Fostering Clinical Decision-Making Using Screen-Based Simulation Aligned with the NCSBN Clinical Judgment Measurement Model

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Conflicts of Interest and Disclosures

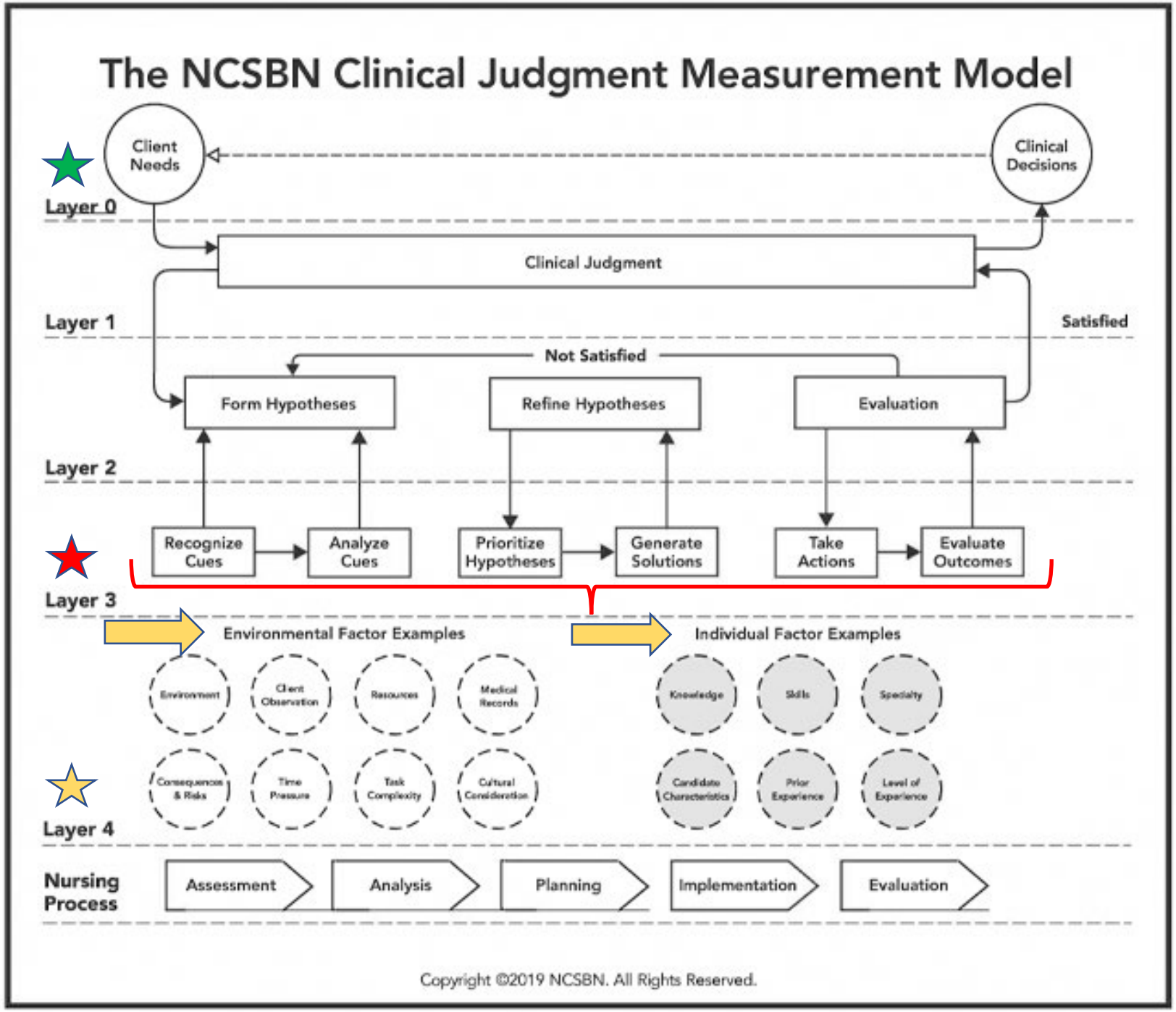
Student and faculty access to the Sentinel U® Prioritization of Care SBS products were provided in-kind as part of a Sentinel U® Nursing Simulation Research Grant (SUNSRG).

Background

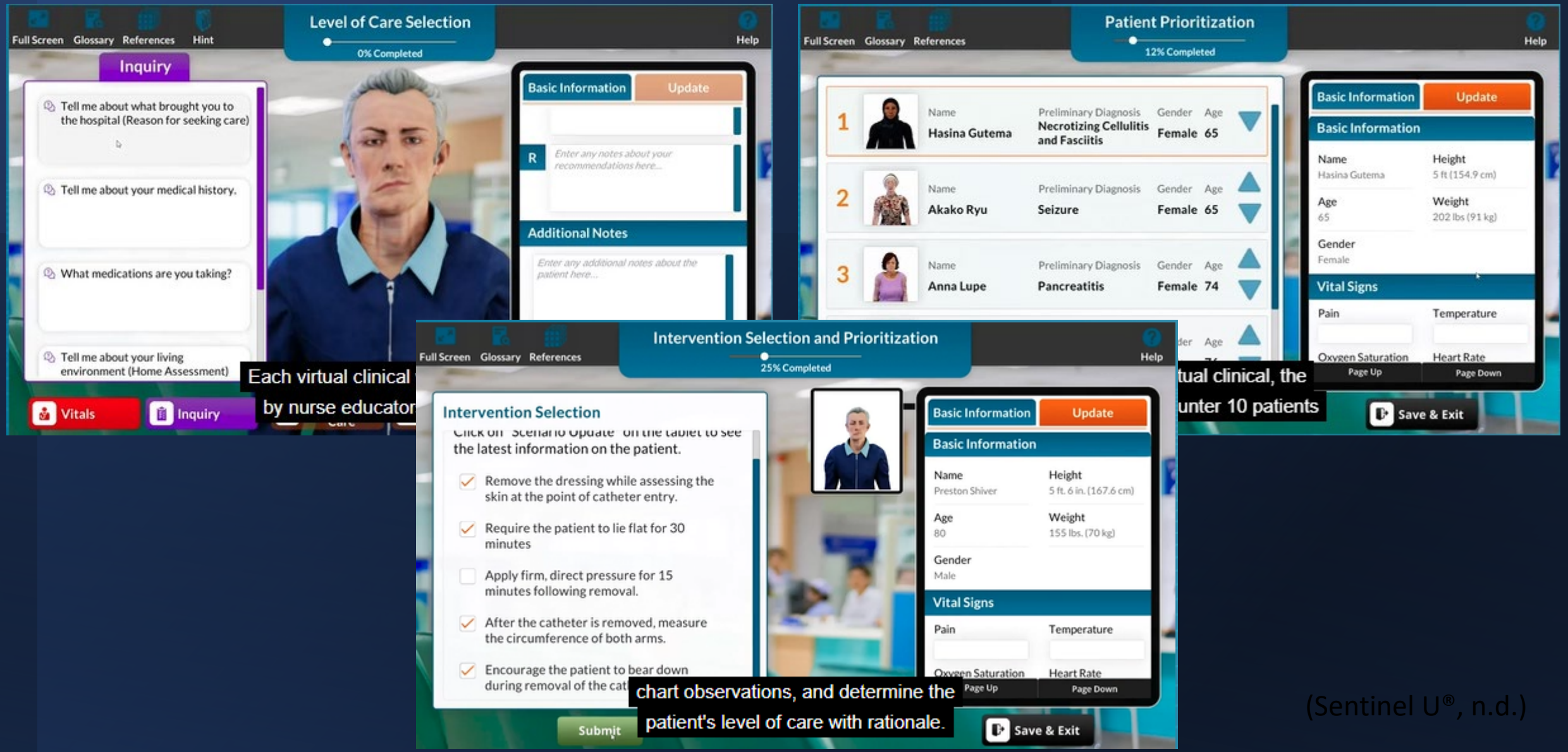
Purpose

To determine if commercially designed SBS can be used to foster clinical judgment development in alignment with the NCSBN CJMM in prelicensure nursing students to help bridge gaps in the transition to professional practice

Conceptual Framework



Sentinel U® POC Specialty SBS



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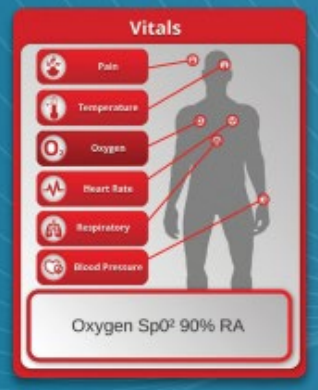
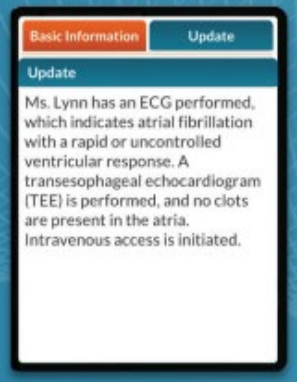
Sentinel U® POC Specialty SBS

Recognize Cues



Learners are prepared to **recognize cues** by observing vital signs.

Analyze Cues

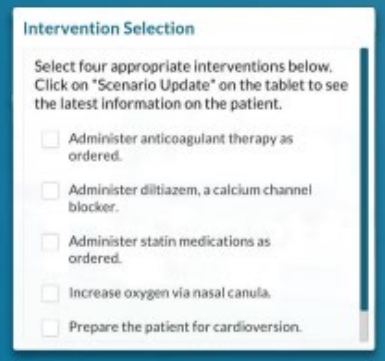


Learners must **analyze cues** found within the patients' health update.

Prioritize Hypotheses

Learners use their clinical judgement to **prioritize hypotheses** on which patients' care to prioritize.

Generate Solutions

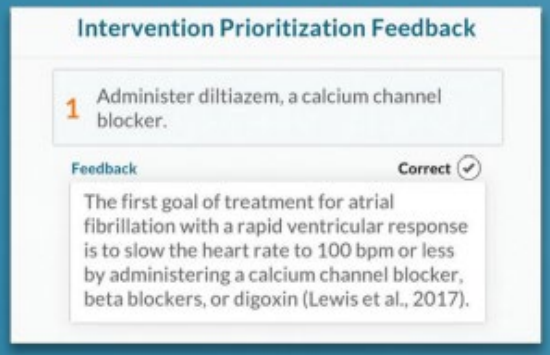


Learners make clinical decisions and **generate solutions** related to patient care.

Take Action

Learners identify priority of health interventions to successfully **take action.**

Evaluate Outcomes



Following their interventions, learners examine efficacy of treatment to **evaluate outcomes.**

Learners evaluate achievement of outcomes in EMPOWER™ Debrief.

(Sentinel U®, n.d.)

Research Question

Do prelicensure nursing students demonstrate increased simulation scores across Layer 3 elements of the NCSBN CJMM after completing targeted commercially developed screen-based prioritization of care simulations?

Methods

Intervention

- Sentinel U® Prioritization of Care Screen-Based Simulations Aligned with NCSBN CJMM
  - Adult Medical (Week 4)
  - Geriatric (Week 9)

Sample

- Junior-level prelicensure nursing students enrolled in first adult medical-surgical course
- *n* = 68

Measures

- Level of Care (Recognize & Analyze Cues)
- Patient Prioritization (Prioritize Hypotheses)
- Intervention Selection (Generate Solutions)
- Intervention Prioritization (Take Action)

Data Analysis

- Skewness & Kurtosis
- Descriptive Statistics
- Paired *t*-tests
- Cohen's *d*

Results

t-test Results Comparing Mean of the Difference in Student Performance Between Medical and Geriatric SBS

	CJMM Alignment	*M Difference*	Two-sided *p*	Cohen's *d*	Interpretation
Simulation Completion Time (Minutes)	N/A	-0:31	< .001	-0.763	Completed faster
Level of Care Selection (# Correct/10)	Recognize & Analyze Cues	-0.046	.063	-0.229	Decreased score
Patient Prioritization (# Correct/10)	Prioritize Hypotheses	-0.137	.001	-0.440	Decreased score
Intervention Selection (# Correct/40)	Generate Solutions	0.031	.001	0.404	Increased score
Intervention Prioritization (# Correct/40)	Take Action	0.087	.012	0.313	Increased score
Simulation Total Score (Sum of # Correct/100)	N/A	0.028	.096	0.204	Increased score

Additional Results: Adult Medical SBS

Adult Inpatient Medical Unit = 45.7% prioritized all five patients from highest (1) to lowest (5) priority order

- 72.9% selected highest priority patient (COPD, SOB, infection)
- > 60% placed patients #2-5 in correct ranking slot

Medical Intensive Care Unit = 15.7% correctly prioritized all five patients

- 48.6% selected highest priority patient (chest pain, signs of MI, history of open-heart surgery)
- 24-43% placed patients #2-5 in correct ranking slot
- Recognized cardiac as system classification, but unsure how to prioritize MI, bradycardia, atrial fibrillation

Additional Results: Geriatric SBS

Home Healthcare = 16.2% prioritized all five patients from highest (1) to lowest (5) priority order

- 67.6% selected highest priority patient (TIA, risk for stroke/injury)
- 35-40% placed patients #2-5 in correct ranking slot
- Difficulty with palliative or end-of-life care

Inpatient Rehabilitation Unit = 2.8% correctly prioritized all five patients

- 59.7% selected highest priority patient (new brain tumor, seizures, risk for injury)
- 15-30% placed patients #2-5 in correct ranking slot
- Unsure of how to prioritize stable patient s/p amputation needing therapeutic communication & support

Conclusions

Student Performance Outcomes

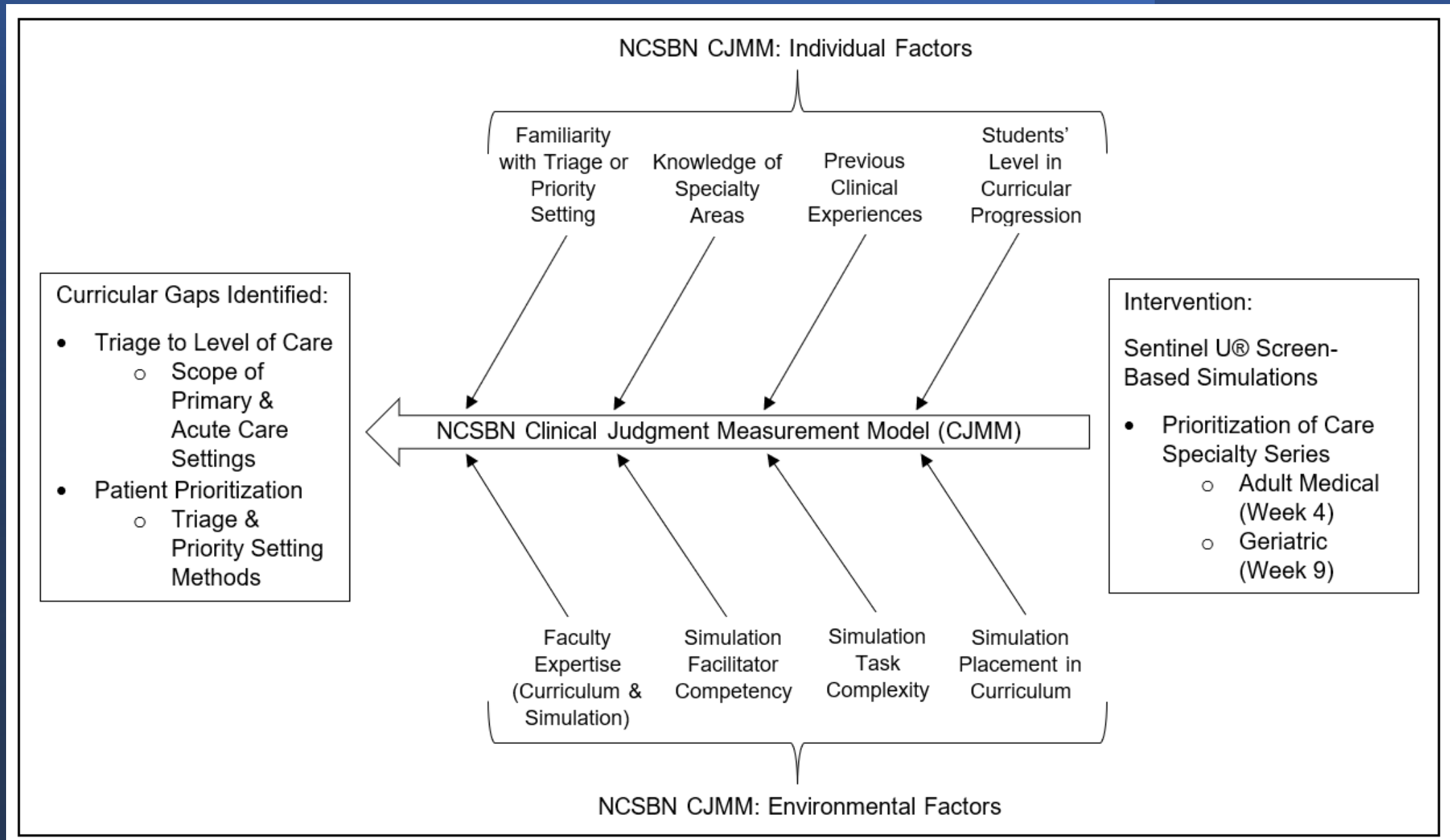
- Increased in ability to correctly select and prioritize appropriate interventions in less time
- Decreased in ability to correctly triage patients to the appropriate level of care and prioritize patients within each care setting

Screen-based Simulation Usage

- Supplement didactic and clinical experiences with targeted SBS to promote CDM
- Provide deliberate practice to ensure consistent, equitable exposure to patient care scenarios, multiple-patient management of care

Recommendations

- Teach faculty & students about NCSBN CJMM
- Faculty development in SBS and Simulation Standards of Best Practice
- Further research
  - Curricular integration to facilitate clinical judgment development
  - Evaluate student clinical performance outcomes in alignment with the NCSBN CJMM


NCSBN CJMM: Individual Factors
Familiarity with Triage or Priority Setting
Knowledge of Specialty Areas
Previous Clinical Experiences
Students' Level in Curricular Progression
Curricular Gaps Identified:
Triage to Level of Care
Scope of Primary & Acute Care Settings
Patient Prioritization
Triage & Priority Setting Methods
NCSBN Clinical Judgment Measurement Model (CJMM)
Intervention:
Sentinel U® Screen-Based Simulations
Prioritization of Care Specialty Series
Adult Medical (Week 4)
Geriatric (Week 9)
Faculty Expertise (Curriculum & Simulation)
Simulation Facilitator Competency
Simulation Task Complexity
Simulation Placement in Curriculum
NCSBN CJMM: Environmental Factors

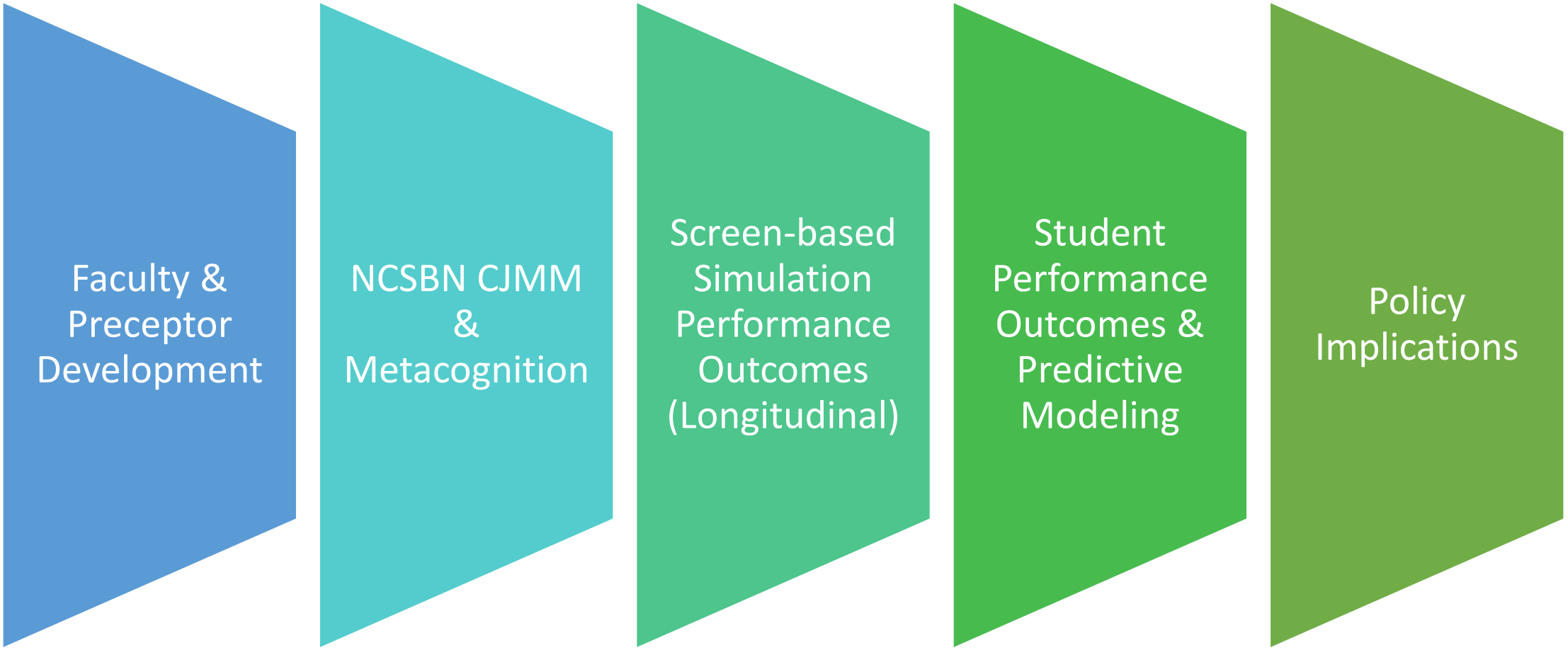
Limitations

Generalizability of Results

Simulation Facilitation

- Environmental Factors
- Individual Factors

Future Research & Recommendations



Questions