

Objectives:

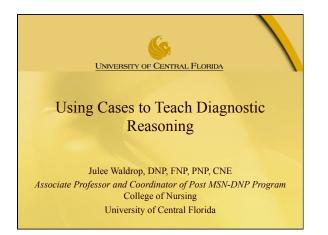
- Implement in-class case studies and in-class or on-line discussions which foster development of diagnostic reasoning skills, application of EBP guidelines to practice, and promote analysis and application of content to patient and practice specific topics.
- 2. Create examinations which evaluate competency and reflect best practice in test item design.

UCF

Presentation Outline:

- Part One: Use of Case Studies Dr. Waldrop
- **Part Two:** *Discussion Questions* to promote active learning and student engagement Dr. Wink
- *Part Three: Testing* via examinations which evaluate achievement of course objectives and practice competencies Dr. Blackwell
- Part Four: Skill practice

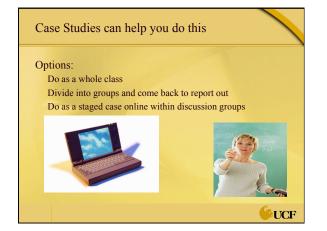
SUCF



New Skills for Nurse Practitioner Students

- Formulating an inquiry strategy includes
 - Thorough history (types of questions asked)
 - Thorough physical exam
 - Use of tests
- Differential Diagnosis (hypotheses)
- Diagnosis (best bet)
- Plan (evidence based)
- Evaluation (follow up)









Case Example

- 16 year old female
- CC: "I have not yet had a period"
- HPI: Nothing pertinent*
- PMH: Has "migraine" headaches about every other month. No surgeries, no hospitalizations.
- ROS: Pertinent positives headaches as above. Admits to some vaginal discharge that does not have an odor.

UCF

Case Example

- FmHx: Mom has migraine headaches. Mother started her period at age 15 and Sister at age 14. Father has HTN, high cholesterol and is obese.
- SHx: Denies smoking, using illicit drugs or ever having had sexual activity but does have a steady boyfriend. Lives at home with Mom and Dad and younger sister. Gets straight As in school. Participates on varsity track team. Reports good appetite.
- Allergies: NKDA
- Meds: Motrin prn

Case Example

- PE: VS WNL
- Wt: 97 lbs; Ht: 61.5 inches; BMI: 18
- HEENT; Neck; Lungs; CV; Abdomen all WNL
- Tanner stage 4
- Skin: faint facial hair noted
- GU: normal external genitalia





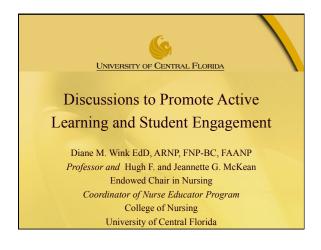
Diff Dx Suppo	orting Non-			
Data	Supportir Data	More ng History?	Tests R Labs	esults Plan & F/U

		_
		_
		-

Resources

Banner, HS & Pickell,GC (1991). Developing Clinical problem-solving Skills. A guide to more effective diagnosis and treatment. W.W. Norton & Company, NY.

Bowen, J. L. (2006). Educational Strategies to Promote Diagnostic Reasoning. *NEJM*, 355, 2217-2225.



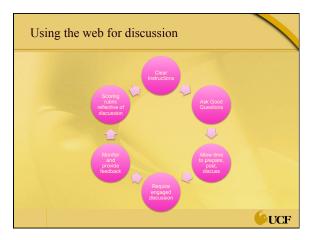
Why discuss? • Discussion as a learning activity. • Develop collaboration skills. • Develop criticism skills. • Develop ability to • Analyze data • Synthesize data • Propose change or intervention based on conclusions. • Faculty identification of student learning needs • Discussion as an evaluative activity • Demonstration of expected competency



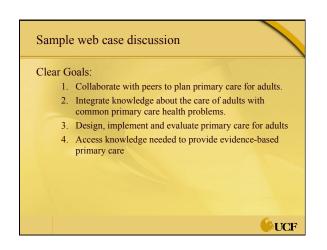












Sample web case discussion

How it will work

- 1. Each student will be assigned to a case study group set up by the course faculty.
- 2. Each group will discuss a series of cases
- 3. Group members will be sent case information 7-10 days before their case is to start
- 4. All group members should have their initial post ready to post by the day the case discussion is to begin.
- All group members will participate in the discussion but only selected students will write a report on one assigned case.

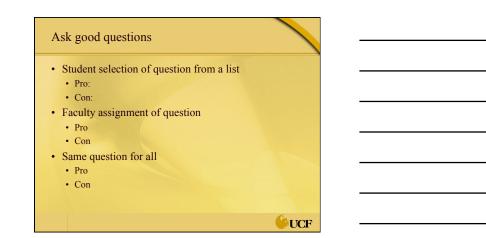
SUCF

Sample web case discussion

How to do it

- Log on to discussion at least three times during the case week (see schedule for dates)
- Read, analyze, respond to specific content of the posts of group members, ask questions, critique ideas and statements, make recommendations, suggest use of EBP and other practice resources
- · Active engaged discussion is expected
- Include citations to EBP and other publications used.
- A citation is NOT required for every post.







Objective/Criteria	Performance Indicators					
	Above expectation	Meet Expectations	Below Expectation	Missing or not done		
Initial post reflects thoughtful analysis nd exploration of assigned topic	(2 points)	(1.5 points)	(1 points)	(0 points)		
Active engagement in discussion throughout discussion week		(0.5 points)	(0.25 points)	(0 points)		
Thoughtful responses which expland discussion	(2 points)	(1.5 points)	(1 points)	(0 points)		
Resources clear/ APA	(1 points)	(0.5 points)	(0.25 points)	(0 points)		
				out of		

Module Discussion Score					₽Q (î
Criteria	Ratings				Pts
Initial post identifies correct differential, diagnostic testing, and needed treatment based on information provided	No errors in post 1.5 pts	Few errors in post 1.25 pts	Many errors in post 1 pts	Post Missing or late 0 pts	1.5 pt
Gold standard EBP guideline used as a reference	Used gold standard EPB guideline 1.5 pts	Used good guideline but not gold standard 1.25 pts	Used resource from inappropriate souces. 1 pts	s No resources used 0 pts	1.5 pt
				Total Po	oints: 3

Module Discussion Score					PQ ₫
Criteria	Ratings				Pts
Initial post identifies correct differential, diagnostic testing, and needed treatment based on information provided	No errors in post 1.5 pts	Few errors in post 1.25 pts	Many errors in post 1 pts	Post Missing or late 0 pts	1.5 pts
Gold standard EBP guideline used as a reference	Used gold standard EPB guideline 1.5 pts	Used good guideline but not gold standard 1.25 pts	Used resource from inappropriate souces. 1 pts	s No resources used 0 pts	1.5 pts
				Total Po	oints: 3



Objective/Criteria	Performance Indicators					
objective, enterna	At expectation	Meets some expectations	Below Expectation	Missing or not done		
Initial post reflects thoughtful analysis nd exploration of assigned topic	(2 points)	(1.5 points)	(1 points)	(0 points)		
Active engagement in discussion throughout discussion week		(0.5 points)	(0.25 points)	(0 points)		
Thoughtful responses which expland discussion	(2 points)	(1.5 points)	(1 points)	(0 points)		
Resources clear/ APA citations accurate	(1 points)	(0.5 points)	(0.25 points)	(0 points)		



- Professional Goals Discussion
- Professional Issues Discussion
- Case Discussion

UCF

Professional Goals Discussion

Students assigned a topic to present:

- Introduce yourself to other's in the group.
- Let them know about your clinical background
- Tell others in your group about the type of site where you will be doing your clinical practice course.
- Discuss with group members how you will achieve three of your professional growth goals this semester. Base your goals on the 2012 statement of *Nurse Practitioner Core Competencies* http://www.nonpf.com/displaycommon.cfm?an=1&subarticlenbr=14

Rubric	to ev	alua	te	profes	sional §	goals disc	cussion
Initial Discuss	ion Post Ratings					Pts	
Initial post by stated date	Done I	Late but de 0.5 pts	one	Not done or o 0 pts	over a week late	1 /1 pts	
Included brief professional background and description of site	Excellent 4 pts	Very good 3 pts	Nee mor deta 2 pt	e much sil more	Not done or unacceptable 0 pts	4 / 4 pts	
Diacussed Professional growth goals based on competencies	Excellent 4 pts	Very good 3 pts	Nee mor deta 2 pt	e much ail more	Not done or unacceptable 0 pts	3 / 4 pts	
Active participaiton in discussion	High level of ongoing discussion 3 pts	of ongo	ing Ission	Low level of ongoing discussion 1 pts	No engagement in discussion 0 pts	2 / 3 pts	6
					Total Points	a: 10 out of 12	UCF

Professional Issues Discussion Example A

Students assigned a question to post on the same general topic:

Access the web pages of the assigned professional organization. Summarize initiatives they have to support NP full scope of practice and how individual NPs can be involved.

- Student A: NOPNF
- Student B: AANP
- Student C: NAPNAP
- Student D: American Association of Nurse Anesthetists

UCF

Professional Issues Discussion Example B

Students assigned a question to answer on a variety of topics covered in the module:

- Student E: Identify a public policy that has a positive impact on the general health of the populace which is not described in the course text. What are the societal and political forces that brought this about?
- Student F: Identify currently proposed legislative bill being considered in the state legislature which is of significant consequence to advanced practice nurses, nursing practice or health care in general. Describe the legislation and its expected impact. Take a stand for or against the proposed legislation and why you have chosen that position. Include the number of the bill in our post.

Rubric to evaluate learning and competencies in issue discussion								
Objective/Criteria	bjective/Criteria Performance Indicators							
	Meets Expections	Meet Most Expectations	Meets Few Expections	Not done				
Initial Post reflects thoughtful analysis and exploration of assigned topic	(2 points)	(1.5 points)	(1 points)	(0 points)				
Active Engagement in discussion throughout discussion week	(1 points)	(0.5 points)	(0.25 points)	(0 points)				
Thoughtful responses which expand discussion	(2 points)	(1.5 points)	(1 points)	(0 points)				
Resources clear/ APA	(1 points)	(0.5 points)	(0.25 points)	(0 points)				
				out of 6				
				UCF				

Case Discussion Example

Example:

- Students are sent a case study before the discussion starts. This includes the patient assessment and basic background information about the patient.
- Differential may be provided or could be relatively clear from this information and verified by faculty as the case evolves.

UCF

Case Discussion Topics Example

Students assigned a topic to address:

- Topic 1: Specific diagnostic tests, meds, teaching needed
- Topic 2: Collaborative needed with other health care providers
- Topic 3: Collaborative actions with community resources, family members / friends.
- Topic 4: Discussion of items related to client's race or culture, family status, work or other social items
- Topic 5: Health Promotion needs of the client/ family
- Topic 6: Summary of usual charges for the visit, labs, dx tests
- Topic 7: Up to five differential diagnoses
- Topic 8: Set of not more than 20 questions r/t the case

		mple								
	UCF College of Nursing Case Study Sign up NGR 6201 Spring 2013 Group Three: Focus of initial post									
r	Student Name	Case	Case	Case	Case					
	orducent realife	One	Two	Three	Four					
Student A		Address	Address	Address	Address					
Case One Report		Topic 7	Question 5	Question 3	Question 1					
Student B		Address	Address	Address	Address					
Case One Report		Topic 8	Question 6	Question 4	Question 2					
Student C		Address	Address	Address	Address					
Case Two Report		Question 1	Topic 7	Question 5	Question 3					
Student D		Address	Address	Address	Address					
Case Two Report		Question 2	Topic 8	Question 6	Question 4					
Student E		Address	Address	Address	Address					
Case Three Report		Question 3	Question 1	Topic 7	Question 5					
Student F		Address	Address	Address	Address					
Case Three Report		Question 4	Question 2	Topic 8	Question 6					
Student G		Address	Address	Address	Address					
Case Four Report		Question 5	Question 3	Question 1	Topic 7					
Student H		Address	Address	Address	Address					
Case Four		Question 6	Question 4	Question 2	Topic 8					



Case Discus	sions									
Criteria	Ratings								Pts	
Initial post on first day	Done 2 pts	Day 1 pr			Over 0 pts	one day late			2 / 2 pts	
Initial post on assigned topic. Ongoing discussion	Outstanding 7 pts	Very well done 6 pts	Very G but of 5 pts		Good 3 pts	Good but off topic 2 pts	Needs great improvement 1 pts	Not done 0 pts	6 / 7 pts	
Active engaged discussion with substantive contributions view longer description	Outstanding 7 pts	Very well done 6 pts	Very good but needed more depth or scope 5 pts	Good bi minimal engager 4 pts		Minimal contributions in depth and scope 3 pts	Very low level participation/ contribution 2 pts	Not Done 0 pts	5 /7 pts	
Reflected review of relevant high quality resources view longer description	Outstanding u resources 4 pts	se of	Very goo resource 3 pts			ood use of iources ots	Course texts only 1 pts	None 0 pts	2 / 4 pts	

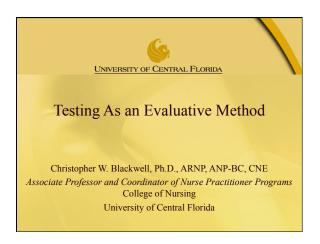
Using the web for discussion

- Clear instructions
- Ask discussion questions to promote engaged discussion
- Allow time to prepare, post, engage and respond
- Require engaged discussion
- Provide feedback along the way
- Rubric reflective of discussion type

References

- Hsu, L., & Hsieh, S. (2006). An exploration of scenario discussion in a web-based nursing course. *Journal Of Nursing Research*, *14*(2), 155-165
- Pinch, W., & Graves, J. (2000). Using web-based discussion as a teaching strategy: bioethics as an exemplar. *Journal Of Advanced Nursing*, 32(3), 704-712. doi:http://dx.doi.org/10.1046/j. 1365-2648.2000.01531.x

UCF



Purposes of Evaluation

- Identification of learning
 - Allows students to demonstrate mastery of essential themes, content, and objectives
- Determination of grades
- Diagnosis of problems:
 - Learning Needs
 - Learning Deficits
- Prepares for Cert Exam



Achievement Tests and Assessments

- Test questions should measure learning outcomes and students' learning characteristics
- Results should be valid and reliable
 Tests what it's meant to test and with results that are statistically reproducible
- Provides input for faculty about where content emphasis is needed or where misinterpretations possibly occurred



Planning the Test

- Step One: Determine the best type of exam to administer for given objective
- Step Two: Define intended learning outcomes (can use Bloom's Taxonomy)
- Step Three: Decide the types of test questions to use
 - Multiple Choice

· Fill in the Blank

True/FalseMatching



- Essay
- ANCC Examinations are all primarily multiple choice
 CCF

Planning the Test

- Step Four: Develop the Test Blueprint:
 - Match the blueprint with the purpose of the test
 - Relate learning outcomes to content
 - · Indicate the weight needed for each item:
 - How much time was spend on each area for instruction?
 - Which outcomes are most essential for retention and transfer?

Planning the Test								
Testing Blueprint Example (Cardiovascular 50 Question Exam):								
Content Area	Assessment	Diagnosis	Management	Outcome Evaluation				
HTN	5	1	5	1				
Dysrhythmias	2	2	2	1				
Ischemic Dx	3	3	6	2				
HF	5	5	1	1				
Hyperlipidemia	0	0	2	1				
Coagulation Dx	1	1	1	0				
				UCF				

,			

The Anatomy of a Question

- Multiple-choice questions typically have 3 parts: a stem, the correct answer called the key, and several wrong answers, called distractors:
- Stem:
 - A 45 year-old female patient complains of shortness of breath. Which item in the patient's history would indicate a risk for chronic obstructive pulmonary disease (COPD)?
- Distractors/Key:
 - a. mother with COPD
 - b. 25-year pack history (KEY)
 - c. exercise-induced asthmatic episodes
 - d. fever and productive cough for one week

Procedural Rules: Stem Writing

- Use either the best answer or the correct answer format
- Best answer format refers to a list of options that can all be correct
 - Each has an advantage, but one of them is the best
- Correct answer format refers to one and only one right answer
- Use the active voice
- Have your questions peer-reviewed
- Avoid giving unintended cues such as making the correct answer longer in length than the distractors.

SUCF

Procedural Rules: Stem Writing

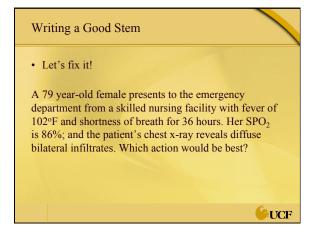
- Ensure that the directions in the stem are clear, and that wording lets the examinee know exactly what is being asked
- Avoid window dressing (excessive verbiage) in the stem
- Word the stem positively; avoid negative phrasing such as "not" or "except"
- Include the central idea and most of the phrasing in the stem
- Avoid giving clues such as linking the stem to the
 answer

Writing a Good Stem

• BAD stem:

Which drug would be best for pneumonia?

- WHY is this a bad stem?
 - Could reflect direct recall rather than critical thinking
 - There are multiple types of pneumonias with various evidence-based treatment approaches
 - There are no data in the question to assist the student in drawing any clinical correlations



Procedural Rules: Options and Distractors

- · Place options in logical or numerical order
- Use letters in front of options rather than numbers
- Keep options independent; don't overlap options
- Keep the length of options fairly consistent.
- Avoid, or use sparingly, the phrase all of the above • NOT used on ANCC exams
- Avoid, or use sparingly, the phrase none of the above
 NOT used on ANCC exams
- Avoid distractors that can clue test-wise examinees:
 Absurd options, formal prompts, or semantic (overly specific or overly general) clues

Procedural Rules: Options and Distractors

- Position the correct option so it appears about the same number of times in each possible position
- Make sure that there is one and only one correct option
- Use plausible distractors.
- · Incorporate common errors of students in distractors
- Use familiar yet incorrect phrases as distractors
- Use true statements that do not correctly answer item
- Distractors that are not chosen by any examinees should be replaced; statistical analysis can show this

UCF

GOOD Question

A 79 year-old female presents to the emergency department from a skilled nursing facility with fever of 102° F and shortness of breath for 36 hours. Her SPO₂ is 86%; and the patient's chest x-ray reveals diffuse bilateral infiltrates. Which action would be best?

- a. admit the patient to a medical/surgical unit and begin levofloxacin (Levaquin®)
- b. repeat the chest x-ray in the emergency department to confirm the suspected diagnosis
- c. discharge the patient and prescribe azithromycin (Zithromax®) 250 mg per day for 10 days
- d. obtain sputum gram stain and culture and sensitivity and begin antibiotic therapy when the results are obtained

BAD Question

A 5 year-old patient presents with otitis media. Which action is best?

- a. prescribe amoxicillin (Trimox®)
- b. educate parents about the use of acetaminophen (Tylenol $\ensuremath{\mathbb{R}}\xspace)$ for fever
- c. educate parents about the use of a spirin (Bayer $\ensuremath{\mathbb{R}}\xspace)$ for fever
- d. educate the parents about the importance of adequate hydration

UCF

SUCF

Validity and Reliability of Tests

- Validity:
 - Does exam measure what it is intended to measure?
 - Was the test properly constructed, administered, and scored?
- What was the correlation coefficient (*r*)?
 - Positive Relationship: High or low scores on one measure are accompanied by high or low scores on another
 - Negative Relationship: High scores on one measure are accompanied by low scores on another measure

Validity and Reliability of Tests

- Reliability:
 - Degree of consistency of test scores
- Measured by Kuder-Richardson Formulas (KR-21)
 KR-21 should be between .5 and .8

Validity and Reliability of Tests • Factors That Lower Reliability of Test Scores: • Too few items • Too many too hard or too easy items • Inadequate test conditions • Poorly written items without discrimination • Scoring is subjective

Item Analysis

- Item Difficulty (P Value):
 - Percentage of group who answered item correctly
 - P = .05 (50%) =Good Discrimination Index
 - Upper limit = 1 (100% answered correctly)
 - Lower limits depends on # of possible responses and probability of guessing correctly
 - If 4 options (A, B, C, D) then P = .25 (possibility of guessing right answer)

UCF

UCF

Item Analysis

- Item Discrimination: Who Knew it and Who Didn't!
 Measured through point biserial correlation
 - Good discrimination item = Point biserial are
 - highly positive for correct answer and negative for distractors
 - Indices > .3 are good; > .4 = VERY good

Item Analysis

- Distractor Evaluation:Evaluate each individually
 - Should appeal to the non-learner
 - Point biserial = 0 = Students didn't select; needs revision/replacement
 - Negative discriminating power occurs when more students in lower group than upper group choose correct answer: Needs revision/replacement!



Item Analysis

- Compute Item Analysis:
 - Mean Score: Average score of test-takers
 - Median: The point at which 50% are higher and 50% are lower
 - Standard Deviation: Measures variability of test scores around the mean
 - Ideal = Item answered correctly by 1/3; answered incorrectly by lower 1/3

UCF

Item Revision

- P values are too high or too low
- Correct answers have low positive or negative point biserials
- Distractors have highly positive point biserials
- Items that correlate < .15 with total test scores should be restructured; probably confusing or nonsensical to test takers

Examples								
1. Which of the follo	wing wou	ld be suggest	ive of heart failt	ıre?				
a. S3 and S4 aud	ible at ape	x						
b. S2 sound louder at base								
c. S1 sound loud	er at apex							
d. S1 and S2 equ	al at Erb's	point						
Point-Biserial =27	Correct A	Answer = A	Total Group =	88.24%				
Distractor Analysis:	А	В	С	D				
Point-Biserial:	27	.27	0.00	0.00				
Frequency:	88%	12%	0%	0%				
				GUCF				

Examples				
2. A patient presents cough? Which new	•			
for this new sympt	om?			
a. acetaminophen	(Tylend	ol®)		
b. acarbose (Prec	ose®)			
c. lisinopril (Zest	ril®)			
d. atorvastatin (L	ipitor®)			
Point-Biserial =61	Correc	et Answer = C	Total Group =	= 76.47%
Distractor Analysis:	Α	В	С	D
Point-Biserial:	59	0.00	0.61	24
Frequency:	6%	0%	88%	6%
				G UCF

References

- Burton, S.J., Sudweeks, R.R., Marrill, P.F., & Wood, B. (1991). How to prepare multiple-choice test items: Guidelines for university faculty. Retrieved from http://testing.byu.edu/info/handbooks/betteritems.pdf
- Fliszar, R. (2009). Using assessment and evaluation strategies. In R.A. Price-Wittman & M. Godshall (Eds.), Certified nurse educator review manual (89-112). Springer Publishing Company: NY.
- Torres, C., Lopes, A.P., Babo, L., S Azevedo, J. (2011). Improving multiple-choice questions. US-China Education Review B1, 1-11.
- Zimmaro, D.M. (2010). Writing good multipl-choice exams. Retrieved from http://ctl.utexas.edu/assets/Evaluation--Assessment/Writing-Good-Multiple-Choice-Exams-04-28-10.pdf

SUCF