

## Learning outcomes

- Describe clinical judgment and its relevance to contemporary nursing practice
- Describe the state of the science related to clinical judgment and teaching for it
- Identify one idea to promote clinical judgment development to work on after attending the conference
- Identify ways that educators and clinical partners can collaborate to foster clinical judgment development in students and practicing nurses

Take a moment and consider....



Why teach clinical judgment?

3



Why are we making this clinical judgment journey?

- 50% of healthcare errors involve a new nurse; 65% of errors involve some lapse in clinical judgment (Brenton, 2018 based on data from 2002)
- Only 23% of newly graduated nurses demonstrate entry-level competencies and practice readiness (Kavanagh & Szweda, 2017).
- Nurses in a critical care environment make 1428 decisions in an hour (Bucknall, 2000)

4

## Defining clinical judgment



(Victor-Chmil, J., 2013)

### Critical thinking

- “A cognitive process used to analyze empirics” that involves intellectual standards
- Not discipline specific

### Clinical reasoning

- The application of critical thinking in practice
- Involves synthesis of knowledge and experience, as well as the social relationship in a caregiving situation.
- Refers to processes that determine the relevance of evidence and how it applies in practice

### Clinical judgment

- “an interpretation or conclusion about a patient’s needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient’s response,” (Tanner, 2006, p. 204)
- The outcome of critical thinking and clinical reasoning

5

## What influences clinical judgment?

- Context of care
- Relationship with the patient
- Background of the nurse
  - Formal professional knowledge
  - Experiential knowledge
    - Personal
    - Clinical experiences
  - Values, ethics, biases



# Clinical judgment and expertise: Benner's Novice to Expert

## Stage 5: The Expert

The Expert nurse has an intuitive grasp of each situation and zeroes in on the accurate region of the problem without wasteful consideration of a large range of unfruitful, alternative diagnoses and solutions. The Expert operates from a deep understanding of the total situation. His/her performance becomes fluid and flexible and highly proficient. Highly skilled analytic ability is necessary for those situations with which the nurse has had no previous experience.

## Stage 1: Novice

The Novice or beginner has no experience in the situations in which they are expected to perform. The Novice lacks confidence to demonstrate safe practice and requires continual verbal and physical cues. Practice is within a prolonged time period and he/she is unable to use discretionary judgement.

<http://www.health.nsw.gov.au/nursing/projects/Documents/novice-expert-benner.pdf>

7

## A journey- not a destination



- Students graduate at the advanced beginner level
- See clinical situations as tasks
  - *Still a little removed from the situation*
- Care for patients tends to be rule based
  - *Standards of Care*
  - *Unit procedures*
  - *Orders*
- Focus on the immediate moment
- Rely on others for help and clinical judgment

8



## Being a novice: Learning to be on the boat

- Terminology
  - *What are they talking about?*
- Theory
  - *Physics- wind, swells, boat design, weather*
- How to stay safe
  - *One hand for the boat*
  - *Tie down your stuff*
- Psychomotor skills
- What is my role?

9



## ...and so it is with our students

- Novices
  - *Rely more on theoretical knowledge because they have such limited experience*
  - *Tend to give all pieces of information in a given situation similar weight*
  - *Have difficulty recognizing*
    - what is most important, salience
    - key patterns in assessment findings
  - *Use mostly analytic reasoning. Slow and cumbersome*
- Think about ways all of these things can be developed

10

## Student background: Experiential knowledge

- Personal and previous professional experience
- Students often believe they bring nothing relevant to nursing school
  - *Help them recognize what they know*
  - *Help them recognize what they don't know*
- Background does have influence, but difficult to identify how (Lasater et al, 2019)
  - *Get to know your students*
- Work on developing professional experiential, practical knowledge of nursing continues through nursing school

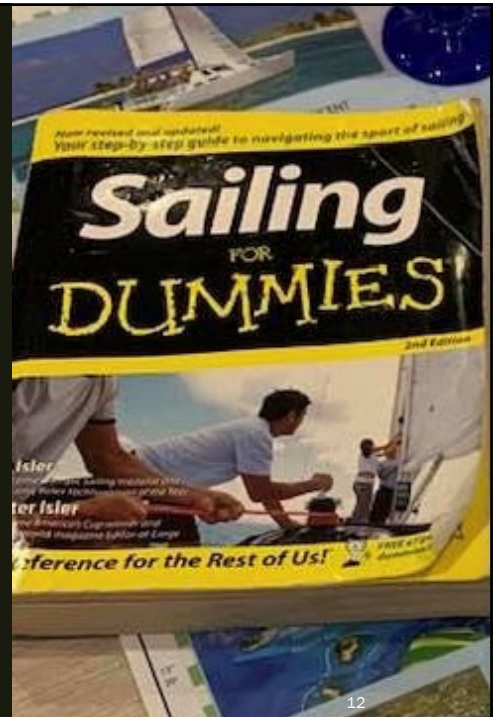
Lasater, Holloway, Lapkin, Kelly, McGrath, Nielsen, Stoyles, Dieckmann, Campbell, 2019; Farcic et al, 2020 .



## Knowledge integration: Theoretical and experiential

- Facilitate use of EBP
  - *Help students recognize what they know and what they need to find out.*
  - *Facilitate independent discovery*
- Facilitate integration of theory with practice
  - *Bring clinical to theory*
  - *Bring theory to clinical*
- Mentor student thinking
  - *Create opportunities for discussion*

Joshua & Ingram, 2020; Wyatt et al, 2020 Vacek & Liesveld, 2019; Klenke-Borgmann, Cantrell, & Mariani, 2020; Tyo & McCurry, 2019; Bristol, 2019; Cantrell, & Mariani, 2020; Hensel & Billings, 2020



## Values, ethics and biases

- Help students to recognize their biases
- Values exploration
- Provide experiences to support development of ethical comportment



## Context: Support in the environment

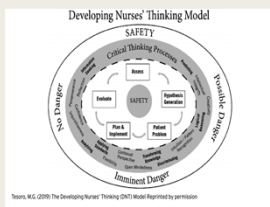
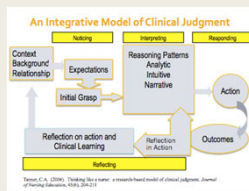
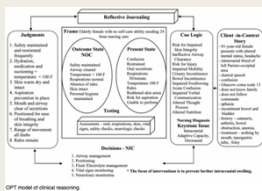
- Emotional climate
- Supports within the environment:
  - *Instructors*
  - *Preceptors*
  - *Interprofessional team*
- Make support appropriate to student developmental level



Teaching strategies to promote clinical judgment

15

## Using models to teach clinical judgment



- OPT (Outcome-Present State-Test) (Pesut & Herman 1998)
  - Bridge between nursing process and development of thinking about nursing
  - Model associated with clinical reasoning
- Tanner Clinical Judgement Model (Tanner, 2006)
  - Intuitive humanistic model
  - Describes factors (context, background, relationship) that influence decision making
  - Based on research of expert nurses. Distinguishes between reasoning processes of experts and more novice nurses
- Developing Nurses Thinking- (Tesoro, 2019)
  - Includes critical thinking and a variety of other cognitive process
  - Significant focus on safety and recognizing danger
- Caputi Model for Teaching Thinking in Nursing- (Caputi, 2020).
  - Incorporates the Tanner CJ Model, critical thinking skills. Benner's Novice to Expert
  - Pragmatic ideas about how to teach for thinking.
- Clinical Reasoning Cycle. (Levett-Jones et al, 2010)
  - Focuses on steps in the process

Tyo & McCurry, 2019; Miraglia & Asselin, 2015) Hensel & Billings, 2019; Bristol, 2019; Caputi, 2019; Deschenes et al, 2019; Jesse, Nielsen, Gonzalez, Lasater & Dickison, 2021)

16



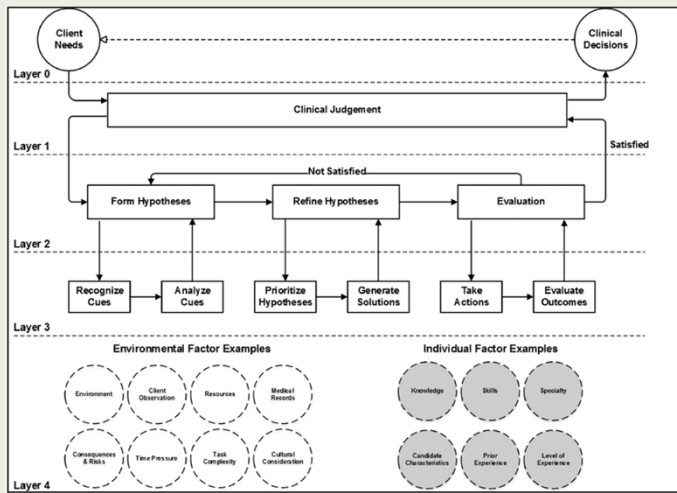


Figure 1. The National Council of State Boards of Nursing-Clinical Judgment Model.

## NCSBN- Clinical Judgment Measurement Model

- Based on 3 thinking/cognition frameworks
  - *Intuitive-humanistic model*
  - *Dual processing reasoning theory*
  - *Information processing model*
- Includes developmental elements that measure analytic thinking, appropriate to the developmental level of the graduate nurse
- Model frames the Next Gen NCLEX and is intended to frame measurement

Dickison, Haerling, & Lasater, 2020; Dickison, Haerling, & Lasater, 2019

## Clinical judgment and nursing process

	Clinical Judgment	Nursing Process and Care planning
<b>Definitions</b>	"An interpretation or a conclusion about a patient's needs, concerns, or health problems, and /or the decision to take action (or not), use of modify standard approaches, or improvise new ones as deemed appropriate by the patient's response." (Tanner, 2006)	A problem solving approach that frames thinking about and patient care. The nursing process is the essential core of practice for the registered nurse to deliver holistic, patient-focused care. It includes assessment, diagnosis, outcomes/planning, implementation, and evaluation elements and forms the basis for nursing practice (ANA, 2015). It is the basis of formal care planning.
<b>Ways to think about the concepts</b>	Clinical judgment is the process of <i>thinking and decision making</i> in real time. It may be implicit, unspoken.	Provides a framework for <i>formal planning</i> nursing care.
<b>Elements</b>	Grounded in phenomenology, a philosophic approach that concentrates on the study of consciousness and the objects of direct experience (Tanner, 2006). <ul style="list-style-type: none"> <li>- Background</li> <li>- Noticing</li> <li>- Interpreting/ Problem identification</li> <li>- Responding</li> <li>- Reflection-in-action</li> <li>- Reflection-on-action</li> </ul>	Grounded in the Nursing Standards of Practice (ANA, 2015): <ul style="list-style-type: none"> <li>- Assessment</li> <li>- Nursing Diagnosis/ Problem identification</li> <li>- Outcomes identification</li> <li>- Planning</li> <li>- Implementation                             <ul style="list-style-type: none"> <li>• Coordination of Care</li> <li>• Health teaching and Health Promotion</li> </ul> </li> <li>- Evaluation</li> </ul>
	Circular with on-going iterations.	Sequential. Includes deliberate evaluation, then re-planning in order to meet patient needs. Framework for Care Planning (Nurse.org, 2018).
<b>Timing</b>	Often in the moment, in real time, ongoing.	Used to plan care over specific time period- clinical day, treatment period, etc.
<b>Things that distinguish it from the other</b>	Integrates the influence of background, relationship with the patient and care context directly into patient care. Includes a reflective component (reflection-on-action) that accounts for the learning in each situation that is applied in subsequent experiences. Provides a way to analyze thinking. Use of Lasater (2007) Clinical Judgment Rubric measures development of the elements of clinical judgment.	The components of the nursing process that frame care planning <b>ARE</b> the Standards of Nursing Professional Practice. Forms the basis for Care Planning. Guides documentation of nursing actions.
<b>Common Synonyms</b>	Clinical decision-making, critical thinking about nursing practice, clinical reasoning.	Care plan, nursing process.

(OHsu course materials, 2018)

## Using a model to teach clinical judgment

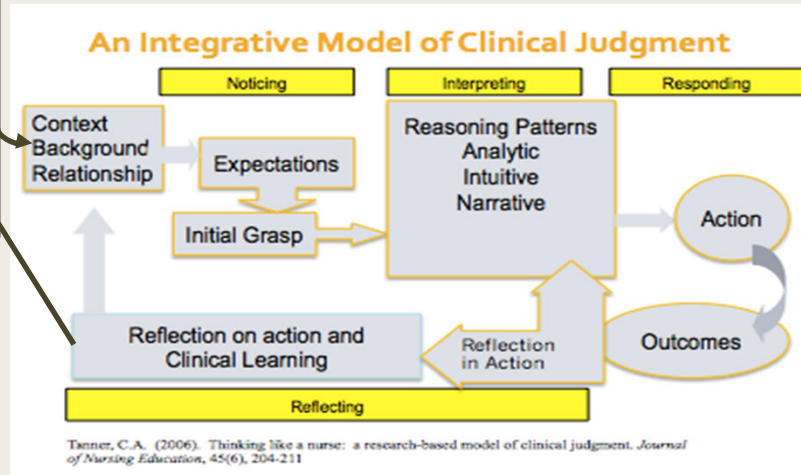
Context of care  
Background

- Knowledge

\*Theoretical

\* Experiential

Relationship with patient



19

## Teaching strategies: Relationship with the patient (client and/or family)



- Developing skills to get to know the person
- Build rapport
- Therapeutic communication
- Motivational interviewing
- Make the connection of knowing the patient to clinical judgment visible

20



## Teaching strategies: Theoretical knowledge

- Manage content
  - *Teach conceptually*
  - *Use prevalent conditions as exemplars*
  - *Identify intended outcomes*
- Manage time to maximize student-faculty interaction
  - *Flip the classroom so students are getting the content ahead of time and class is focused on application*
- Bring clinical experiences to the classroom!
  - *Cases- well supported in the literature*
  - *Simulation- emerging support*

(Bristol, 2019; Hensel and Billings, 2020; Foo et al, 2017; Joshua & Ingram, 2020 Klenke-Borgmann, Cantrell, & Mariani, 2020; Tyo & McCurry, 2018; Vacek & Liesveld, 2019; Wyatt et al, 2021)

21



## Teaching with cases

- Design or select cases that
  - *Illustrate common conditions*
  - *are realistic and ambiguous*
  - *Require students to:*
    - Identify what information they need to provide safe care
    - Identify most salient information and recognize patterns
    - Prioritize care
    - Solve real problems
    - Make clinical decisions
    - Compare and contrast between cases

(Bristol, 2019; Hensel and Billings, 2020; Foo et al, 2017; Joshua & Ingram, 2020 Klenke-Borgmann, Cantrell, & Mariani, 2020; Tyo & McCurry, 2018; Vacek & Liesveld, 2019; Wyatt et al, 2021)

22



## Teaching strategies: Experiential knowledge

- Traditional total direct patient care clinical experiences
  - *Task focused*
  - *Many missed opportunities for learning*
    - (Ironside, McNelis, & Ebright, 2014; Ironside & McNelis, 2010; McNelis et al, 2014)
- Alternative experiences in clinical
  - *Focused experiences for noticing and interpreting and responding*
  - *Concept based learning* (Nielsen, 2016; Lasater & Nielsen, 2009)
  - *Concept mapping.* (Alfayoumi, 2019)
  - *Chunking and scaffolding of clinical learning*
    - One concept or focus per week, with synthesis at the end of the term (Gonzalez, 2018)
- Always look for ways to interact with students in pre-conference, during clinical, in post conference.

23



(Nielsen, 2016; Lasater &amp; Nielsen, 2009)

## Teaching conceptually in clinical: Concept-Based Learning Activities

- Alternative to total patient care
- A way to bring theory to clinical'
- Focus on one key aspect of patient care, a concept
  - Patient assignment
  - Do focused assessment
  - Look for common patterns
  - Identify related problems and interventions
- Debrief
  - Link relevant theory (pathophysiology, pharmacology, nursing science) with care
  - Examine common patterns
  - Compare and contrast between cases
- *Use to structure clinical curriculum over a term* (Gonzalez, 2018)

24

## Simulation and debriefing



(Klenke- Borgmann, Cantrell, Mariani, 2020; Tyo and McCurry, 2019; Kim, Ryu, and Jang, 2019; Bussard, 2016 )

- Many modalities
  - *High fidelity, low fidelity, standardized patient, virtual, on-line*
- Well-researched
  - *Development of aspects of clinical judgement*
  - *Noticing- Salience*
  - *Interpreting- Pattern recognition, prioritization*
  - *Confidence*
- Learning happens debriefing
  - *Debriefing- Use a model*
  - *Pre-briefing- emerging evidence for efficacy*
- And learning in reflection!

25



## Mentoring student thinking



(Billings, 2019; Hensel & Billings, 2020; Nielsen, Lasater, & Stock, 2016; Nielsen 2016; Vacek & Liesveld, 2019)

## Mentoring student thinking: Questioning

- Use a model to frame questions.
- Questions
  - **Noticing**
    - Cue recognition- What did you notice in that patient?
    - Of your assessment findings, what was most important?
    - What else do you need to know?
  - **Interpreting**
    - What do the lab values mean?
    - What patterns do you notice? Why are you seeing these signs and symptoms? What are your biggest concerns?
    - Ask them about the priorities of care and why.
    - Ask them about trends in patient well-being- recovery vs. deterioration.
    - Use these terms, and terms like risk reduction.
    - Make decisions about patient safety very visible in your questions and discussion.
  - **Responding**
    - What will you do for this patient? And why?
  - **Support connections of concepts and care**
    - Ask them about relationships and comparing between patients and concepts
- Make clear links to clinical decision making

27

## Mentoring student thinking: Role modeling

- Observing an expert nurse providing care in a video
  - *Increase in elements of clinical judgment*
    - Knowing what to expect
    - Prioritization
    - Confidence in nursing care
- Modeling of clinical thinking and decision making
- Thinking out loud



(Lasater, Johnson, Ravert, & Rink, 2014; Kelly et al, 2020; Jessee, 2018)

28

## Mentoring student thinking: Verbal and written reflection



(Lasater & Nielsen, 2009b; Tyo & McCurry, 2018 ; Bussard, 2015; Bussard, 2016; Razieh, Somayeh, Ariba, 2018 )

- Structured reflection
  - *Guides analysis of care to understand decisions made*
  - *Promotes student thinking about patient care*
  - *Helps students to deeply explore clinical situations*
- Faculty can provide feedback and mentor thinking
- Can be used for assessment
- **Make reflection a habit of the mind**



## Formal communication

- SBAR
  - *Practice verbal and written*
- SOAP notes
  - *Practice writing about a more static situation*
- Call out the clinical decision making involved

# Time management

- Use time with students carefully
- Find time/ make time to interact with students about thinking and decision making
  - In clinical to process their clinical experiences
  - In the classroom to help them integrate theory with authentic practice



31

## Assessing Clinical Judgment Development: The Lasater Clinical Judgment Rubric

LASATER CLINICAL JUDGMENT RUBRIC Noticing and Interpreting			
Effective	Exemplary	Accomplished	Developing
<b>Effective</b> <b>NOTICING</b> involves: <b>Focused Observation</b>	Focuses observation, appropriately, regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information.	Regularly observes/monitors a variety of data, including both subjective and objective, most useful information is noticed, may miss the most subtle signs	Attempts to monitor a variety of subjective and objective data, but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information
<b>Recognizing Deviations from Expected Patterns</b>	Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment.	Recognizes most obvious patterns and deviations in data and uses these to continually assess.	Identifies obvious patterns and deviations, missing some important information; unsure how to continue the assessment
<b>Information Seeking</b>	Assertively seeks information to plan intervention; carefully collects useful subjective data from observing the client and from interacting with the client and family.	Actively seeks subjective information about the client's situation from the client and family to support planning interventions; occasionally does not pursue important leads.	Makes limited efforts to seek additional information from the client/family; often seems not to know what information to seek and/or pursues unrelated information
<b>Effective</b> <b>INTERPRETING</b> involves: <b>Prioritizing Data</b>	Focuses on the most relevant and important data useful for explaining the client's condition	Generally focuses on the most important data and seeks further relevant information, but also may try to attend to less pertinent data.	Has difficulty focusing and appears not to know which data are most important to the diagnosis; attempts to attend to all available data
<b>Making Sense of Data</b>	Even when facing complex, conflicting or confusing data, is able to (1) note and make sense of patterns in the client's data, (2) compare these with known patterns (from the nursing knowledge base, research, personal experience, and intuition), and (3) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the client's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or complicated cases where it is appropriate to seek the guidance of a specialist or more experienced nurse	Even in simple or common/familiar situations, is able to compare the client's data patterns with those known and to develop/outline intervention plans; has difficulty, however, with even moderately difficult data/situations that are within the expectations for students; inappropriately requires advice or assistance

LASATER CLINICAL JUDGMENT RUBRIC Responding and Reflecting				
Effective	Exemplary	Accomplished	Developing	Beginning
<b>Effective</b> <b>RESPONDING</b> involves: <b>Calm, Confident Manner</b>	Assumes responsibility; delegates team assignments, assesses the client and reassures them and their families	Generally displays leadership and confidence, and is able to correct/calm most situations; may show stress in particularly difficult or complex situations	Is tentative in the leader's role; reassures clients/families in routine and relatively simple situations, but becomes stressed and disorganized easily	Except in simple and routine situations, is stressed and disorganized; lacks control; making clients and families anxious/less able to cooperate
<b>Clear Communication</b>	Communicates effectively; explains interventions; calms/reassures clients and families; directs and involves team members, explaining and giving directions; checks for understanding.	Generally communicates well; explains carefully to clients, gives clear directions to team; could be more effective in establishing rapport	Shows some communication ability (e.g., giving directions); communication with clients/families/team members is only partly successful; displays caring but not competence	Has difficulty communicating; explanations are confusing; directions are unclear or contradictory; and clients/families are made confused/anxious, not reassured
<b>Well-Planned Intervention/Flexibility</b>	Interventions are tailored for the individual client; monitors client progress closely and is able to adjust treatment as indicated by the client response	Develops interventions based on relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions based on the most obvious data; monitors progress, but is unable to make adjustments based on the patient response	Focuses on developing a single intervention addressing a likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur
<b>Being Skilled</b>	Shows mastery of necessary nursing skills	Displays proficiency in the use of most nursing skills; could improve speed or accuracy	Is hesitant or ineffective in utilizing nursing skills	Is unable to select and/or perform the nursing skills
<b>Effective</b> <b>REFLECTING</b> involves: <b>Evaluation/Self-Analysis</b>	Independently evaluates/analyzes personal clinical performance, noting decision points, deliberating alternatives and accurately evaluating choices against alternatives	Evaluates/analyzes personal clinical performance with minimal prompting; primarily major events/decisions; key decision points are identified and alternatives are considered	Even when prompted, briefly verbalizes the most obvious evaluations; has difficulty imagining alternative choices; is self-protective in evaluating personal choices	Even prompted evaluations are brief, cursory, and not used to improve performance; justifies personal decisions/choices without evaluating them
<b>Commitment to Improvement</b>	Demonstrates commitment to ongoing improvement; reflects on and critically evaluates nursing experiences; accurately identifies strengths/weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance; reflects on and evaluates experiences; identifies strengths/weaknesses; could be more systematic in evaluating weaknesses	Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and improve performance but tends to state the obvious and needs external evaluation	Appears uninterested in improving performance or unable to do so; rarely reflects; is uncritical of him/herself; or overly critical (given level of development); is unable to see flaws or need for improvement

(Lasater, 2007)

32





## Research of teaching for clinical judgement

- More strategies described in the literature than formally measured in research studies
- Challenges with interventions
- Challenges with measurement of clinical judgement
  - *Much self-report*
- Need for better understanding of CJ development at graduation for smoother hand-off of CJ education during transition to practice

33

## Taking the plunge:

What ideas do you have for extending clinical judgment teaching and learning?

- *In your own education practice?*
- *At your school?*



34

## Bringing this boat into port....

- Adopt and use a model to frame this work
  - *Message consistently*
- Adapt and design great learning activities focused specifically on clinical judgment development
  - *AND TEST them!*
- Take a developmental approach
  - *"Level the plan to student development*
  - *Chunk and scaffold learning*
- Teach habits of thought
  - *Build thinking development into every student encounter*
- Mentor student thinking
- Manage time to get learning desired



Wishing you calm waters and smooth sailing as you extend your clinical judgement teaching journey...

**Bon voyage!**

Questions ?  
nielsena@ohsu.edu

## References

- Alfayoumi, I. (2019). The impact of combining concept-based learning and concept-mapping pedagogies on nursing students' clinical reasoning abilities. *Nurse Education Today*, 72, 40-46.
- Ashley, J. & Stamp, K. (2014). Learning to thinking like a nurse: The development of clinical judgment in nursing students. *Journal of Nursing Education*, 53, 9.
- Benner, P. (2001). *From Novice to Expert: Excellence and Power in Nursing Practice* (Commemorative Ed.). Upper Saddle River, NJ: Prentice Hall.
- Billings, D. & Kowalski, K. (2019). Teaching nurses to make clinical judgments that ensure patient safety. *Journal of Continuing Education in Nursing*, 50, 7.
- Brenton, A. (2018). Next generation NCLEX project (webinar). Chicago, IL: National Council of State Boards of Nursing. Retrieved from <https://www.ncsbn.org/13064.htm>.
- Bristol, T. (2019). Next Gen learning for the new National Council licensure examination for registered nurses. *Teaching and Learning in Nursing*, 14, 309-311.
- Brussard, M. (2015). The nature of clinical judgment development in reflective journals *Journal of Nursing Education*, 54, 8, 451-454.
- Brussard, M. (2016). Self-reflection of video-recorded high-fidelity simulations and development of clinical judgment. *Journal of Nursing Education*, 55, 9, 522-527.
- Caputi, L. (2019). Reflections on the next generation NCLEX with implications for nursing programs. *Nursing Education Perspectives*, 40,1, 2-3.
- Caputi, L. (2020). *Think Like a Nurse: A Handbook*. Rolling Meadow, IL: Windy City Publishers.
- Deschenes, M. et al (2019). Theoretical foundations of educational strategies used in e-learning environments for developing clinical reasoning in nursing students: A scoping review. *Nursing Education in Practice*, 41, 102632.
- Dickison, P., Haerling, K. A., & Lasater, K. (2019). The National Council of State Boards of Nursing Clinical Judgment Model. *Journal of Nursing Education*, 58(2), 72-78.
- Dickison, P., Haerling, K. A., & Lasater, K. (2020). NCBSN Clinical Judgment Measurement Model clarification. *Journal of Nursing Education*, 59(7), 365.
- Eisenmann, N. (2021). An innovative clinical concept map to promote clinical judgment in nursing students. *Journal of Nursing Education*, 60, 3, 143-149.

## References

- Farcic, N. Barac, I., Lovric, R., Racaric, S., Gvozdanovic, Z, Ilakovac, V. (2020a). The influence of self-concept on clinical decision-making in nurses and nursing students: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 17, 3059.
- Farcic, N. Barac, I., Pluzaric, J., Ilakovac, V., Pacaric, S., Gvozdanovic, Z, Lovric, R., (2020b). Personality traits of core self-evaluation as predictors on clinical decision-making in nursing profession. *Plos One*, May 18, 2020.
- Fedko, A., Dreifuferst, K. (2017). Examining the relationship between clinical judgement and nursing actions in prelicensure students. *Nurse Educator*, 42, 1, 47-50.
- Foo, M., Tang, L., Vimala, R., Chui, P., Chong, M. (2017). Educational intervention for clinical judgment skills. *The Journal of Continuing Education in Nursing*, 48, 8, 347-352.
- Fugate, S., Hampton, D., Ashford, K., Welsh, D., Marfell, J. (2020). Effect of clinical reasoning seminars on medical-surgical specialty HESI examination score success. *Nurse Educator*, doi:10.1097/NNE.0000000000000963.
- Gonzalez, L. (2018). Teaching clinical reasoning piece by piece: A clinical reasoning concept-based learning method. *Journal of Nursing Education*, 57, 12, 727-735.
- Hensel, D., Billings, D., (2020). Strategies to teach the NCSBN Clinical Judgement Model. *Nurse Educator*, 45, 3, 128-132.
- Ironside, P., McNelis, A., Ebright, P. (2014). Clinical education in nursing: Rethinking learning in practice settings. *Nursing Outlook*, 62(3), 185-191.
- Ironside, P. & McNelis, A. (2010). Clinical education in prelicensure nursing programs: Findings from a national study. *Nursing Education Perspectives*, 31(4), 264-265.
- Jessee, M. (2018). Pursuing improvement in clinical reasoning: The integrated clinical education theory. *Journal of Nursing Education*, 57, 1.
- Joshua, B & Ingram, A. (2020). An investigation into the impact of approaches to learning on final-year students nurses' clinical decision-making. *Nurse Education in Practice*, 49, 102918.
- Kavanagh, J., & Szweda, C. (2017). A crisis in competency: The strategic and ethical imperative to assessing new graduate nurses' clinical reasoning. *Nursing Education Perspectives*, 38, 2, 57-62.
- Kelly, M., Lapkin, S., McGrath, B., Holloway, K., Nielsen, A., Stoyles, S., Dieckmann, N., Lasater, K. (2020). A blended learning activity to model clinical judgement in practice: A multi-site evaluation. *Clinical Simulation in Nursing*, available online April, 2020. doi.org/10.1016/j.ecns.2020.03.006.
- Klenke-Borgmann, L., Cantrell, M, Mariani, B. (2020). Nurse Educators' guide to clinical judgment: A review of the conceptualization, measurement, and development. *Nursing Education Perspectives*, 41, 4.
- Kim, H., Ryu, S., Jang, K. (2019). Effect of structured pre-simulation preparation and briefing on student's self-confidence, clinical judgement, and clinical decision-making in simulation. *Contemporary Nurse*, 55, 4-5, 317-420.

## References

- Krishnan, P. (2018). A philosophical analysis of clinical decision making in nursing. *Journal of Nursing Education*, 67,2, 73-78.
- Lasater, K., Holloway, K., Lapkin, S., Kelly, M., McGrath, B., Nielsen, A., Stoyles, S., Dieckmann, N., Campbell, M. (2019). Do prelicensure nursing students' backgrounds impact what they notice and interpret about patients? *Nurse Education Today*, March, 2019.
- Lasater, K., Johnson, E, Ravert, P., & Rink, D. (2014). Role modeling clinical judgment for an unfolding older adult simulation. *Journal of Nursing Education*, 53, 257-264.
- Lasater, K. (2007). High-fidelity simulation and the development of clinical judgment: Students' experiences. *Journal of Nursing Education*, 46(6), 269-276.
- Lasater, K. & Nielsen, A (2009a). The influence of concept-based learning activities on students' clinical judgment development. *Journal of Nursing Education*, 48, 8, 441-446.
- Lasater, K. & Nielsen, A. (2009b). Reflective journaling for clinical judgment development and evaluation. *Journal of Nursing Education*, 48, 1, 40-44.
- Leijser, J. & Spek, B. (2021). Level of clinical reasoning in intermediate nursing students explained by education year and days of internships per healthcare branches: A cross-sectional study. *Nurse Education Today*, 96, 104641. Doi: <https://doi.org/10.1016/j.nedt.2020.104641>.
- Levett-Jones, T., Hoffman, K., Dempsey, J., Jeong, S., Noble, D., Norton, C., Roche, J., Hickey, N. (2010). The 'five rights' of clinical reasoning: An educational model to enhance nursing students' ability to identify and manage clinically 'at risk' patients. *Nurse Education Today*, 30(6), 515-520. doi:10.1016/j.nedt.2009.10.020.
- Manetti, W. (2019). Sound clinical judgment in nursing: A concept analysis. *Nursing Forum*, 54, 102-110.
- McNelis, A., Ironside, P., Ebricht, P., Dreifuerst, K., Zvonar, S., & Conner, S. (2014). Learning nursing practice: A multisite, multimethod investigation of clinical education. *Journal of Nursing Regulation*, 4, 4, 30-35.
- Marino, M., Andrews, K., Ward, J. (2020). Clinical decision making at the bedside. *Nursing Clinics of North America*, 55, 29-37.
- Melin-Johansson, C., Palmqvist, R., Ronnberg, L. (2017). Clinical intuition in the nursing process and decision-making: A mixed-studies review. *Journal of Clinical Nursing*, 26, 3936-3949.
- Merisier, S., Larue, C., Boyer, L. (2018). How does questioning influence nursing students' clinical reasoning in problem-based learning? A scoping review. *Nurse Education Today*, 65, 1008-115.
- National League for Nursing (NLN) (2015). Debriefing across the curriculum: A living document from the National League for Nursing. Retrieved from: <http://www.nln.org/docs/d>
- Nibbelink, C. & Brewer, B. (2017). Decision-making in nursing practice: An integrative literature review. *Journal of Clinical Nursing*, 27, 917-928.

## References

- Nielsen, A., Noone, J., Voss, H., Mathews, L. (2013). Preparing nursing students for the future: An innovative approach to clinical education. *Nurse Education in Practice*, 13, 4, 301-309.
- Nielsen, A. (2016). Concept-based learning in clinical experiences: Bringing theory to clinical education for deep learning. *Journal of Nursing Education*, 55, 7, 365-271.
- Nielsen, A., Lasater, K., Stock, M. (2016). A framework to support preceptors' evaluation and development of new nurse' clinical judgment. *Nurse Education in Practice*, 19, 84-90.
- Nielsen, A. (2009). Concept-based learning activities using the clinical judgment model as a foundation for clinical learning. *Journal of Nursing Education*, 48(6), 350-354.
- Nielsen, A., Stragnell, S., Jester, P. (2007) Guide for Reflection Using the Clinical Judgment Model. *Journal of Nursing Education*, 46, 11, 513-516.
- Pesut, D., & Herman, J. (1998). OPT: Transformation of nursing process for contemporary practice. *Nursing Outlook*, 46, 29-36. doi:10.1016/S0029-6554(98)90022-7.
- Philips, B., Morin, K., Valiga, T. (2021). Clinical decision making in undergraduate nursing student: A mixed methods study. *Nurse Education Today*, 97, 104676. <https://doi.org/10.1016/j.nedt.2020.104676>
- Pinnock, R., Anakin, M., Lawrence, J., Chignell, H., Wilkinson, T. (2019). Identifying developmental features in students' clinical reasoning to inform teaching. *Medical Teacher*, 41, 3, 297-302.
- Razieh, S., Somayeh, G., Fariba, H. (2018). Effects of reflection on clinical decision-making of intensive care unit nurses. *Nurse Education Today*, 66, 10-14.
- Tanner, C. (2006). Thinking like a nurse: a research-based model of clinical judgment. *Journal of Nursing Education*, 45(6), 204-211.
- Tesoro, M et al (2021). Effects of Clinical Reasoning Prompts on Nursing Students' Clinical Judgment for a Patient Experiencing Respiratory Distress. *International Journal of Nursing Knowledge*, 32, 1.
- Tower, M., Watson, B., Bourke, A., Tyers, E., Tin, A. (2019). Situation awareness and the decision-making processes of final-year nursing students. *Journal of Clinical Nursing*, 28, 3923-3934.
- To, M. & McCurry, M. (An integrative review of clinical reasoning teaching strategies and outcome evaluation in nursing education. *Nursing Education Perspectives*, 40, 1.
- Vacek, J. & Liesveld, J. (2019). Teaching concepts to nursing students using model case studies, the Venn diagram, and questioning strategies. *Nursing Education Perspectives*. Doi: 10.1097/01.NEP.0000000000000514.
- Victor-Chmil, J. (2013). Critical thinking versus clinical reasoning, versus clinical judgment: Differential diagnosis. *Nurse Educator*, 38, 1, 34-36.
- Wright, J., Scardaville, D. (2021). A nursing residency program: A window into clinical judgment and clinical decision making. *Nurse Education in Practice*, 50, 102931. Doi: <https://doi.org/10.1016/j.nepr.2020.102931>.
- Wyatt, T., Baich, V., Buoni, C., Watson, A., Yuriscic, V. (2021). Clinical reasoning: Adapting teaching methods during the COVID-19 pandemic to meet student learning outcomes. *Journal of Nursing Education*, 60, 1, 48-61.