VUMC Office
of Advanced Practice

&

Nursing Research Office

Presents

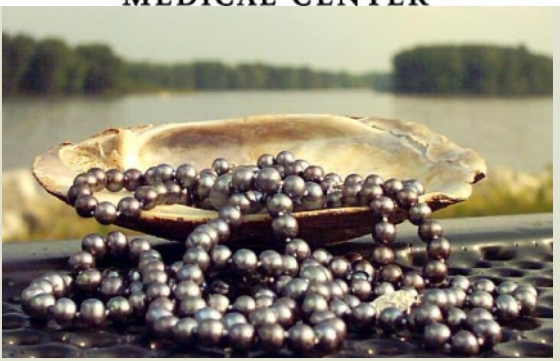
Research

&

Evidence-Based Practice Pearls

VANDERBILT UNIVERSITY

MEDICAL CENTER



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ELIZABETH.B.CARD@VANDERBILT.EDU

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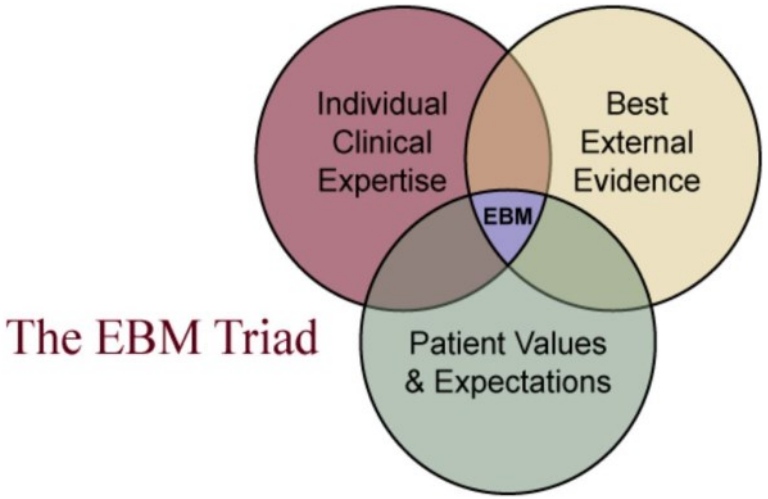
Dedication

To the future nurse researchers
at VUMC

Is it Research, EBP or QI?

Research	Evidence Based Practice	Quality Improvement
Generates new knowledge	Uses BEST AVAILABLE clinical evidence (from research, clinical expert opinion, etc.) to guide practice and make patient care decisions based on patient preference and individual clinicians expertise	Monitoring and evaluating quality & appropriateness of current care based on EBP and research completed methodically focusing on systems at a specific location
Provides general foundation for EBP and QI	Provides ability to continually improve pt care	Provides site-specific ability to best instill and continually evaluate these research based EBP practices
STARTS with a burning clinical question leading to rigorous literature search, critical appraisal and synthesizing findings to identify knowledge GAPS, through using measurable variables (VAS, blood pressure readings, etc.) to describe, explain, predict, and/or control the phenomena OR to develop meaning, discovery or understanding of a phenomena	STARTS with a burning clinical question leading to rigorous literature search, critical appraisal and synthesizing findings to identify best available evidence, evaluates if evidence warrants a practice change AND evaluates if change made if resulting product was what was expected AND if change can be sustained	STARTS with systematic method for improving outcomes and/or processes based upon continuous quality improvement & management focusing on site specific systems-NOT intended for generalizable knowledge or production of best evidence



The EBM Triad

Construction of an answerable clinical question through use of the PICOT model

(PICOT question organizes and guides your sarch of the literature and subsiquent research study if applicable)

pneumonic	element		example
P	Patient, population or problem	How would I describe a group of patients similar to mine?	Pediatric patients immediately post-tonsillectomy
I	Intervention, prognosis factor or exposure	What main intervention, prognosis factor or exposure am I thinking about?	Parents present for emergence from anesthesia
C	Comparison to intervention (if appropriate)	What is the gold standard/main alternative to compare with the intervention?	without parents present
O	Outcome you would like to measure or achieve	What can I hope to measure, accomplish, improve or affect?	Anxiety
T	Type of study you want to find in the literature	What would be the best study design for you to locate? Randomized controlled, case study, cohort study?	RCT
T	Time duration	30 days, 6 months, 12 months from intervention until outcome is measured	NA

PICOT example question should read:

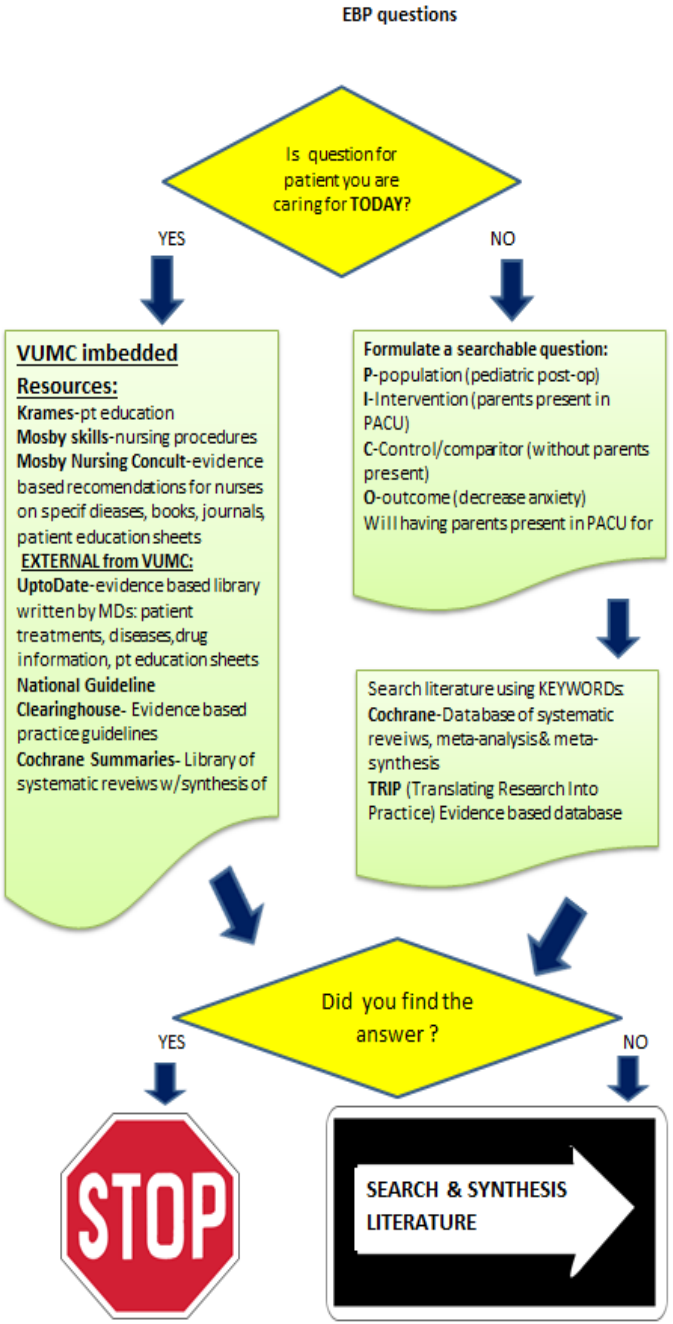
Will pediatric post-tonsillectomy patients emergence from anesthesia with less anxiety when parents are present?

In this example we would search for the highest level of evidence available and would anticipate that randomized controlled trails have been published.

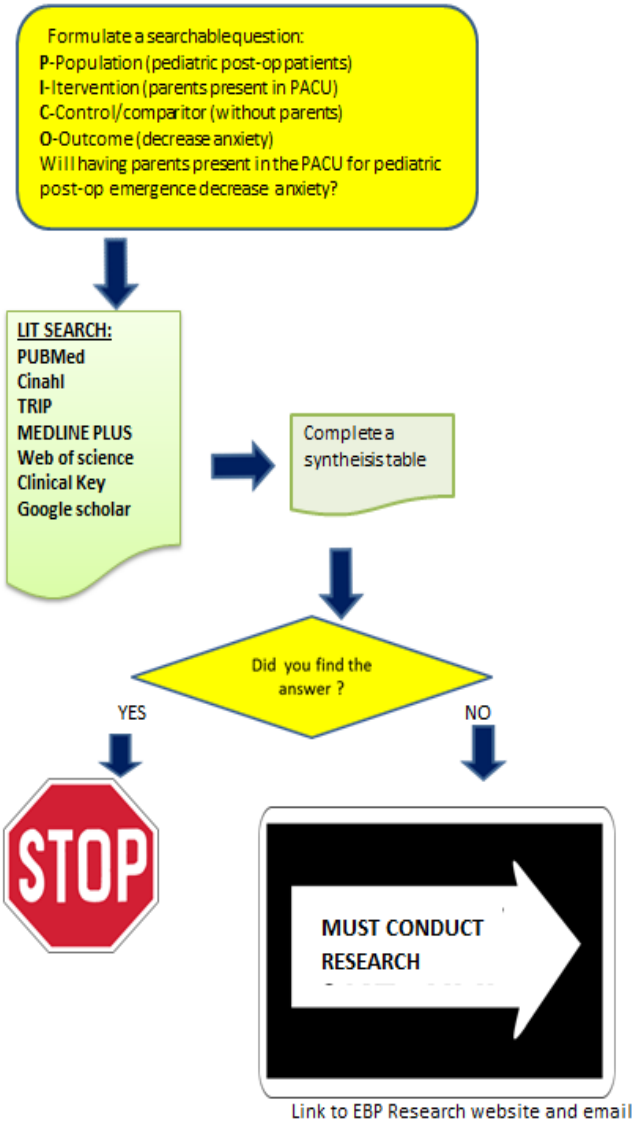
For more information, go to: http://healthlinks.washington.edu/ebp/pico.html

Also visit the Vanderbilt Nursing Research website at: Vanderbiltnursingebp.com

Elizabeth Card, 2015



EBP questions



PICO QUESTION

Patient, Population or Problem

What are the characteristics of the patient or population?

What is the condition or disease you are interested in?

Intervention or exposure

What do you want to do with this patient (e.g. treat, diagnose, observe)?

Comparison

What is the alternative to the intervention (e.g. placebo, different drug, surgery)?

Outcome

What are the relevant outcomes (e.g. morbidity, death, complications)?

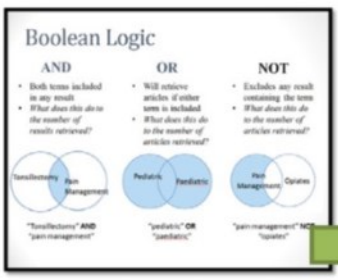
PICO QUESTION: In adolescent drug users does the use of marijuana and alcohol lead to schizophrenia?

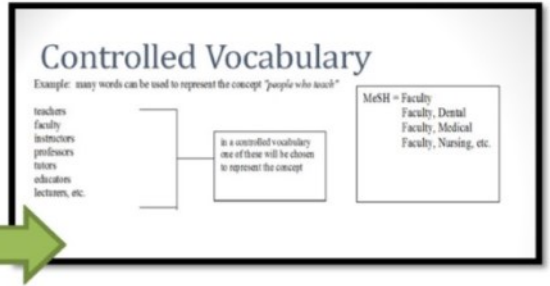
"OR" groupings contain terms for the same idea/ concept and are usually put in parenthesis
(term OR term OR term)
where all terms are difference ways of representing the same concept
(marijuana OR cannabis OR "cannabis indica" OR "cannabis sativa" OR "marijuana abuse" OR weed)

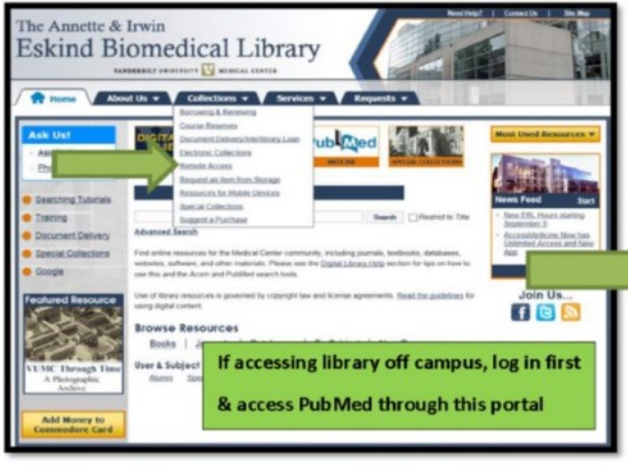
"NOT" excludes any results containing the term
Records containing both will not be retrieved-I suggest judicious use of "not".

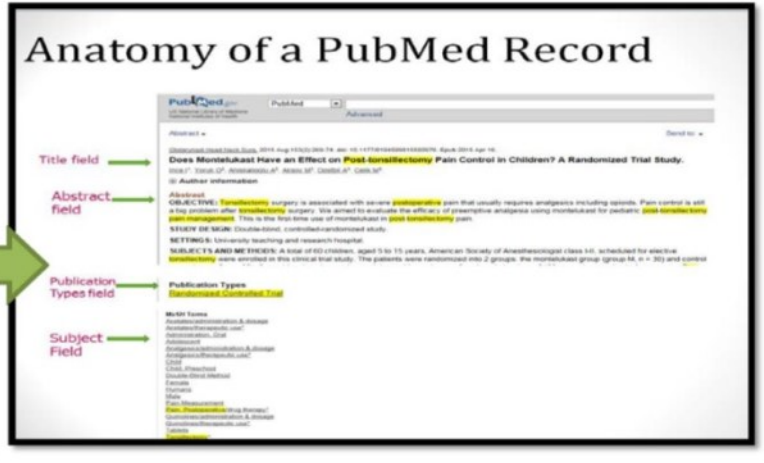
"AND" results in BOTH terms included in any results.
"AND" groupings contain terms for different ideas/concepts and can combine OR groupings
Term AND (Term OR Term) where each represents a different concept
Schizophrenia AND (marijuana OR cannabis)

Example PICOT: **In post-op pediatric tonsilectomy patients does having parents present in the PACU decrease anxiety?**



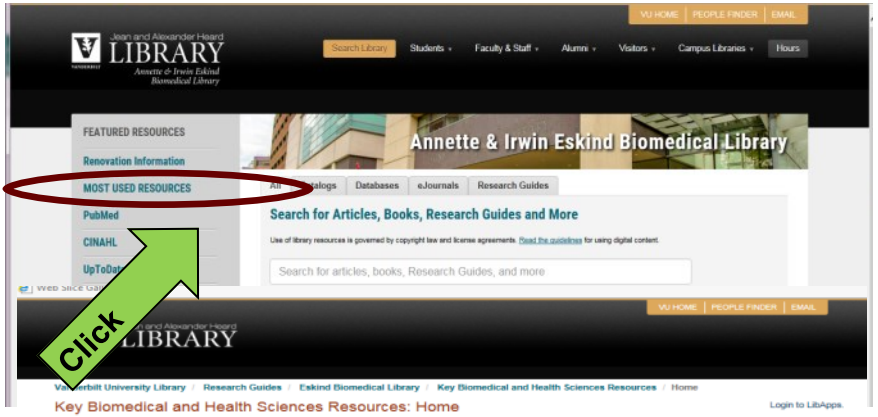


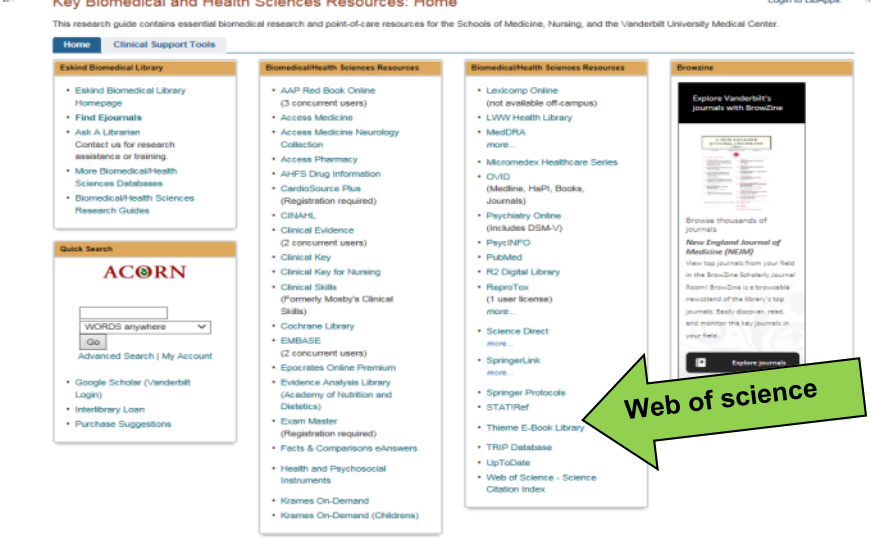


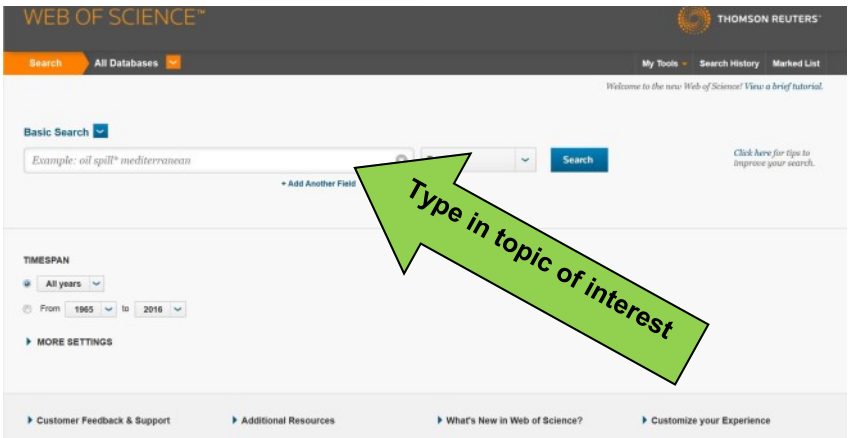


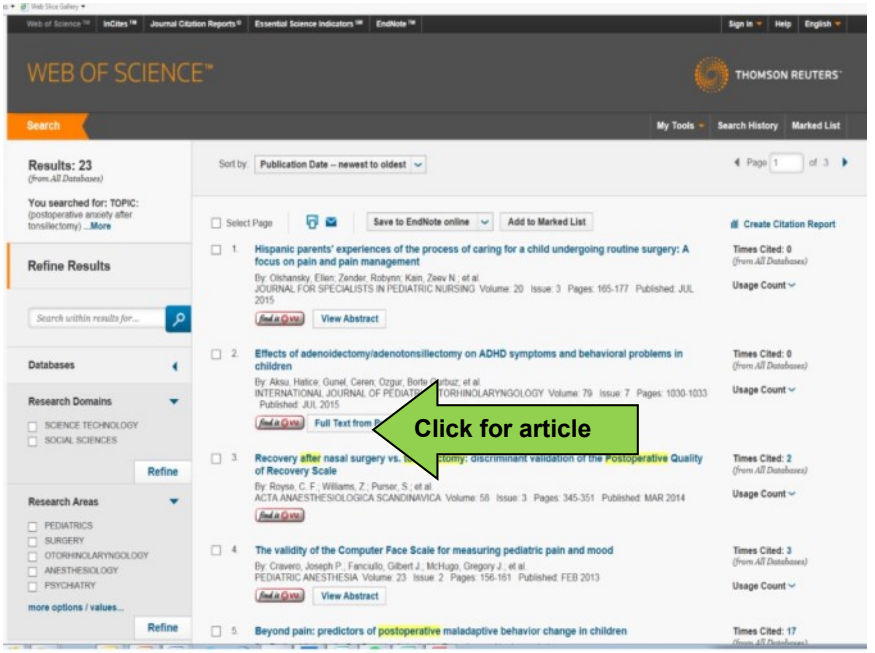
Adapted from Marcia Epelbaum, M.A. presentation for VUMC Nursing Research & EBP presentation, 2015

Additional Resources for Finding Evidence









Web of Science™ All Databases Help

Basic Search

Search for records from our product indexes. All successful searches are added to the Search History table. Remember to follow all applicable search rules when creating your search queries.

You can select up to three fields on the Search page as your default search fields. You can enter up to 6,000 terms in a search query.

Adding a new field also sets the second field to the AND operator. You can change the AND operator to OR or NOT.

Please note that your settings are applied to all product databases in your subscription package.

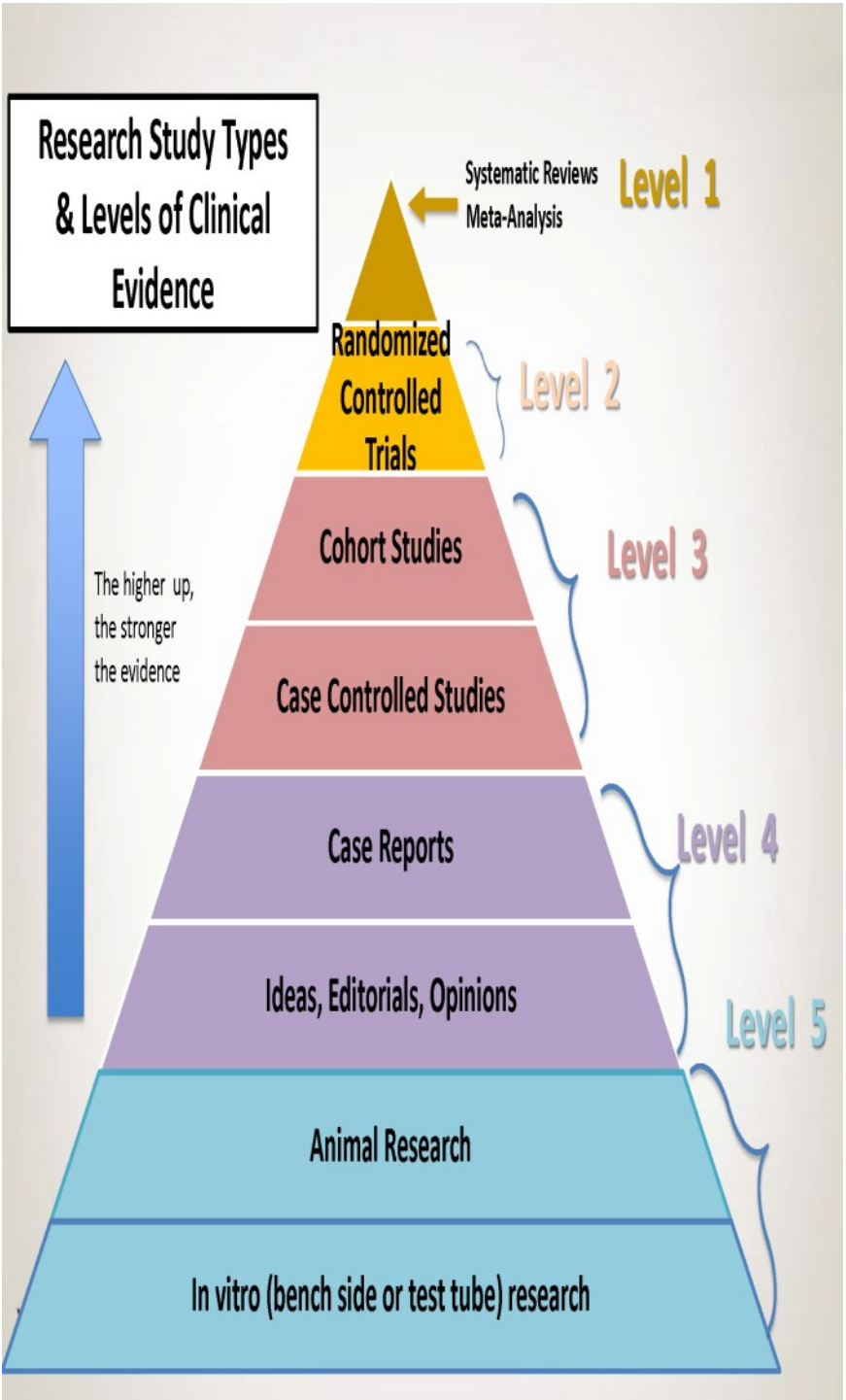
Note: Administrators may set to display one to three search fields as the default search fields for their entire institution.

Default Number of Search Fields to Display

This feature allows you to select the number of search fields to display when you begin a new search. You can always add more fields to your search or you can remove search fields from the Search page.

You can select:

- One field to search. The default field is always Topic. You can always select a different field to search.
- Three fields to search. The default fields are always Topic, Author, and Publication Name. You can always select different fields to search.
- Add Another Field. The default field is always Topic. You can always select a different field to search.



Understanding the Evidence Pyramid

This is an evidence pyramid; nurses are one of the consumers and contributors to this evidence! The evidence/understanding of a phenomena begins at the bottom with in vitro/animal research, and understanding gleaned from this forms the basis of the next level, each building upon the previous level knowledge. The highest level of evidence is at the top, lowest at the bottom. However, depending on where we are in researching and understanding a phenomena or the phenomena itself, not all levels of research may be present. (You can not randomize everything. For example: Violence in the workplace will not have Randomized Controlled Trials-RCT)

An example of this scientific process:

LEVEL 5: Years ago, PUD and bleeding ulcers were thought to all arise from changes in gastric pH, stress, etc. However, there was a Vanderbilt University Medical Center physician, Dr. Martin Blaser, who questioned this. He spent several days a week in his lab (bench side) working with mice, cell cultures, and biopsies looking for a different cause for PUD. Eventually, he discovered there was a previously undetected organism in the guts of his mice with PUD. He isolated Helicobacter pylori (H. pylori) This formed the bottom of the pyramid, **IN VITRO RESEARCH**

LEVEL4: From that discovery Dr. Blaser went on to test a few of his patients with terrible PUD **(CASE REPORTS),** and a large number of them harbored this organism.

LEVEL 3: He tested more PUD patients against his healthy normal patients -or those without PUD **(CASE CONTROLLED STUDIES)** and then followed these patients over time **(COHORT STUDIES)**

LEVEL 2: Then, he treated groups of patients with different medical regimens to discover the most effective treatment **(RANDOMIZED CONTROLLED TRAILS-RCT)**

LEVEL 1: There should be enough completed RCTs in this area of study for someone to have published a **Systematic Reviews** (a synthesis of RCT findings) or a **META-ANALYSIS** (when you re-analyze the findings of many RCT together in a single analysis) and/or creation of evidence based treatment guidelines (golden egg!)

Evidence Appraisal Tool: Keep close by as you read and rate the level and quality of the article, published in Dearholt & Dang (2012) "Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines (2nd ed)

JHNEBP Evidence Rating Scales

Strength of the Evidence

Level I	Experimental study/randomized controlled trial (RCT) or meta analysis of RCT
Level II	Quasi-experimental study
Level III	Non-experimental study, qualitative study, or meta-synthesis.
Level IV	Opinion of nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines)
Level V	Opinion of individual expert based on non-research evidence. (Includes case studies; literature review; organizational experience e.g., quality improvement and financial data; clinical expertise, or personal experience)

Quality of the Evidence

A	High	Research	consistent results with sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence.
		Summative reviews	well-defined, reproducible search strategies; consistent results with sufficient numbers of well defined studies; criteria-based evaluation of overall scientific strength and quality of included studies; definitive conclusions.
		Organizational	well-defined methods using a rigorous approach; consistent results with sufficient sample size; use of reliable **and** valid measures
		Expert Opinion	expertise is clearly evident
B	Good	Research	reasonably consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
		Summative reviews	reasonably thorough and appropriate search; reasonably consistent results with sufficient numbers of well defined studies, evaluation of strengths and limitations of included studies, fairly definitive conclusions.
		Organizational	Well-defined methods; reasonably consistent results with sufficient numbers; use of **reliable and valid** measures; reasonably consistent recommendations
		Expert Opinion	expertise appears to be credible
C	Low quality or major flaws	Research	little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn
		Summative reviews	undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results; conclusions cannot be drawn
		Organizational	Undefined, **or** poorly defined methods; insufficient sample size; inconsistent results; undefined, poorly defined or measures that lack adequate reliability or validity
		Expert Opinion	expertise is not discernable or is dubious

**A study rated an A would be of high quality, whereas, a study rated a C would have major flaws that raise serious questions about the believability of the findings and should be automatically eliminated from consideration.*

Newhouse R, Dearholt S, Poe S, Pugh LC, White K. The Johns Hopkins Nursing Evidence-based Practice Rating Scale. 2005. Baltimore, MD, The Johns Hopkins Hospital, Johns Hopkins University School of Nursing.

Below and over the next 3 pages is the JHU Nursing EBP appraisal tool for research articles originally published in Dearholt & Dang (2012) "Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines (2nd ed)

Johns Hopkins Nursing Evidence-Based Practice
Appendix E: Research Evidence 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?	☐Yes	☐No Do not proceed with appraisal of this evidence	

Level of Evidence (Study Design)

A. Is this a report of a single research study? ***If No, go to B.***		☐Yes	☐No
1. Was there an intervention?		☐Yes	☐No
2. Was there a control group?		☐Yes	☐No
3. Were study participants randomly assigned to the intervention and control groups?		☐Yes	☐No
If Yes to all three, this is a Randomized Controlled Trial (RCT) or Experimental Study →	☐ 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) →	☐ LEVEL II		
If Yes to #1 only, OR 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) →	☐ LEVEL III		
NEXT, COMPLETE THE BOTTOM SECTION ON THE FOLLOWING PAGE, "STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION"			

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

B. Is this a summary of multiple research studies? ***If No, go to Non-Research Evidence Appraisal Form.***		☐Yes	☐No
1. Does it employ a comprehensive search strategy and rigorous appraisal method (**Systematic Review)?** ***If No, use Non-Research Evidence Appraisal Tool; if Yes:***		☐Yes	☐No
a. Does it combine and analyze results from the studies to generate a new statistic (effect size)? (**Systematic review with meta-analysis**)		☐Yes	☐No
b. Does it analyze and synthesize concepts from qualitative studies? (**Systematic review with meta-synthesis**)		☐Yes	☐No
If Yes to either a or b, go to #2B below.			
2. For Systematic Reviews and Systematic Reviews with meta-analysis or meta-synthesis:			
a. Are all studies included RCTs? →	☐ LEVEL I		
b. Are the studies a combination of RCTs and quasi-experimental or quasi-experimental only? →	☐ LEVEL II		
c. Are the studies a combination of RCTs, quasi-experimental and non-experimental or non-experimental only? →	☐ LEVEL III		
d. Are any or all of the included studies qualitative? →	☐ LEVEL III		
COMPLETE THE NEXT SECTION, "STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION"			

STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION:

NOW COMPLETE THE FOLLOWING PAGE, "QUALITY APPRAISAL OF RESEARCH STUDIES", AND ASSIGN A QUALITY SCORE TO YOUR ARTICLE

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

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?	☐Yes	☐No	
• Was the purpose of the study clearly presented?	☐Yes	☐No	
• Was the literature review current (most sources within last 5 years or classic)?	☐Yes	☐No	
• Was sample size sufficient based on study design and rationale?	☐Yes	☐No	
• If there is a control group:			
○ Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☐NA
○ If multiple settings were used, were the settings similar?	☐Yes	☐No	☐NA
○ Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☐NA
• Are data collection methods described clearly?	☐Yes	☐No	
• Were the instruments reliable (Cronbach's α [alpha] ≥ 0.70)?	☐Yes	☐No	☐NA
• Was instrument validity discussed?	☐Yes	☐No	☐NA
• If surveys/questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☐NA
• Were the results presented clearly?	☐Yes	☐No	
• If tables were presented, was the narrative consistent with the table content?	☐Yes	☐No	☐NA
• Were study limitations identified and addressed?	☐Yes	☐No	
• Were conclusions based on results?	☐Yes	☐No	

Quality Appraisal of Systematic Review with or without Meta-Analysis or Meta-Synthesis		
• Was the purpose of the systematic review clearly stated?	☐Yes	☐No
• Were reports comprehensive, with reproducible search strategy?	☐Yes	☐No
○ Key search terms stated	☐Yes	☐No
○ Multiple databases searched and identified	☐Yes	☐No
○ Inclusion and exclusion criteria stated	☐Yes	☐No
• Was there a flow diagram showing the number of studies eliminated at each level of review?	☐Yes	☐No
• Were details of included studies presented (design, sample, methods, results, outcomes, strengths and limitations)?	☐Yes	☐No
• Were methods for appraising the strength of evidence (level and quality) described?	☐Yes	☐No
• Were conclusions based on results?	☐Yes	☐No
○ Results were interpreted	☐Yes	☐No
○ Conclusions flowed logically from the interpretation and systematic review question	☐Yes	☐No
• Did the systematic review include both a section addressing limitations and how they were addressed?	☐Yes	☐No

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

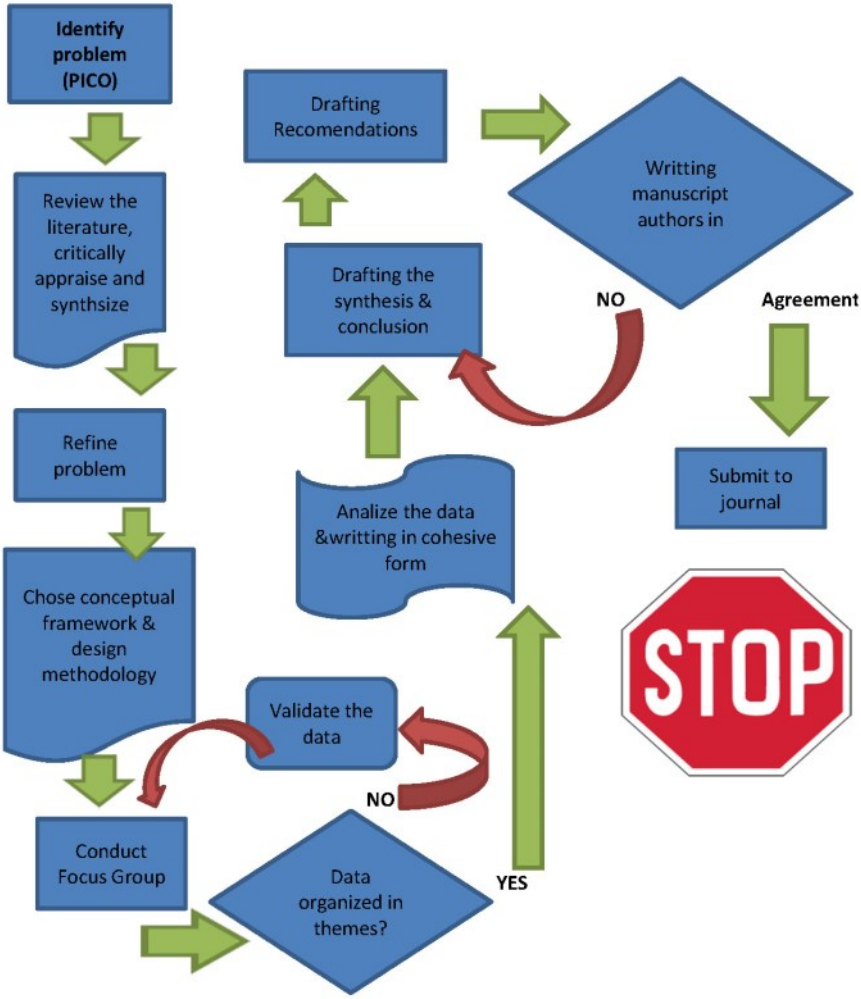
Synthesis Table for 3 Articles with Conclusions

Synthesis Table

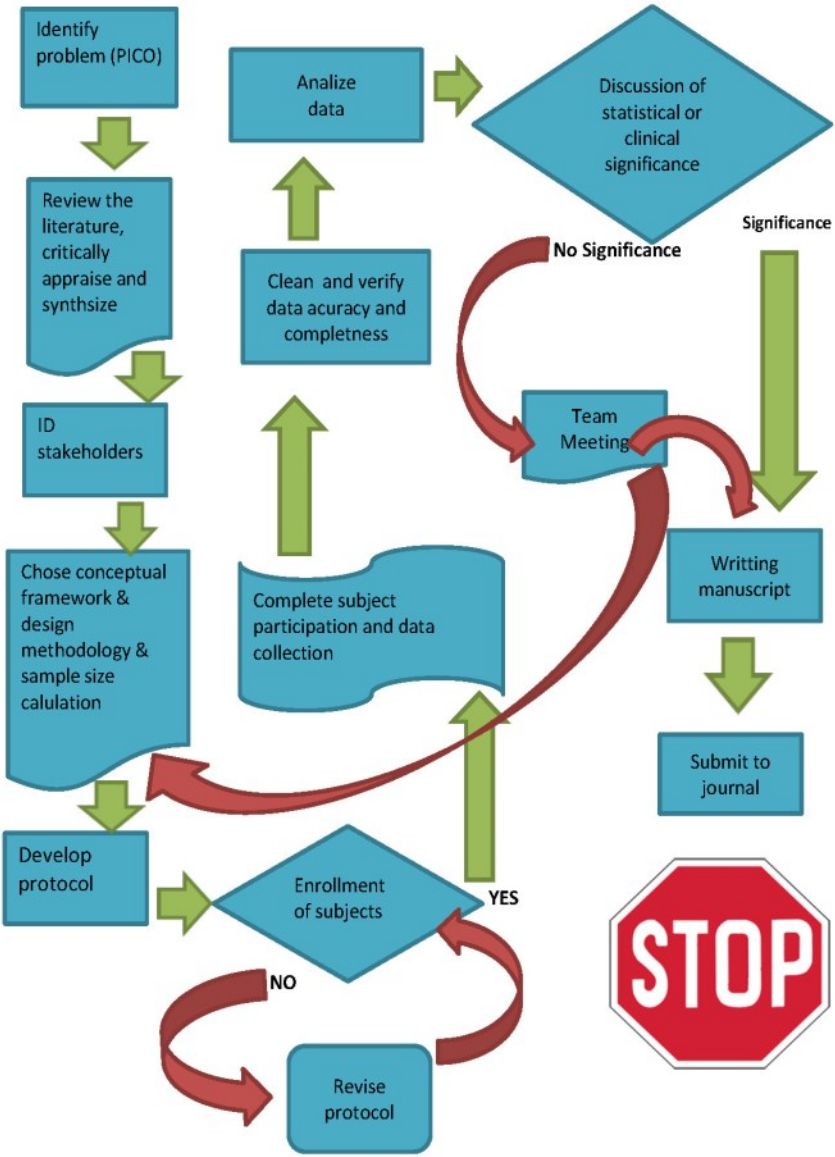
Authors and article	Study design & Sample (N)	Variables of interest	Statistics (including P value)	Results summary (include limitations)
Bailey; Bird,;McGrath, Chorney (2015)Preparing Parents to Be Present for Their Child's Anesthesia Induction: A Randomized Controlled Trial	RCT (1) PPIA preparation of parents (2) No preparation of parents N-93 2-10YO and families	preoperative anxiety, cooperation at induction, emergence delirium, and postoperative pain. Parents were compared on measures of state anxiety and self-efficacy about their role	effectiveness of parental presence in reducing children's preoperative anxiety was not improved by the intervention at the pre-op(holding) stage (P =0.15, Wilcoxon Mann-Whitney odds [WMWodds; 95% confidence interval [CI]] = 1.41 [0.75–3.10]), the point at which the family left the holding area (P = 0.39, WMWodds [95% CI] = 1.18 [0.60–2.45]), the point that they entered the OR (P =0.28, WMWodds [95% CI] = 1.23 [0.65–2.67]), or the point at which the anesthesia mask was introduced (P = 1.3, WMWodds [95% CI] = 1.23 [0.64–2.63]). However, parents who received PPIA preparation trended toward greater self-efficacy about their role in the OR than those who received PPIA standard (P = 0.03, WMWodds [95% CI] = 1.69 [1.07–2.87]).	A brief, video-based intervention was not successful in reducing the children's preoperative anxiety. However, it is unclear whether parents included in this study actually performed as instructed in the intervention to reduce their children's anxiety. Future research should monitor parent behavior and support parental performance to reduce their children's preoperative anxiety.
Kain, Caldwell-Andrews, Mayes, Weinberg, Wang, MacLaren,Blount (2007) Family-centered Preparation for Surgery Improves Perioperative Outcomes in Children: A Randomized Controlled Trial	RCT (1) control: standard of care; (2) parental presence(3) ADVANCE: received family-centered behavioral preparation; (4) oral midazolam N-408 2–10 yo and family	preoperative anxiety levels (STAI) and postoperative outcomes such as analgesic consumption and emergence delirium (agitation)	ADVANCE group exhibited significantly lower anxiety in the holding area as compared with all three other groups (34.4 ± 16 vs. 39.7 ± 15; P = 0.007) and were less anxious during induction of anesthesia as compared with the control and parental presence groups (44.9 ± 22 vs. 51.6 ± 25 and 53.6 ± 25, respectively; P = 0.006). Anxiety and compliance during induction of anesthesia was similar for children in both the ADVANCE and midazolam groups (44.9 ± 22 vs. 42.9 ± 24; P = 0.904). Children in the ADVANCE group exhibited lower incidence of emergence delirium post-op (P = 0.038), required significantly less analgesia in the recovery room (P = 0.016), and were discharged from the recovery room earlier (P = 0.04) as compared with children in other groups.	The family-centered preoperative ADVANCE preparation program is effective in the reduction of preoperative anxiety and improvement in postoperative outcomes.

Kim, Mee; Yu, Park, (2015) Video Distraction and Parental Presence for the Management of Preoperative Anxiety and Postoperative Behavioral Disturbance in Children: A Randomized Controlled Trial	RCT (1)video distraction group (2) parental presence group, (3) a combination of video distraction plus parental presence group during induction of sevoflurane anesthesia N-117 2-17yo and families	Modified Yale Preoperative Anxiety Scale (mYPAS) was used to assess anxiety in the preoperative holding area (baseline), immediately after entry to the operating room, and during mask induction. Compliance during induction, emergence delirium during recovery, and negative behavioral changes at 1 day and 2 weeks postoperatively were also assessed	mYPAS scores were comparable (P = 0.558), and the number of children exhibiting baseline anxiety (an mYPAS score > 30) were not different among the 3 groups in the preoperative holding area (P = 0.824). After intervention, the changes in mYPAS scores from baseline to induction were not different among the 3 groups (P = 0.049). The proportion of children with increased mYPAS scores was higher in group P compared with group V from baseline to operating room entry (Bonferroni-adjusted 95% confidence interval for difference, 2 to 49) but similar from baseline to induction in all 3 groups. Although children in group V were more cooperative during mask induction than those in the other 2 groups (P < 0.001 versus group P and P = 0.001 versus group VP), no significant intergroup differences were observed in the incidence of emergence delirium or new-onset negative behavioral change after surgery.	Video distraction, parental presence, or their combination showed similar effects on preoperative anxiety during inhaled induction of anesthesia and postoperative behavioral outcomes in preschool children having surgery. Increased parental anxiety can increase child anxiety
			Overall conclusions: Parental presence can decrease children's postoperative anxiety in the PACU, this is especially so if the parents have low levels of anxiety	

QuaLitative Studies are words, they are about the **LIVED** or human experience, these are interviews, focus groups, etc.



QuanNitative studies are numbers. Examples: blood pressures, length of hospital stay, pain scores, etc.



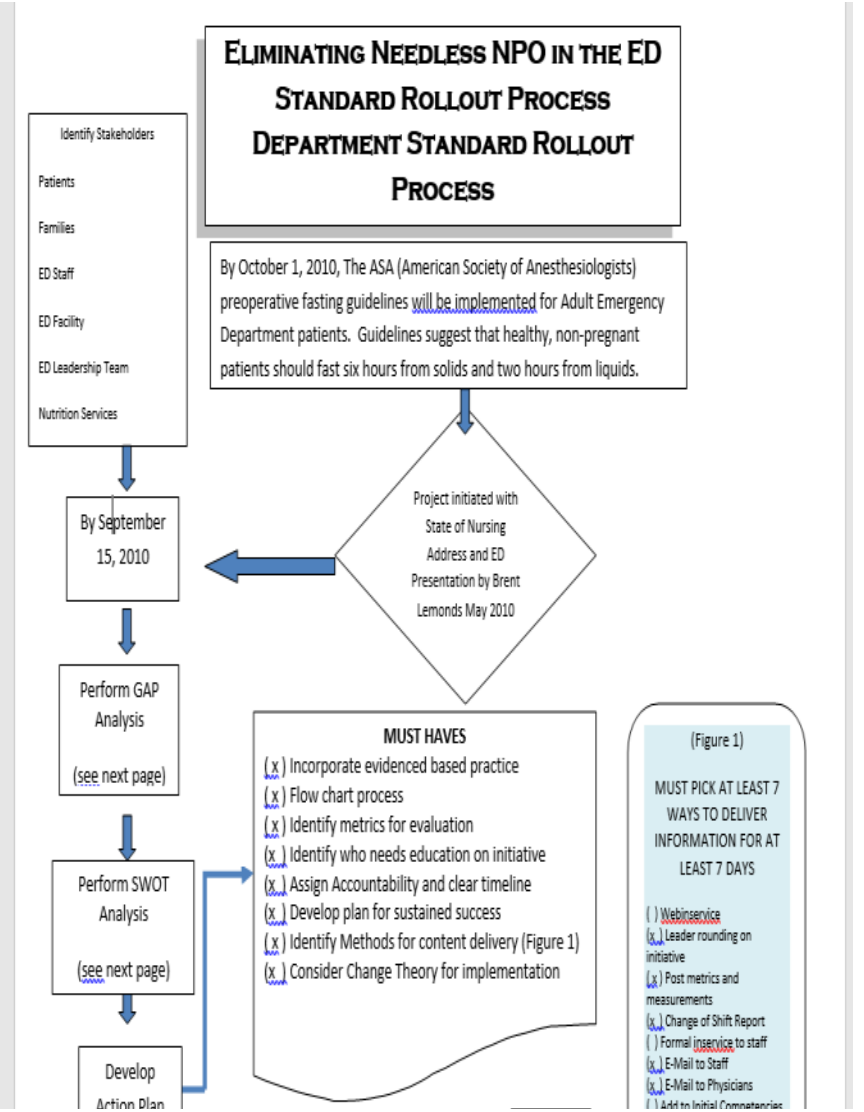
Research Study Design

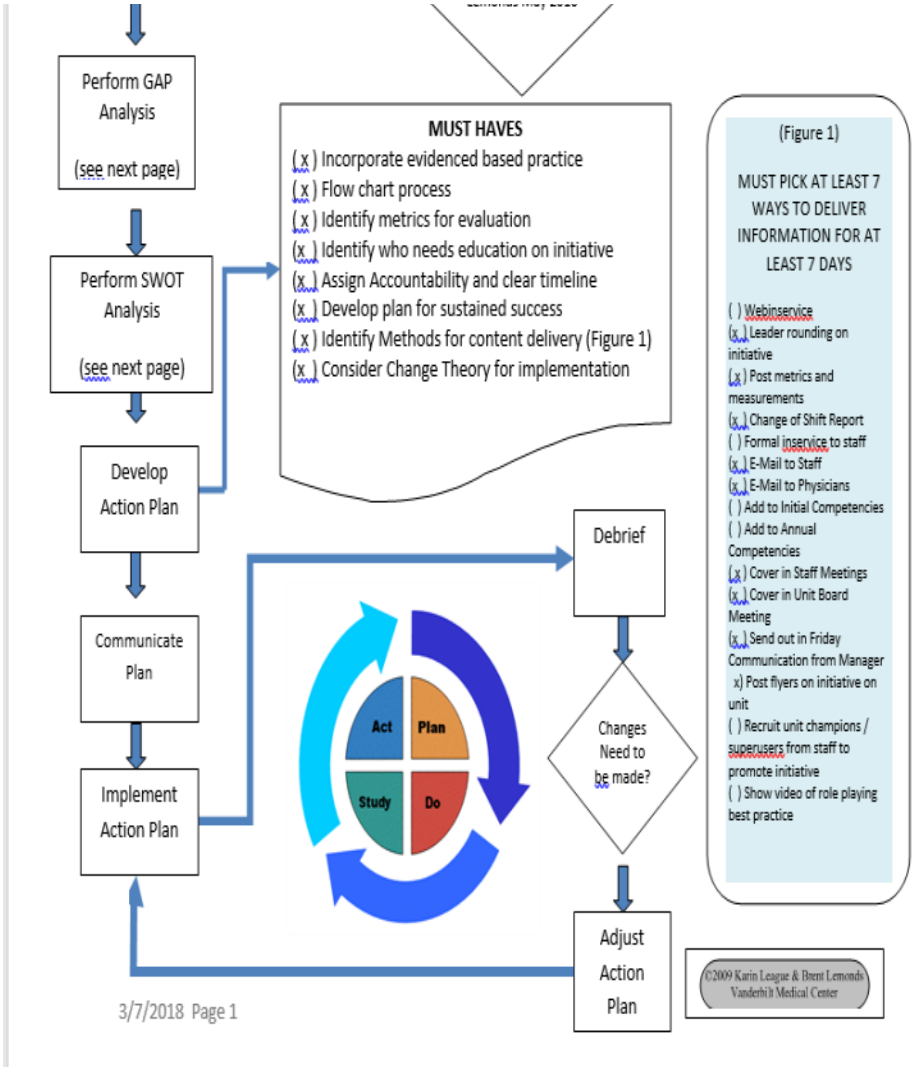
(created by Nancy Wells & Vicky Sandlin)

Component	Qualitative	Quantitative				
Names used in the literature	Phenomenology Ethnography Grounded theory Focus group	Descriptive Correlational Survey Cross-sectional	Cohort	Case control	Quasi -experimental Pre-post test Non-equivalent groups	Experimental Randomized controlled trial (RCT)
Purpose of study	To explore To describe	To describe	To describe	To predict	To compare To test differences	To compare To test differences
Sampling	Purposive	Convenience Random selection	Convenience	Convenience	Convenience	Convenience
# of groups	1	1	1 or 2	2	1 group pre-post 2+	2+
Group assignment	N/A	N/A	Non-random	Non-random	Non-random	Random assignment
Variable manipulated	N/A	N/A	Exposure to a condition	With & without a condition	Intervention	Intervention
Time dimension	N/A	1 point in time	Prospective 2+ points in time	Retrospective 2+ points in time	Pre – post >2 points in time (longitudinal)	Pre – post >2 points in time (longitudinal)

Standard roll out process was developed at VUMC to assist the roll out of new initiatives. Proper development and utilization of this tool will guide the implementation team toward a successful outcome. Below is an example, the tool is available in "word" on our website under "resources" tab. Vanderbiltnursingebp.com

The following example is from Traci Denton, MSN, RN





Communication within the team and external of the team is key. The PDSA process is continuous as evaluation and improvement of the process is

ongoing

GAP ANALYSIS

Directions: Consider organizations mission, vision, strategy, and objectives.

CURRENT STATE	GAP	FUTURE STATE
Pt is placed on NPO status upon admission to ED and held without fluids or solids until after procedures and results.	Lack of education regarding ASA Guidelines	Procedure times are identified and patients given solids up to six hours prior to procedure and clear liquids up until two hours prior to procedure.
Patients placed on extended NPO status are uncomfortable, thirsty, hungry, dehydrated, have compromised acid/base balance, interrupted routine medication schedule and poor glucose control.	Lack of education regarding ASA Guidelines	Patients have increased comfort levels, are hydrated prior to procedures, able to receive routine medications and have better glucose control.

GAP Analysis reveals direction, include your implementation team and address or include the strategic goals or mission of the organization

STRENGTHS	WEAKNESSES
Increases patient satisfaction Increases family satisfaction Increases staff satisfaction Evidence Based Practice	Long held perception that keeping patients NPO preoperatively for extended periods is essential to prevent aspiration. There is no evidence to support this theory.
OPPORTUNITIES	**THREATS**
This project addresses the Innovation Pillar Applies evidence based practice in the clinical setting Educates staff regarding ASA guidelines Keeps patients homeostatic and better prepared for procedures Multi-disciplinary	Physicians not willing to change Nursing staff not willing to change Increased nutrition cost to department

3/7/2018 Page 4

The SWOT analysis identifies HOW you can move the project or initiative forward towards the direction you identified through the GAP analysis

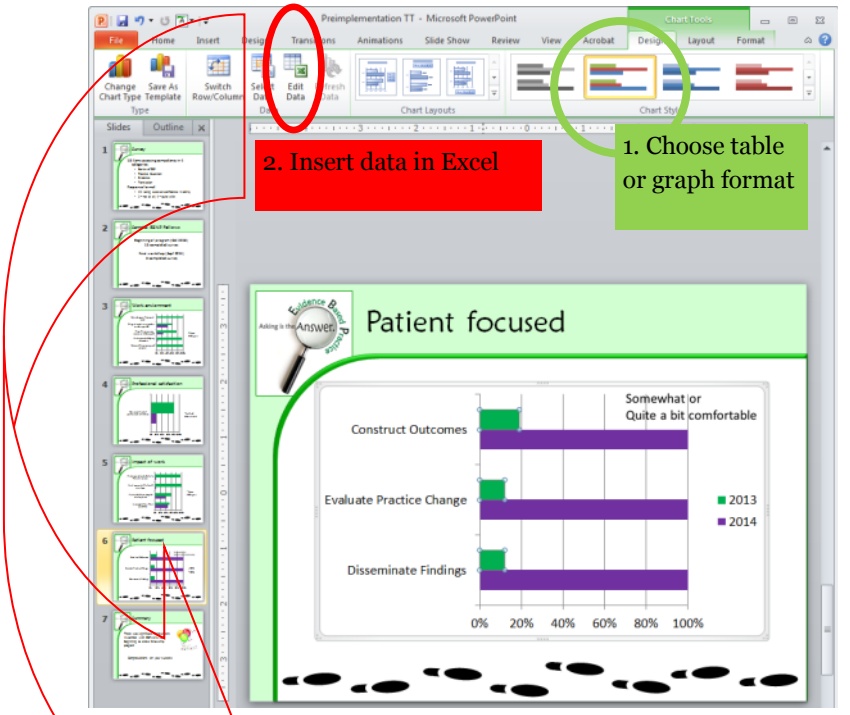
A Sampling of Statistics

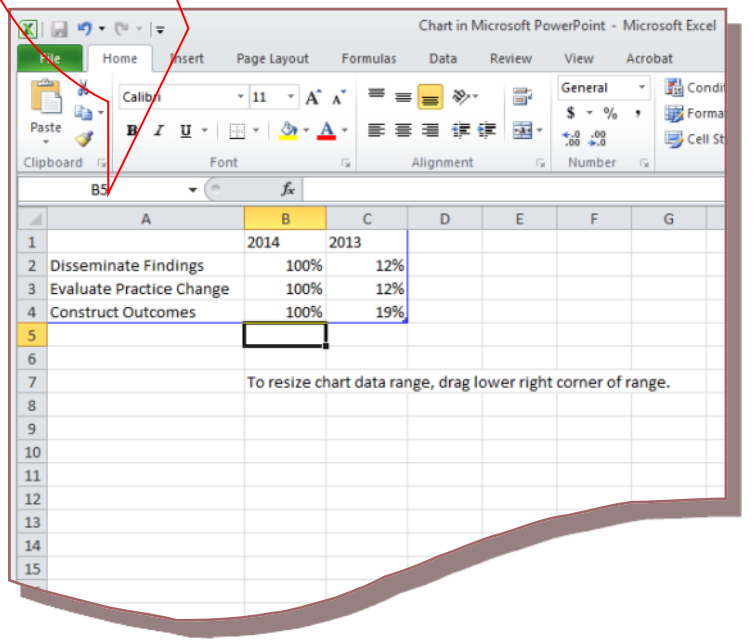
Statistic	Simple Definition	Important Parameters	Understanding the Statistic	Clinical Implications
Odds Ratio (OR)	The odds of an outcome occurring in the intervention group compared with the odds of it occurring in the comparison or control group.	• If an OR is equal to 1, then the intervention didn't make a difference. • Interpretation depends on the out-come. • If the outcome is good (for example, fall prevention), the OR is preferred to be above 1. • If the outcome is bad (for example, mortality rate), the OR is preferred to be below 1.	The OR for hospital-wide mortality rates (HMR) in the MERIT study was 1.03 (95% CI, 0.84 – 1.28). The odds of HMR in the intervention group were about the same as HMR in the comparison group.	From the HMR OR data alone, a clinician may not feel confident that a rapid response team (RRT) is the best intervention to reduce HMR but may seek out other evidence before making a decision.
Relative Risk (RR)	The risk of an out-come occurring in the intervention group compared with the risk of it occurring in the comparison or control group.	• If an RR is equal to 1, then the intervention didn't make a difference. • Interpretation depends on the out-come. • If the outcome is good (for example fall prevention), the RR is preferred to be above 1. • If the outcome is bad (for example, mortality rate), the RR is preferred to be below 1.	The RR of cardiopulmonary arrest in adults was reported in the Chan PS, et al., 2010 systematic review[a] as 0.66 (95% CI, 0.54 – 0.80), which is statistically significant because there's no 1.0 in the CI. Thus, the RR of cardiopulmonary arrest occurring in the intervention group compared with the RR of it occurring in the control group is 0.66, or less than 1. Since cardiopulmonary arrest is not a good outcome, this is a desirable finding.	The RRT significantly reduced the RR of cardiopulmonary arrest in this study. From these data, clinicians can be reasonably confident that initiating an RRT will reduce CR in hospitalized adults.
Confidence Interval (CI)	The range in which clinicians can expect to get results if they present the intervention as it was in the study.	• CI provides the precision of the study finding: a 95% CI indicates that clinicians can be 95% confident that their findings will be within the range given in the study. • CI should be narrow around the study finding, not wide. • If a CI contains the number that indicates no effect (for OR it's 1; for effect size it's 0), the study finding is not statistically significant.	See the two previous examples.	In the Chan PS, et al., 2010 systematic review,[a] the CI is a close range around the study finding and is statistically significant. Clinicians can be 95% confident that if they conduct the same intervention, they'll have a result similar to that of the study (that is, a reduction in risk of cardio-pulmonary arrest) within the range of the CI, 0.54 – 0.80. The narrower the CI range, the more confident clinicians can be that, using the same intervention, their results will be close to the study findings.
Mean (X)	Average	• Caveat: Averaging captures only those subjects who surround a central tendency, missing those who may be unique. For example, the mean (average) hair color in a classroom of schoolchildren captures those with the predominant hair color. Children with hair color different from the predominant hair color aren't captured and are considered outliers (those who don't converge around the mean).	In the Dacey MJ, et al., 2007 study,[a] before the RRT the aver-age (mean) CR was 7.6 per 1,000 discharges per month; after the RRT, it decreased to 3 per 1,000 discharges per month.	Introducing an RRT decreased the average CR by more than 50% (7.6 to 3 per 1,000 discharges per month).

[a] For study details on Chan PS, et al., and Dacey MJ, et al., go to http://links.lww.com/AJN/A11

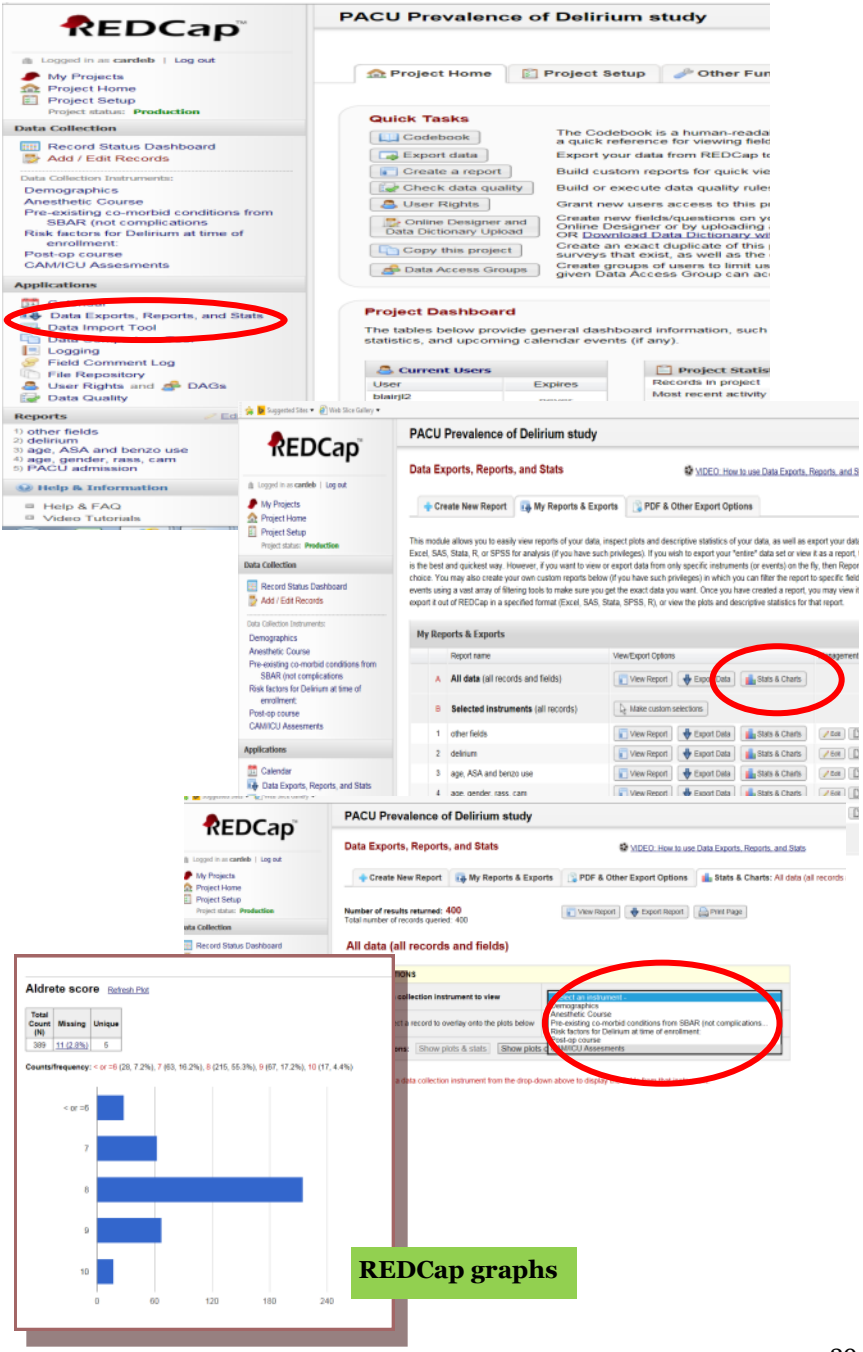
Excel and REDcap™ (Pictures say a 1,000 words)

Make a graph in Excel and PowerPoint





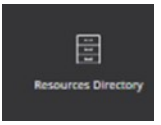
REDCap Graphing Options



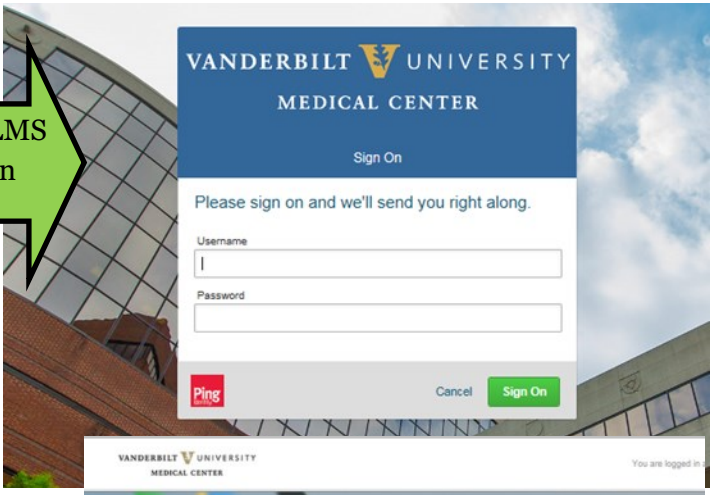
REDCap graphs

How do I Complete Research Training?

VUMC homepage, click

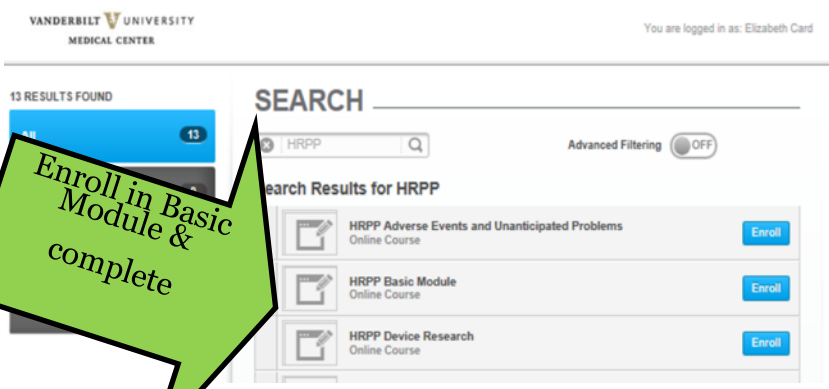


Click on LMS and sign in



Search HRPP

Enroll in Basic Module & complete



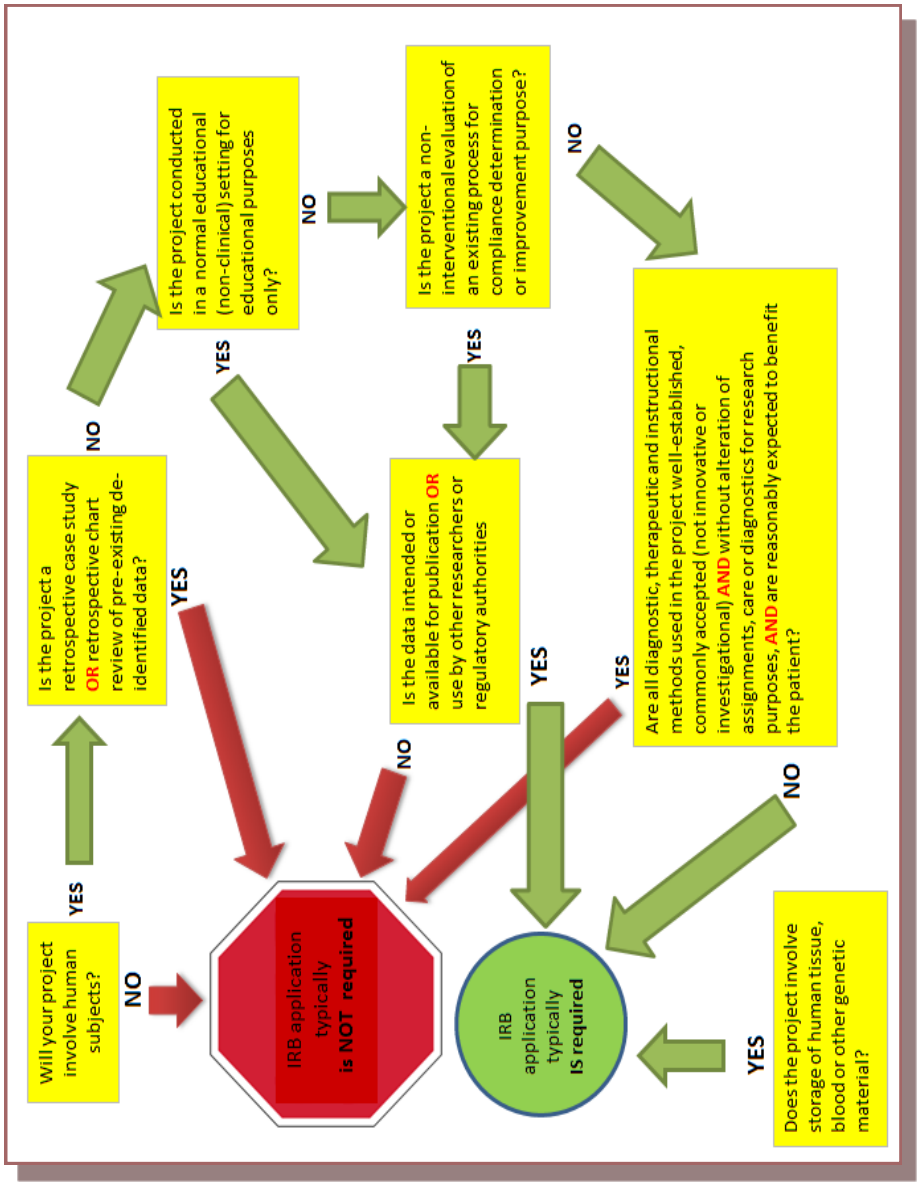
When do I Need to Apply to the IRB?

	Test Description	Yes	No
1	**Human Subject Test** Does the project involve human subjects?	2,3,4,5	IRB notification is typically **NOT** required
2	**Education Test** Is the project conducted in a normal educational ("classroom") setting for educational purposes only?	3,7	5
3	**Retrospective Review Test** Is the project a retrospective case study **OR** retrospective chart review of pre-existing de-identified data?	IRB notification is typically **NOT** required	5
4	**QA/QI Test** Is the project a non-interventional evaluation of an existing process for compliance or improvement purposes?	IRB notification is typically **NOT** required	5
5	**Standard Procedures Test** Are all diagnostic, therapeutic and instructional methods used in the project well-established, commonly accepted (not innovative or investigational) **AND** without alteration of assignments, care, or diagnostics for research purposes, **AND** are reasonably expected to benefit the patient?	6	IRB notification typically **IS** required
6	**Biological Repositories Test** Does the project involve storage of human tissue, blood or genetic material?	IRB notification typically **IS** required	7
7	**Dissemination or Contribution Test** Is the data intended or available for publication **OR** use by other researchers or regulatory authorities?	IRB notification typically **IS** required	IRB notification is typically **NOT** required

For additional clarification:

VUMC IRB policy

How do I Know if I Need to Apply to the IRB?



This is a guide only, if you have additional questions, refer to the IRB policy

Or call with questions to the IRB: (615) 322-2918 or toll-free 866-224-8273

Poster Construction Guidelines, part I

Authors	Sample	Variables of interest	Study design	Statistical results (p value, odds ratio)	Results	Summary
Brenner, S; Rupp, V., Boucher, J., Weaver, K.,Dusza, & S., Bokovov, J. (2013)	115 patients 5-18 years old	FACES, tachycardia, anxiety measured observer scale before, during, after	RCT EMLA versus placebo for 15 min prior iv stick or blood draw	There was no significant differences between study and placebo groups (P>.05) in means of anxiety, heart rate and pain. There was an inverse association between age and pain	Although a negative study, still significant finding as far as establishing time needed for outcome point	Although a negative study, still significant finding as far as establishing time needed as outcome point

Poster Construction Guidelines part II

Posters generally have the following sections:

Methods: the methods portion of your poster. You will include what search engines you used (PubMed, CINAL, etc.) what key words you used, total number of articles, your inclusion exclusion criteria (example: Inclusion: Articles written in English, needle stick pain, pediatric patients) If research poster step by step of your research process in enough detail someone reading it could replicate the research study.

Results: In this section you need to discuss the results from the abbreviated data sheet (see page 29) or your research studyfindings You can combine like results, point out differences, etc. but do not make any suggestions regarding the data, it is just the facts so the reader of the poster can formulate their own ideas when reading the poster.

Discussion: This section you will point out strengths/ weaknesses and interpret the findings, suggestions can be made here

Conclusion: In this section list bulleted conclusions (your suggestions, recommendations based on the evidence) that are supported by the results that seem reasonable. Indicate how the results relate to expectations and to earlier research.

These should support previous theories or findings in your search, even if it was a combination of findings. The conclusion should explain how the research has moved the body of scientific knowledge forward and always appropriate to mention additional research is needed with suggestions.

Please visit our website on Poster Presentations for additional resources related to creating and presenting a poster, including

Nurse Detectives: The Case of The Missing Evidence
(OR-How to construct your own EBP poster)

Elizabeth Card MSN, APRN, FNP-BC & Christine Tomes, RN, CPAN

VanderbiltNursing
Recognized Excellence, Designated Magnet

A Little Bird Told Me...

Background (section)

- A problem statement expresses the dilemma or situation that needs to be studied.
- It can include:
  - Problem identification
  - Background/nature of the problem
  - Scope-how big the problem is
  - Knowledge gaps
  - Consequences of the problem
  - Proposed solution

Example:
Evidence based practice (EBP) is an expectation of a competent nurse.

- In nursing it is our responsibility to use research to guide, validate, or change our practice.
- This needs to be occurring on an ongoing basis to verify that we are giving safe, quality care to our patients.
- Nurses want to know how to determine what is good evidence for their research.

Something Just Doesn't Seem Right

Purpose Statement (section):

- Here the researcher will articulate their goals for their research.

Example:
The purpose of this study was to demonstrate how to find evidence, determine if it is relevant to a question, and then disseminate it to others.

One Tough Cookie !

The Hypothesis or EBP Question (section):
Your question should be written in the PICOT format which will help drive your literature search.

- P-Population I-Intervention C-Control or
- O-Outcome T- Time

In ____(P), how does ____(I) compared to _____(C) affect _____ in (T) _____?

Example:
Can a poster on evidence used in a sleuthing format assist nurses in better understanding how to do research?

It's Not Always Black And White

Methods (section)
How you found the relevant evidence.
Search Process:

- What databases or search engines did you use?
- What key words did you use? (abuse, violence, etc.)
- What were the total number of articles reviewed?
- Your inclusion and exclusion criteria.

Show Me the Data!!!!

Present findings on abbreviated data in table:
Place information from your articles into an abbreviated data sheet (optional to include in poster)

Authors/Title of Article	Sample (profile, N)	Variables of interest	Study Design	Stats	Results	Summary

Just the Facts, Mam

Data: If included, in a graph/table/flowchart

I Don't Want To Alarm You But...

Results (section):
Discuss the results from the abbreviated data sheet.

- You can combine like results, point out differences, etc., but do not make any suggestions regarding the data.
- It is just the facts so that the reader can formulate their own ideas and opinion.

Enough Clues To Sink A Ship

Discussion (section)
Present synthesized findings in detail, include:

- Strengths and weaknesses of the articles
- Limitations or biases
- Implications

Tie Up the Loose Ends

Conclusions (section):

- List reasonable conclusions that are supported by the results.
- Point out the strengths and weaknesses of your findings
  - Recommendations for future studies

I'm No Rat, But ... They Did It !

Authorship: Include all of those contributing to poster
References: If you do not have room here for references, state that a reference list is available from the authors.

Get Involved!

NURSES NEED TO BE CONSUMERS OF AND CONTRIBUTORS TO THE EVIDENCE UPON WHICH NURSING PRACTICE IS BUILT