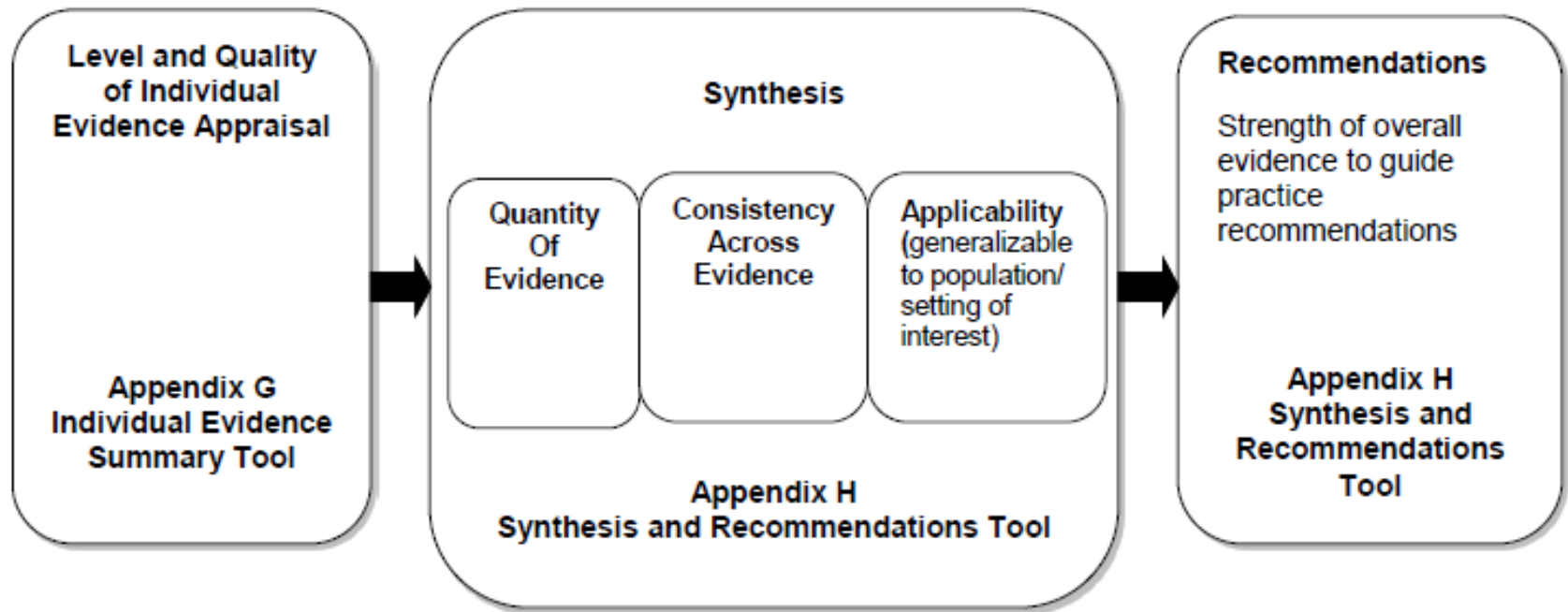
Synthesizing the Evidence

Making sense of all that is out there

- Tremendous growth of new knowledge



Appendix I: Synthesis of Evidence Guide



Appendix E: Research Appraisal Tool

Evidence Level and Quality: _____

Article Title:		Number:	
Author(s):		Publication Date:	
Journal:			
Setting:		Sample (Composition & size):	
Does this evidence address my EBP question?	<input type="checkbox"/> Yes	<input type="checkbox"/> No Do not proceed with appraisal of this evidence	
Level of Evidence (Study Design)			
A. Is this a report of a single research study? <i>If No, go to B.</i>		<input type="checkbox"/> Yes	<input type="checkbox"/> No
1. Was there manipulation of an independent variable?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Was there a control group?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Were study participants randomly assigned to the intervention and control groups?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes to all three, this is a Randomized Controlled Trial (RCT) or Experimental Study →		<input type="checkbox"/> LEVEL I	

Appendix E: Research Appraisal Tool

□ Example

Johns Hopkins Nursing Evidence-Based Practice Appendix E: Research Evidence Appraisal Tool

Evidence Level and Quality: _____

Article Title: A Comparison of the Haider Tube-Guard® Endotracheal Tube Holder Versus Adhesive Tape to Determine if This Novel Device Can Reduce Endotracheal Tube Movement and Prevent Unplanned Extubation.		Number: 1
Author(s): BUCKLEY JC, BROWN AP, SHIN JS, ROGERS KM, HOFTMAN NN.		Publication Date: 2016
Journal: Anesthesia and Analgesia		
Setting: OR/ post-anesthesia care unit	Sample (Composition & size): Patients undergoing general anesthesia; n=30	
Does this evidence address my EBP question?	X <input type="checkbox"/> Yes	<input type="checkbox"/> No Do not proceed with appraisal of this evidence

Appendix E: Research Appraisal Tool

□ Example

Level of Evidence (Study Design)			
A. Is this a report of a single research study? <i>If No, go to B.</i>		<input type="checkbox"/> Yes	<input type="checkbox"/> No
1. Was there manipulation of an independent variable?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Was there a control group?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Were study participants randomly assigned to the intervention and control groups?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes to all three, this is a Randomized Controlled Trial (RCT) or Experimental Study →	<input type="checkbox"/> LEVEL I		
If Yes to #1 and #2 and No to #3, OR Yes to #1 and No to #2 and #3, this is Quasi Experimental (some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, may have a control group) →	<input checked="" type="checkbox"/> LEVEL II		
If No to #1, #2, and #3, this is Non-Experimental (no manipulation of independent variable, can be descriptive, comparative, or correlational, often uses secondary data) or Qualitative (exploratory in nature such as interviews or focus groups, a starting point for studies for which little research currently exists, has small sample sizes, may use results to design empirical studies) →	<input type="checkbox"/> LEVEL III		

Appendix E: Research Appraisal Tool

□ Example

STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION:

The endotracheal tube withdrew a mean distance of 3.4 cm when secured with adhesive tape versus 0.3 cm when secured with the Haider Tube-Guard (P <0.001)

Ninety-seven percent of patients (29/30) experienced clinically significant endotracheal tube movement (>1 cm) when adhesive tape was used to secure the tube versus 3% (1/30) when the Haider Tube-Guard was used (P <0.001)

Thirty percent of patients (9/30) were potentially deemed a high extubation risk (endotracheal tube movement >4 cm) when the endotracheal tube was secured with tape versus 0% (0/30) when secured with the Haider Tube-Guard (P = 0.004).

Appendix E: Research Appraisal Tool

□ Example

Quality Appraisal of Research Studies			
• Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Was the purpose of the study clearly presented?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Was the literature review current (most sources within last 5 years or classic)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Was sample size sufficient based on study design and rationale?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• If there is a control group:			
○ Were the characteristics and/or demographics similar in both the control and intervention groups?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA
○ If multiple settings were used, were the settings similar?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA
○ Were all groups equally treated except for the intervention group(s)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA
• Are data collection methods described clearly?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Were the instruments reliable (Cronbach's α [alpha] \geq 0.70)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
• Was instrument validity discussed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
• If surveys/questionnaires were used, was the response rate \geq 25%?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA
• Were the results presented clearly?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• If tables were presented, was the narrative consistent with the table content?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
• Were study limitations identified and addressed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Were conclusions based on results?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Appendix E: Research Appraisal Tool

□ Example

QUALITY RATING BASED ON QUALITY APPRAISAL

- A High quality:** consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence
- B Good quality:** reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
- C Low quality or major flaws:** little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn

Appendix E: Research Appraisal Tool

□ Example

Johns Hopkins Nursing Evidence-Based Practice Appendix E: Research Evidence Appraisal Tool

Evidence Level and Quality: _____

Article Title: A Comparison of the Haider Tube-Guard® Endotracheal Tube Holder Versus Adhesive Tape to Determine if This Novel Device Can Reduce Endotracheal Tube Movement and Prevent Unplanned Extubation.		Number: 1
Author(s): BUCKLEY JC, BROWN AP, SHIN JS, ROGERS KM, HOFTMAN NN.		Publication Date: 2016
Journal: Anesthesia and Analgesia		
Setting: OR/ post-anesthesia care unit	Sample (Composition & size): Patients undergoing general anesthesia; n=30	
Does this evidence address my EBP question?	X <input type="checkbox"/> Yes	<input type="checkbox"/> No Do not proceed with appraisal of this evidence

Appendix F: Non- Research Appraisal Tool

Evidence Level & Quality: _____

Article Title:		Number:	
Author(s):		Publication Date:	
Journal:			
Does this evidence address the EBP question?	<input type="checkbox"/> Yes	<input type="checkbox"/> No Do not proceed with appraisal of this evidence	
<input type="checkbox"/> Clinical Practice Guidelines: Systematically developed recommendations from nationally recognized experts based on research evidence or expert consensus panel. LEVEL IV			
<input type="checkbox"/> Consensus or Position Statement: Systematically developed recommendations based on research and nationally recognized expert opinion that guides members of a professional organization in decision-making for an issue of concern. LEVEL IV			
• Are the types of evidence included identified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Were appropriate stakeholders involved in the development of recommendations?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Are reasons for which recommendations apply and do not apply clearly stated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Appendix G: Individual Evidence

Summary Tool **EXAMPLE**

Article #	Author & Date	Evidence Type	Sample, Sample Size, & Setting	Study Findings That Help Answer The EBP Question	Limitations	Evidence Level & Quality
1.	Janssen et al., 2007	Prospective Population-based Cohort Study	N= 1,060 low-risk status pregnant women; British Columbia Hospitals	Adjusted odds ratios showed a reduced rate of cesarean sections (OR 0.58, 95% CI 0.39-0.86) and episiotomies (OR 0.62, 95% CI 0.42-0.93) in midwife-attended births	****	3, Good quality
2.	Browne et al., 2010	Retrospective Cohort Analysis	N=2819, Community Hospital, Nulliparous Vaginal Births	Odds ratio 2.94, more likely to have episiotomy with OBGYN compared to Certified Mid-Wife (95% CI, 2.01-4.29)	*****	3, Good quality
3.	Mclachalan et al., 2012	Prospective Randomized Controlled Trial	N=2314, low risk pregnant women in Tertiary care women's hospital in Melbourne Australia	Women allocated to caseload midwifery were less likely to have cesarean section (19.4%) vs women who received standard care (24.9%)	***	1, Good quality
4.	Prelec A. et al., 2014	Prospective Observational Case-Study	N=497 low-risk laboring women; 154 attended a midwife-led unit and 343 in an obstetric unit.	Women in the midwife led unit had statistically significant less caesarean sections ($p < 0.001$) and lower rates of episiotomy ($p < 0.001$).	*****	2, Good quality
5.	Sutcliffe et al., 2012	Systematic Review of Reviews	N=21,105 low risk laboring women in the U.S. and U.K.	Women receiving care from midwives had a statistically-significantly lower rate of episiotomies, but no significant difference in rate of cesarean sections, than women receiving care from OBGYNs.	****	2, Good quality
6.	Sandall J. et al., 2016	Systematic Review of 15 RCTs	N = 17,674 pregnant women at low risk of complications as well as women at increased risk, but not currently experiencing problems Settings: Australia, Canada	Women using midwife-led continuity models of care were less likely to have episiotomies (average RR 0.84, 95% CI 0.77-0.92). There was no statistically significant difference in the number of caesarean births (average RR 0.92, 95% CI 0.84-1.00)	**	1, High Quality * = limitations identified

Appendix H: Synthesis & Recommendation Tool

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
Level I · Experimental study · Randomized Controlled Trial (RCT) · Systematic review of RCTs with or without meta-analysis			
Level II · Quasi-experimental studies · Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis			
Level III · Non-experimental study · Systematic review of a combination of RCTs, quasi-experimental, and non-experimental studies, or non-experimental studies only, with or without meta-analysis · Qualitative study or systematic review of qualitative studies with or without meta-synthesis			
Level IV · Opinion of respected authorities and/or reports of nationally recognized expert committees/consensus panels based on scientific evidence			
Level V · Evidence obtained from literature reviews, quality improvement, program evaluation, financial evaluation, or case reports · Opinion of nationally recognized expert(s) based on experiential evidence			

Appendix H: Synthesis & Recommendation Tool **EXAMPLE**

Level Type	Total Number of Sources/Level	Overall quality rating	Synthesis of Findings
Level 1	1	B	Symptom triggered lorazepam management of uncomplicated AWS resulted in significantly lower duration of treatment and significantly lower total medication dosage administered compared to fixed tapering dose management.
Level 2	1	B	STT group had a significant decrease in mean ICU length of stay and in total benzodiazepine use
Level 3	2	B	STT vs. FSD for AWS resulted in decreased time of treatment, decreased dosing of BNZD, and decreased severity of alcohol withdrawal symptoms
Level 4	0	N/A	N/A
Level 5	1	B	Compared to FSD, STT group had shorter duration of treatment, less BNZD administration and no difference in LOS.

Practice recommendation:

- “The following practice recommendation is based on the evaluation of X sources of evidence; X of which were level I, II, III, IV, and V, respectively.”

- “The quality across these studies were _____; and we used that to weight our conclusions”
 - ▣ Strongly support the intervention
 - ▣ Support the intervention with some reservation
 - ▣ There is insufficient evidence to support the intervention
 - ▣ Do not support the intervention

A horizontal bar at the top of the slide, divided into a red section on the left and a blue section on the right. The text is white and positioned on the blue section.

Translating EBP Recommendations into Practice

JHN EBP: Practice Questions, Evidence, and Translation (PET)



Translating evidence into practice

- **Step 11**: Determine appropriateness and feasibility of translating recommendations into the specific practice setting.
- **Step 12**: Create action plan.
- **Step 13**: Implement change.
- **Step 14**: Evaluate outcomes.
- **Step 15**: Report results of preliminary evaluation to decision makers.
- **Step 16**: Secure support from decision makers to implement recommended change internally.
- **Step 17**: Identify next steps.
- **Step 18**: Communicate findings.

Creating a culture to implement EBP: What Works (Adapted from B. Melnyk)

*The only person that likes a change is
a baby with a wet diaper!*



Creating a culture to implement EBP:

What Works (Adapted from B. Melnyk)

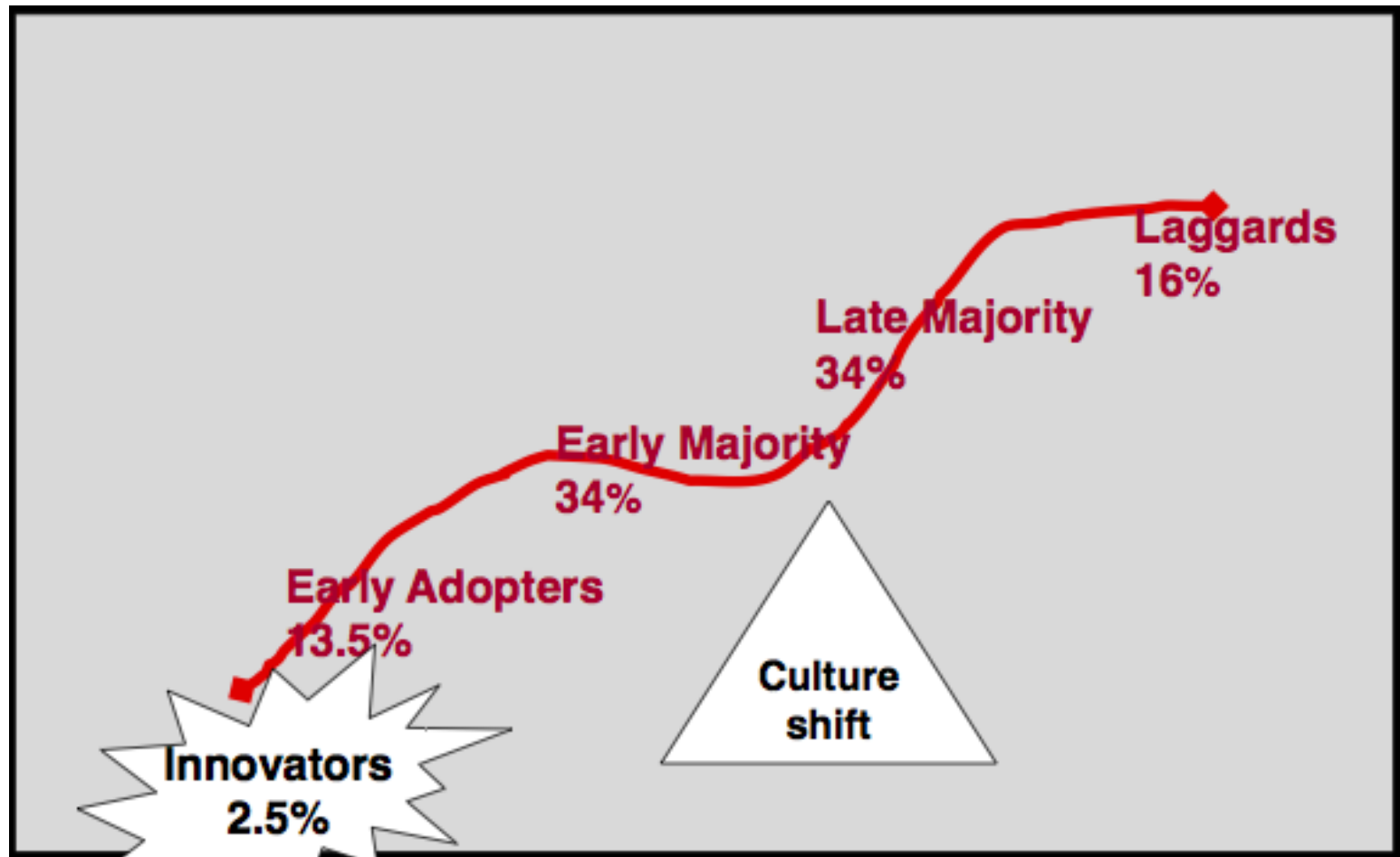
- Critical Components of EBP Culture:
 - A philosophy, mission and commitment to EBP: there must be organizational commitment to advance EBP as evidenced by tactics such as orientations that include EBP and clinical ladders that incorporate EBP competencies
 - A Spirit of Inquiry: all health professionals are encouraged to question their current practices
 - A Cadre of EBP Mentors: who have in depth knowledge and skills in EBP, mentoring others, and overcoming barriers to individual and organizational change

Creating a culture to implement EBP:

What Works (Adapted from B. Melnyk)

- Critical Components of EBP Culture (continued):
 - Administrative Role Modeling and Support: leaders who value and model EBP as well as provide the needed resources to sustain it
 - Infrastructure: tools and resources that enhance EBP across the organization, such as computers for searching and up to date data bases
 - Recognition: individuals and units are rewarded regularly for EBP

Diffusion of Innovations (Adapted from B. Melnyk)



A key ingredient for success is persistence, there will be many “character building” experiences along the way...

