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New Approaches to Case Studies to Prepare Student Nurses for Next-Generation NCLEX and Clinical Practice

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Abstract

Novice nurses struggle to make clinical judgments at the same level as their more experienced counterparts. The National Council of State Boards of Nursing (NCSBN) designed the Clinical Judgment Measurement Model (CJMM) to better measure decision-making. Nursing educators must adapt their teaching methods to prepare students to become self-regulated thinkers and better utilize clinical judgment in practice. The CJMM will feature heavily in the Next Generation NCLEX (NGN) beginning in April, 2023. Two courses, Health & Illness Concepts III and Concept Synthesis, have been at the forefront of helping students develop clinical judgment and prepare for NGN. In this poster, we discuss two dynamic approaches to case studies that meet the objectives of the CJMM. We have seen increased collaboration and greater student satisfaction with these new variations while preparing our students for NGN and the challenges of nursing practice.

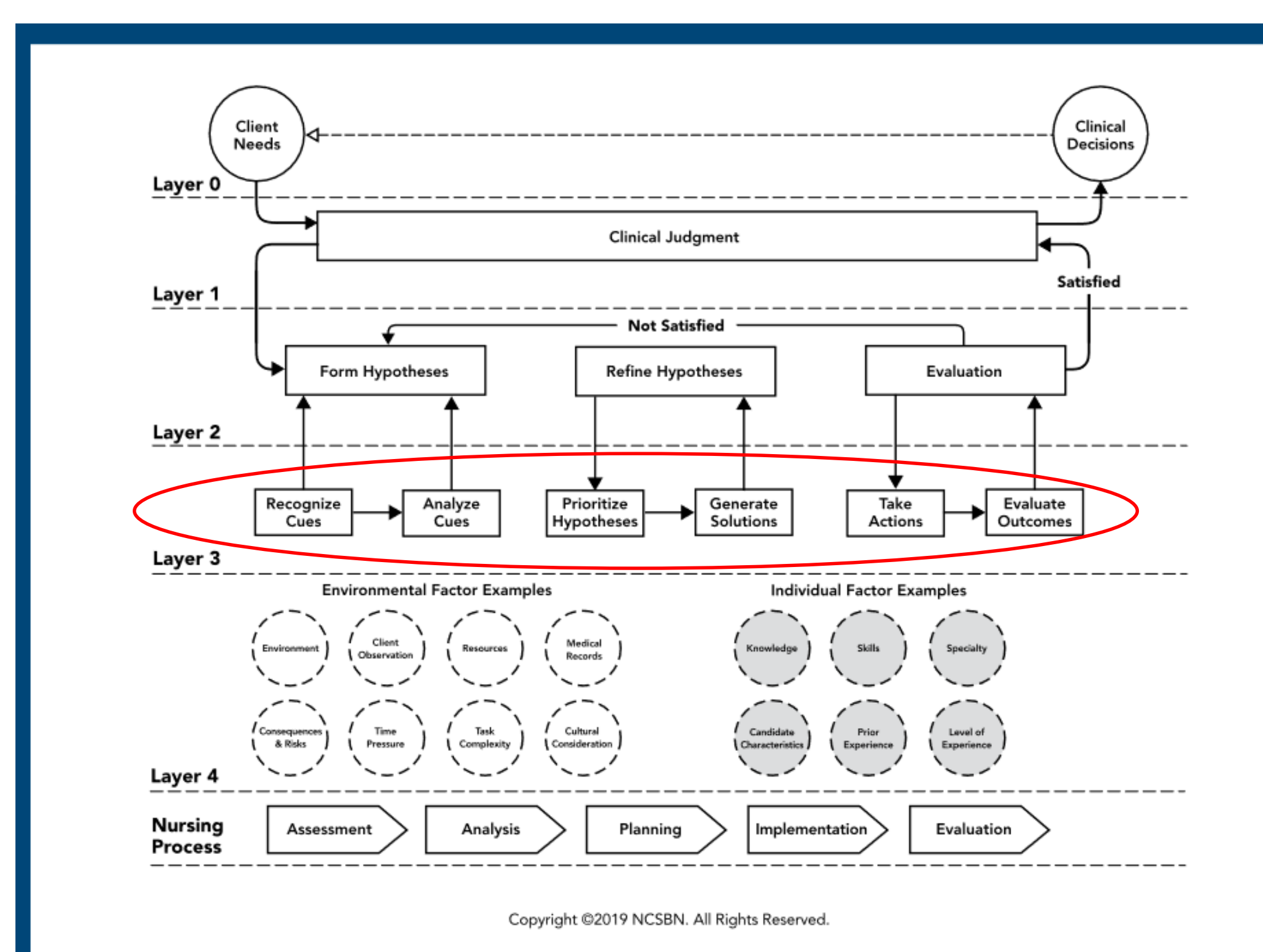
Objectives

- Identify key tenets of the CJMM which demonstrates students' ability to assimilate basic knowledge and then generate and modify hypotheses and interventions to fit a specific patient's presentation
- Discuss the flipped classroom approach wherein faculty use pre-recorded lectures and devote class time to applying knowledge to real word nursing scenarios
- Examine how novel case study approaches such as "choose your own adventure" and "a day in the life of an RN" help students develop clinical judgment and prepare for NGN

Clinical Judgment Measurement Model

The NCSBN Clinical Judgment Measurement Model (CLMM):

- Directly measures the ability of the student to use clinical judgment
- NGN will feature 80% legacy application- and analysis-level questions and 20% CJMM-based evolving and stand-alone case studies
- New question modalities assess students' ability to:
 - Recognize cues
 - Analyze cues
 - Prioritize hypotheses
 - Generate solutions
 - Take actions
 - Evaluate outcomes
- NGN case studies highlight how individual and environmental factors interplay, making the client scenarios and students' responses more realistic



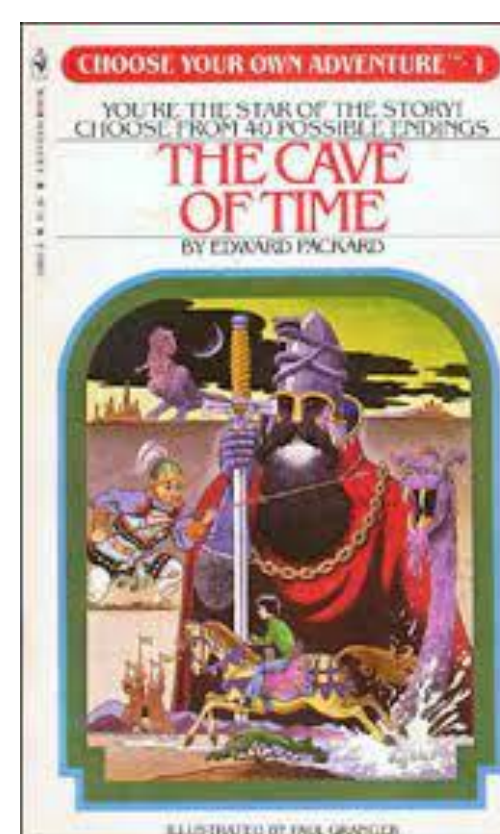
Bringing the CJMM to the Classroom

Two courses, Health & Illness Concepts III (Level 4) and Concept Synthesis (Level 5), have been at the forefront of helping students develop clinical judgment and prepare for NGN. Using a flipped classroom approach, we pre-record all lectures and devote class time to applying knowledge to real-world nursing scenarios.

We utilize two variations on traditional case studies that align with the goals of the CJMM: "choose your own adventure" (where students see the consequences of incorrect choices in real time) and a "day in the life of a nurse" (where students follow multiple patients throughout the course of a 12-hour hospital shift and answer legacy and NGN-style questions as multiple cases unfold). We have seen increased collaboration and greater student satisfaction with these new variations while preparing our students for NGN and the challenges of nursing practice.

Choose Your Own Adventure

Choose your own adventure (CYOA) case studies evolve based on the judgments students make for each question. With CYOA cases, students see in real time the consequences of their decisions. CYOA cases



- Allow students to work through the layers of the CJMM
- Generate interest as the choices students make change the client's story (just as in real life)
- Provide opportunities to learn from both errors and correct answers
- Can be made using a PowerPoint (PPT) format (low cost) wherein answers choices are hyperlinked to allow students to immediately see what happens next
 - In the example below, each colored bubble represents a PPT slide
- CYOA case studies take more time to prepare than a traditional case study

The scenario: G.P. is a 60-year-old retired businessman who is married and has 3 grown children. He began feeling changes in his chest about 10 days ago. He has hypertension and a 3-year history of angina pectoris. During the past week, he has had frequent episodes of mid-chest discomfort which responds to sublingual nitroglycerin. He states he has also experienced increased fatigue. A cardiac catheterization done several years ago revealed 50% stenosis of the right coronary artery and 50% stenosis of the left anterior descending coronary artery. He tells you that both his mother and his father had coronary artery disease. He is currently taking amlodipine, metoprolol, atorvastatin, and aspirin 81 mg/day. He says he spends his days watching television, with some occasional yard work. He has gained 25 lb (11.3 kg) since retiring and admits that he is overweight.

The question: What other priority question would you want to ask?

- Did you take your hypertension medication today?
- Is there any other history of heart disease in your family?
- What is your understanding of coronary artery disease?
- Does the chest pain occur with exercise or at rest?

If the student selects A, B, or C, they are taken to a PPT slide stating: "While this is an important question, **what's important right now** is distinguishing if the patient is having stable vs. unstable angina in order to help decide the best course of action."

If the student selects D, they are taken to a PPT slide stating: "**Correct! Determining the cause of the pain will help in deciding what is the next step in this patient's course of treatment.**" Additional open-ended questions are provided on the slide

A Day in the Life of an RN

The day in the life of an RN (DITL-RN) case study follows the nurse caring for two to three patients over a 12 hour shift. Each patient scenario is an evolving case study and presents the student with legacy and NGN questions using the CJMM. The table below is an excerpt of how the nurse follows their two patients through the shift

Time	Patient 1: Mrs. Yazzie, a 69-year old female admitted 2 days ago for septic shock secondary to pneumonia. She is intubated and has an acute kidney injury	Patient 2: Mr. Rafael, a 56-year old male with a history of IV-drug abuse admitted for sepsis, altered mental status, and respiratory failure. Echocardiography revealed vegetations on the tricuspid and mitral valves
0700		RN receives report: the patient is in a respiratory acidosis with hypoxemia and is now on a mechanical ventilator. The patient shows track marks on his arms and purple, pea-sized spots on his fingers and toes.
		NGN Bow-tie question (see below)
0720	RN receives report: the patient has hypoxemic and hypercapnic respiratory failure, is oliguric, and is in a mixed respiratory and metabolic acidosis. She's on a mechanical ventilator and needs continuous renal replacement therapy (CRRT)	
0835		RN assesses patient and determines he is still hypoxic, requiring changes to the vent settings, and - based on his valvular vegetations – detects a heart murmur
0925	Ventilator changes are made to address the patient's hypercapnia while the patient awaits initiation of CRRT. The patient also requires immediate correction of their hyperkalemia	

The DITL-RN case study has Mr. Rafael developing oliguria from a renal artery occlusion secondary to an arterial thrombus and then the nurse assuming care for Ms. Yazzie as a one-to-one patient while beginning CRRT

Bow-tie question: Considering Mr. Rafael's admitting diagnosis and symptoms, what do you think is happening and what are your priorities? Complete the following bowtie question from information in the table below (Recognize cues, analyze cues, prioritize hypotheses, generate solutions, take actions, and evaluate outcomes)

Action to take → Condition most likely experiencing ← Parameter to monitor
Action to take ← Parameter to monitor

Action to take (choose 2)	Condition most likely experiencing (choose 1)	Parameter to monitor (choose 2)
Administer tissue plasminogen activator (tPA)	Acute decompensated heart failure	Arterial blood gases
Administer NSAIDs	Ischemic stroke	Complete blood count
VAP Prevention Bundle	Pulmonary embolus	Potassium level
Start tube feeding	Infective endocarditis	Daily weight
Administer broad-spectrum antibiotic	Pericarditis	Electroencephalogram (EEG)

Feedback from Students

Below are excerpts from the course evaluations completed by students at the end of the semester which speak to the benefits of the flipped classroom design and the CYOA and DITL-RN case studies:

- "[Using] prerecorded lectures and reinforcing the material in class was very beneficial."
- "The case studies are very fun and the engagement of being in class is super helpful in retaining the information."
- "The choose your own path patients are fun and educational. I can't thank you enough for incorporating different learning strategies for those who learn differently, I never learned more nor had so much fun learning nursing."
- "The [recorded lectures] and case studies contributed most to my learning. I liked the choose your adventure activities as one thing I struggle with internally is if I make the wrong decision as a nurse, [I need to know] what the consequences could be. I like that it gives you possibilities so I can remember what is the right decision based on the patient's condition."
- "I loved the online lectures because I was able to go back and watch them as many times as I needed to. I loved the a-day-in the life [case studies] for what we were learning at the time in order to really get into that nurse mentality."

What's Next?

NGN debuts in April, 2023 and our current Level 5 students will be the first cohort to take the redesigned NCLEX in order to become licensed to practice nursing in New Mexico. Before they graduate, students must pass the Health Education Systems Incorporated (HESI) NCLEX Readiness (Exit) Exam. The HESI Exit is a standardized 160-question exam which follows the NCLEX/NGN blueprint. HESI Exit score reports will provide faculty with metrics on how students performed on both legacy and NGN questions. CON Prelicensure Faculty can utilize these data to reflect on: areas of strength and opportunities for improvement in instructional design; how we incorporate legacy and NGN formats into our lectures, class activities, and evaluations (exams); and further development of new approaches to case studies utilizing the CJMM.

Reference

National Council of State Boards of Nursing (n.d.) *NCSBN Clinical Judgment Model*. Retrieved from: <https://ncsbn.org/clinical-judgment-measurement-model>

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