

**Transforming undergraduate  
nursing curriculum by  
aligning models of clinical  
reasoning through  
simulation**

**Nicole Blakey  
Dr Stephen Guinea  
Dr Farida Saghafi**

HERDSA Conference  
June 28-30, Sydney, Australia



**HERDSA Conference**  
**June 28-30, Sydney, Australia**

# Background

- Existing approach to curriculum
- Need for curriculum transformation

# Clinical reasoning: Dual-process perspective

- Analytic thinking
  - Conscious, deliberate, slow
  - Systematic
- Non-analytic
  - Unconscious, automatic, fast
  - Pattern recognition, intuition

# Teaching clinical reasoning

## Students

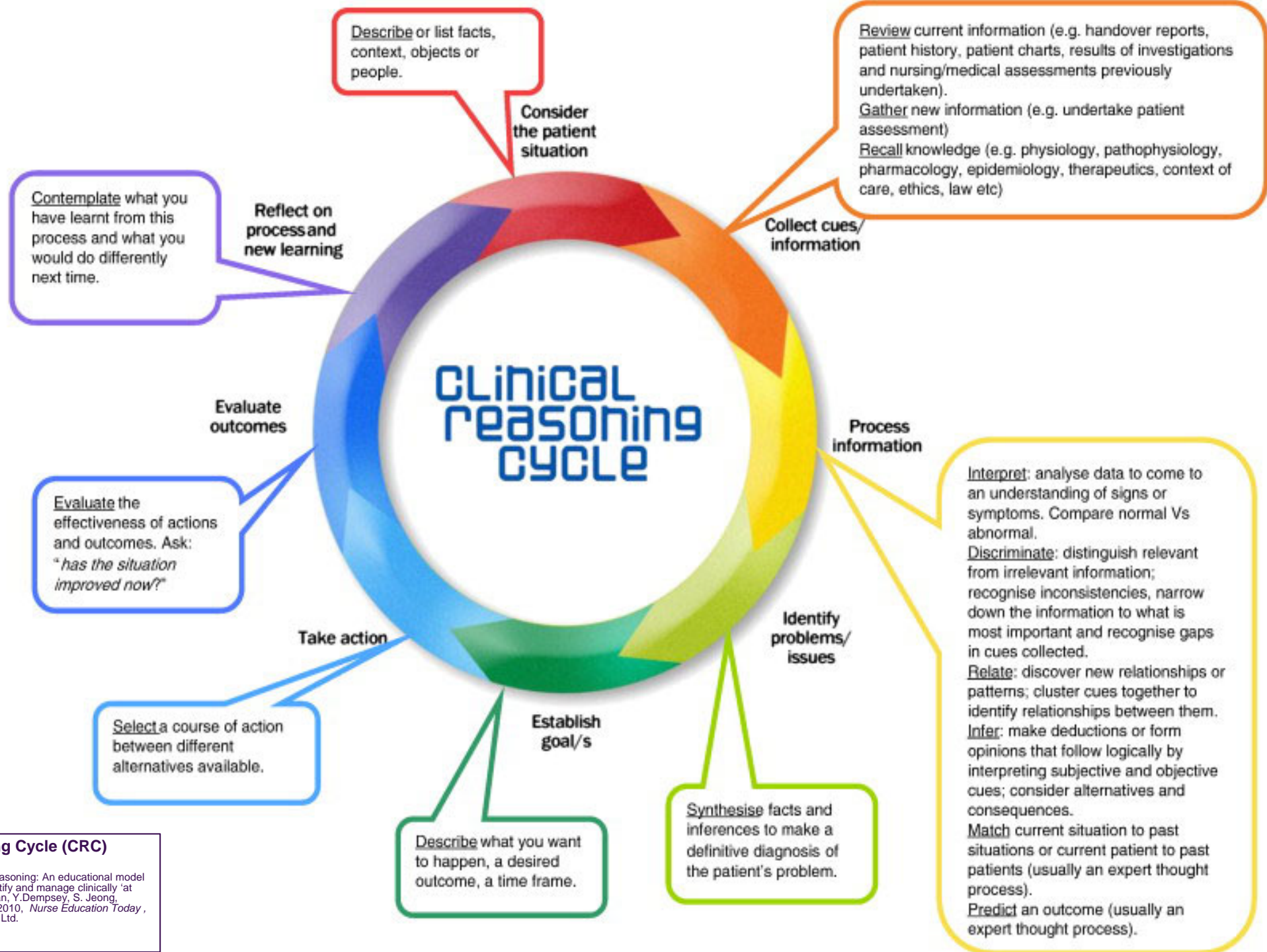
- Consistent, structured approach

## Lecturers

- Make explicit to students – making this implicit, habitual skill visible
- Engage students in these processes in a structured way

# Teaching clinical reasoning using simulation

- New graduate nurses lack critical thinking (Theisen & Sandau, 2013)
- Teaching clinical reasoning is challenging and relies on clinical environment
- Strong student satisfaction with simulation education and some reported improved confidence and/or critical thinking (Cant & Cooper, 2017)
- Using simulation and a structured debriefing framework *can* enhance clinical reasoning skills



**Figure 1. Clinical Reasoning Cycle (CRC) process with descriptor**

Adapted from "The 'five rights' of clinical reasoning: An educational model to enhance nursing students' ability to identify and manage clinically 'at risk' patients," by T. Levett-Jones, K. Hoffman, Y. Dempsey, S. Jeong, D. Noble, C. Norton, J. Roche & N. Hickey, 2010, *Nurse Education Today*, 30(6), 515-20. Copyright 2009 by Elsevier Ltd.

# Debrief for Meaningful Learning

	Frame One	Frame Two	Frame Three	Frame Four	Frame Five	Frame Six			
	← Engage Phase →	← Explore Phase, Explain Phase, Elaborate Phase →						→ Extend Phase →	
<b>Debriefing for Meaningful Learning<sup>®</sup></b>	Patient story	Focused key problem	Desired client outcome (goal)	Nursing interventions and patient responses  What worked towards the agreed goal?  What did not work towards the agreed goal?	What would <u>you</u> do differently and why?	Thinking-in-action	Thinking-on-action	Thinking-beyond-action	



# Alignment of frameworks

Synergies	What is known?	Negotiating the key problem	Setting a goal	Taking action	Evaluation	Extending learning through reflection			
Clinical Reasoning Cycle	Consider the patient situation	Process information	Establish goal/s	Take action	Evaluate outcomes	Reflect on process and new learning			
	Collect cues/information	Identify problems/issues							
Debriefing for Meaningful Learning®	Engage Phase		Explore Phase, Explain Phase, Elaborate Phase					Extend	
	Patient story	Focused key problem	Desired client outcome (goal)	Nursing interventions and patient responses  What worked towards the agreed goal?  What did not work towards the agreed goal?	What would <u>you</u> do differently and why?	Thinking-in-action	Thinking-on-action	Thinking-beyond-action	

# Method / implementation

- **Setting:** Five campuses of a School of Nursing, Midwifery & Paramedicine in Australia
- **Participants:** 1500 third students enrolled in a final semester Bachelor of Nursing program
- **46 Academic Staff**
- **12 Technical staff**
- **Intervention: Two weeks intensive**
  - Two 2-hr lectures and four [simulations](#) (nine hours):  
Manikin, actor based, video based , game based
  - Each simulation followed by DML: [aligning the simulation scenario and the post-simulation debrief with a clinical reasoning framework](#)

# Simulations

Case One	Case Two	Case Three	Case Four
<ul style="list-style-type: none"> <li>• Interprofessional communication</li> <li>• ISBAR</li> </ul>	<ul style="list-style-type: none"> <li>• Interpersonal skills</li> <li>• Rapport</li> <li>• Maintain dignity</li> </ul>	<ul style="list-style-type: none"> <li>• Ethical decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Patient allocation</li> <li>• Prioritisation</li> <li>• delegation</li> </ul>
Manikin based	Actor based	Video based	Game based
Identification of the deteriorating patient. Fluid and electrolytes	Empathic communication. Challenging patient	Dignity and vulnerability. Refusal of treatment	Prioritisation and delegation. “Ward for a day”

# Evaluation

- Satisfaction with Simulation Experience Scale (SSES) (Levett-Jones et al., 2011)
- Changes in critical thinking: HSRT (Health Sciences Reasoning Test) (Insight Assessment, 2014)

# Findings

- **Satisfaction –**
  - High across four simulations
  - Statistically significant difference between game based and other modes
- **Significant positive change in critical thinking**

# Discussion & Conclusion

- Simulation scenarios designed according to the Clinical Reasoning Cycle framework, followed by Debriefing for Meaningful Learning improved critical thinking skills.
- This approach of aligning simulation scenario design and debriefing approach with a single theoretical framework / perspective appears to be a good idea.

# Discussion & Conclusion

- Alignment of scenario design and debriefing models according to a consistent theoretical framework enhances the development of non-technical skills.
- This approach can be applied to other areas.

# Limitations

- One university – one course, one year level
- No longitudinal data



# Implications

- Contributes to evidence that student satisfaction with simulation can be achieved by well designed simulation experiences using a range of modes
- Implications for
  - Curriculum and simulation design
  - Investment in simulation technology and environments
  - Investment in staff education and training

# Recommendations/ implications

- Further longitudinal research study
- Informing curriculum & simulation design

# References

- Aiken, L. H., Clarke, S. P., Cheung, R. B., Sloane, D. M. & Silber, J. H. (2003). Educational levels of hospital nurses and surgical patient mortality. *Journal of American Medical Association*, 290(12), 1617-1623.
- Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice*. Menlo Park, CA: Addison-Wesley.
- Benner, P & Tanner, C. (1987). Clinical judgment: How expert nurses use intuition. *The American Journal of Nursing*, 87(1), 23-31.
- del Bueno, D. (2005). A crisis in critical thinking. *Nursing Education Perspectives*, 26(5) 280-282.
- Delany, C. & Golding, C. (2014). Teaching clinical reasoning by making things visible: An action research project with allied health educators. *BMC Medical Education*, 14(1).
- Dreifuerst (2009). The essentials of debriefing in simulation learning: A concept analysis. *Nursing Education Perspectives*, 30(2), 109-114.
- Dreifuerst, K. T. (2010). *Debriefing for Meaningful Learning: Fostering development of clinical reasoning through simulation*. (Doctoral dissertation, Indiana University). Retrieved from <https://scholarworks.iupui.edu/bitstream/handle/1805/2459/KTD%20%20Final%20Dissertation.pdf?sequence=1>
- Dreifuerst, K. T. (2012). Using debriefing for Meaningful Learning to foster development of clinical reasoning in simulation. *Journal of Nursing Education*, 51(6), 326-333.
- Dreifuerst, K. T. (2015). Getting started with Debriefing for Meaningful Learning. *Clinical Simulation in Nursing*, 11(5), 268-275.
- Ericsson, K., Whyte, A., & Ward, J. (2007). Expert performance in nursing: Reviewing research on expertise in nursing within the framework of the expert performance approach. *Advances in Nursing Science*, 30(1), 58–71.
- Evans, J. B. T. (2008). Dual-processing accounts of reasoning, judgment. *Annual Review Psychology*, 59, 255–78.
- Fanning, R., & Gaba, D. (2007). The role of debriefing in simulation-based learning. *Simulation in Healthcare: Journal of the Society for Simulation in Healthcare*, 2 (2), 115-25.
- Forneris, S. G., Neil, D. O., Tiffany, J., Kuehn, M. B., Meyer, H. M., Blazovich, L. M., Holland, A. E. & Smerillo, M. (2015). Enhancing clinical reasoning through simulation debriefing: A multisite study. *Nursing Education Perspectives*, 36(5), 304-310.

# References

- Higgs, J. & Jones, M. A. (2008). Clinical decision making and multiple problem spaces. In J. Higgs, M. Jones, S. Loftus, & N. Christensen (Eds.), *Clinical reasoning in the health professions* (pp. 3-17). Philadelphia, PA: Elsevier
- Hoffman, K. (2007). *A comparison of decision-making by "expert" and "novice" nurses in the clinical setting, monitoring patient haemodynamic status post Abdominal Aortic Aneurysm surgery*. Doctoral dissertation, University of Technology Sydney). Retrieved July 6, 2016 from [http://find.lib.uts.edu.au/?R=DSPACE\\_oai:opus.lib.uts.edu.au:10453/21800](http://find.lib.uts.edu.au/?R=DSPACE_oai:opus.lib.uts.edu.au:10453/21800)
- Jones, M. (1995). Clinical reasoning and pain. *Manual Therapy*, 1, 17-24.
- Kuiper, R., Heinrich, C., Matthias, A., Graham, M. J., & Bell-Kotwall, L. (2008). Debriefing with the OPT model of clinical reasoning during high fidelity patient simulation. *International Journal of Nursing Education Scholarship*, 5(1), 14.
- Lapkin, S., Levett-Jones, T., Bellchambers, H., & Fernandez, R. (2010). Effectiveness of patient simulation manikins in teaching clinical reasoning skills to undergraduate nursing students: A systematic review. *Clinical Simulation in Nursing*, 6(6), e207-e222.
- Levett-Jones, T., Hoffman, K., Dempsey, J., Jeong, S. Y-S, Noble, D., Norton, C. A., 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.
- Levett-Jones, T. (2013). *Clinical reasoning: Learning to think like a nurse*. Frenchs Forest, Australia: Pearson
- Levett-Jones, T., & Hoffman, K. (2013). Clinical reasoning: What it is and why it matters. In T. Levett-Jones (Ed.), *Clinical reasoning: Learning to think like a nurse*. (p.2-15) Frenchs Forrest, Australia: Pearson
- Norman, G. R. & Eva, K. W. (2010). Diagnostic error and clinical reasoning. *Medical Education*, 44(1), 94-100.
- Simmons, B. (2010). Clinical reasoning: Concept analysis. *Journal of Advanced Nursing*, 66(5), 1151-1158.
- Smith, M., Loftus, S. & Levett-Jones, T. (2013). Teaching clinical reasoning. In S. Loftus, T. Gerzinia, J. Higgs, M. Smith & E. Duffy (Eds.), *Educating health professionals: Becoming a university teacher*. Rotterdam, Netherlands: Sense Publishers.