Simulated Interprofessional Education (Sim-IPE) Redesigned for an On-Line World

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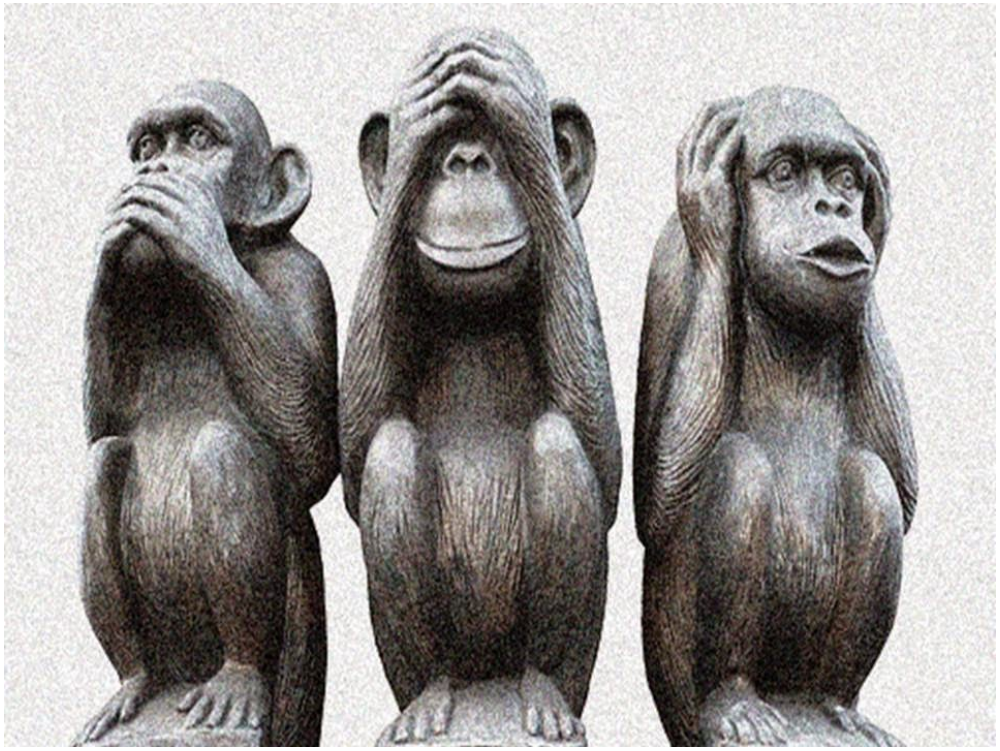
Disclosures



None of the presenters have anything to disclose.

Our Interprofessional C.A.L.M. Team

Reflection Questions

- Have you developed any interprofessional simulation activities for your students?
- Have you ever incorporated distance students into simulation activities?
- Have you used any of the following technologies to incorporate students into simulation activities?

Objectives

1

Discuss the importance of continuing simulated enhanced interprofessional education (Sim-IPE) in a COVID 19 world to facilitate the attainment of core competencies for interprofessional collaborative practice (IPEC).

2

Describe how learning management systems, virtual, and/or telehealth supported technologies can be integrated into Sim-IPE to facilitate synchronous inclusion of learners from any location.

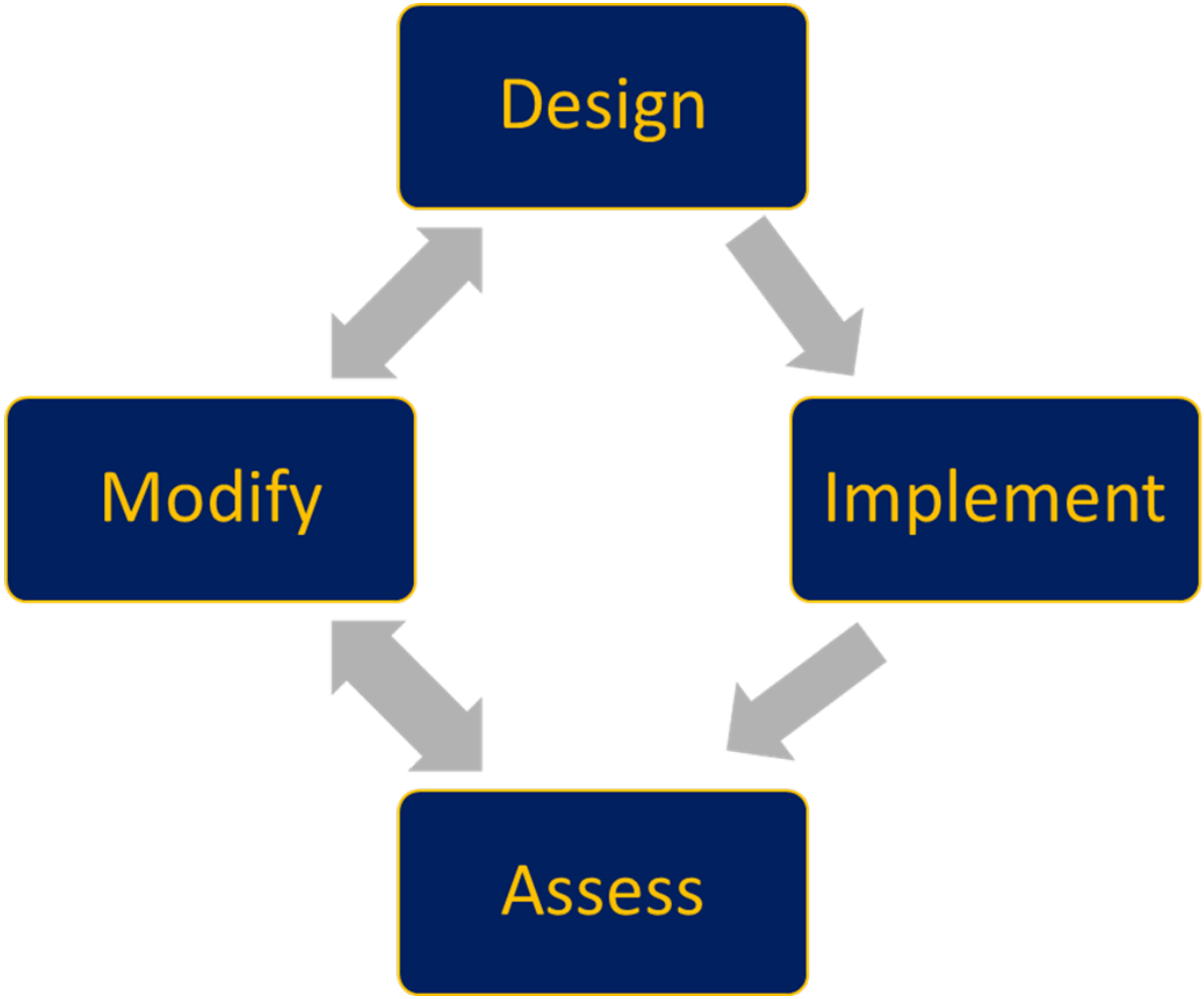
3

Develop a synchronous Sim-IPE using virtual and tele-presence technology for the inclusion of distance learners.

Purpose of Presentation

- The purpose of this workshop is to discuss how various technology applications can be utilized to bring learners together for simulation enhanced interprofessional education (Sim-IPE).
- Exemplars will be shared highlighting the benefits of using technology to support and enhance learning.
- Participants will have the opportunity to actively participate and evaluate different technology applications in a Sim-IPE experience.

DIAM Model



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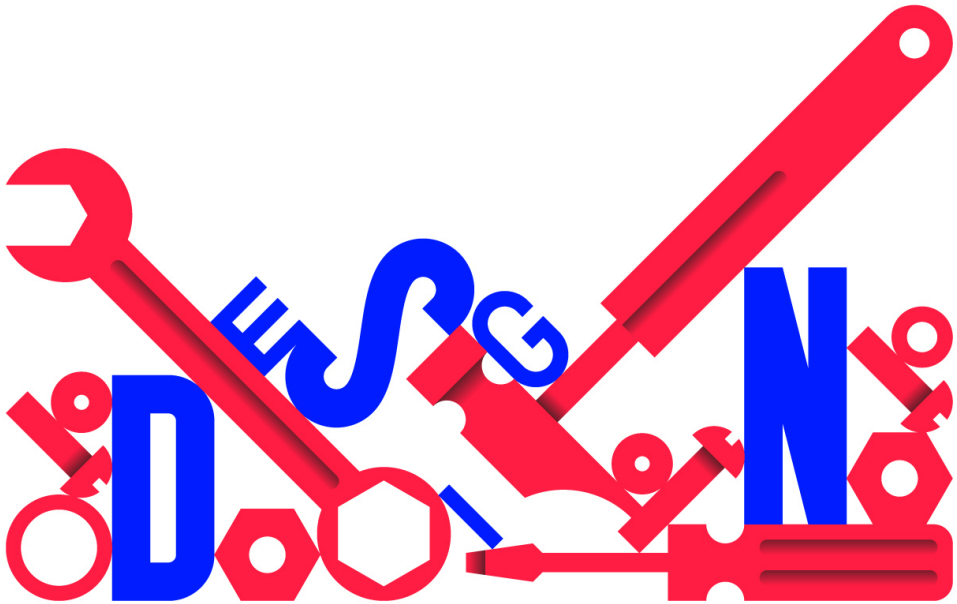
Design – Logistics

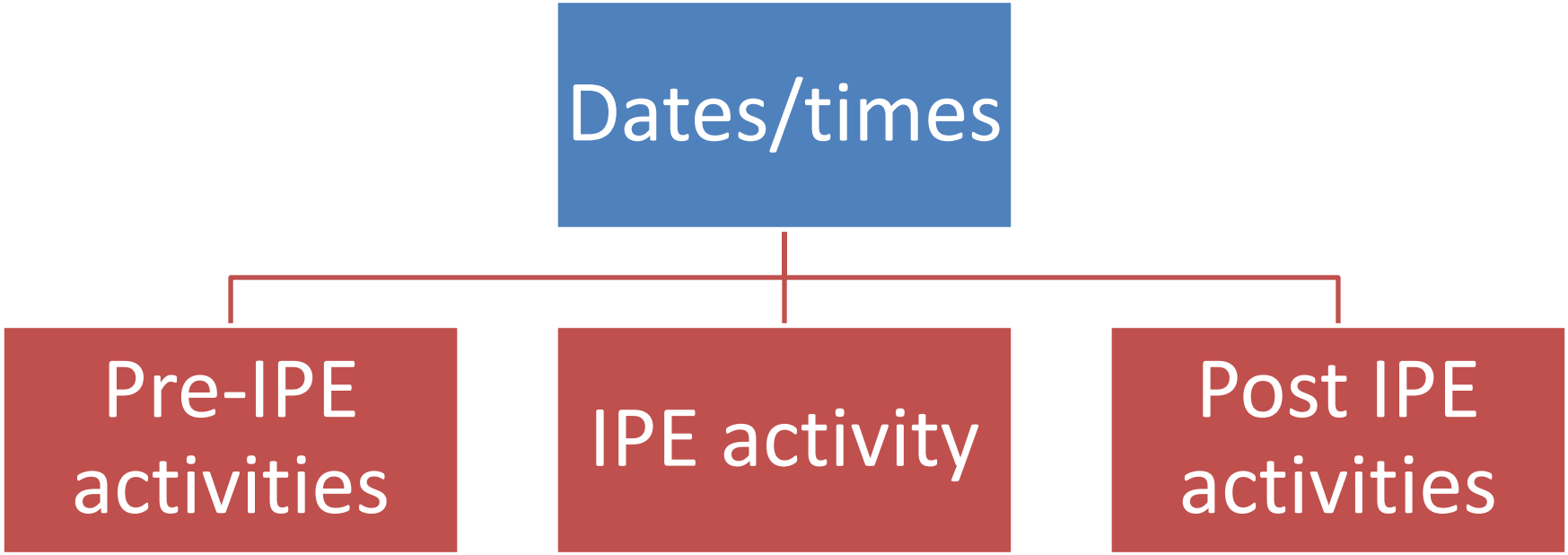
- Linked to a course(s)
- Space requirements
- Time requirements
- Technology requirements
- Food
- Travel
- Costs

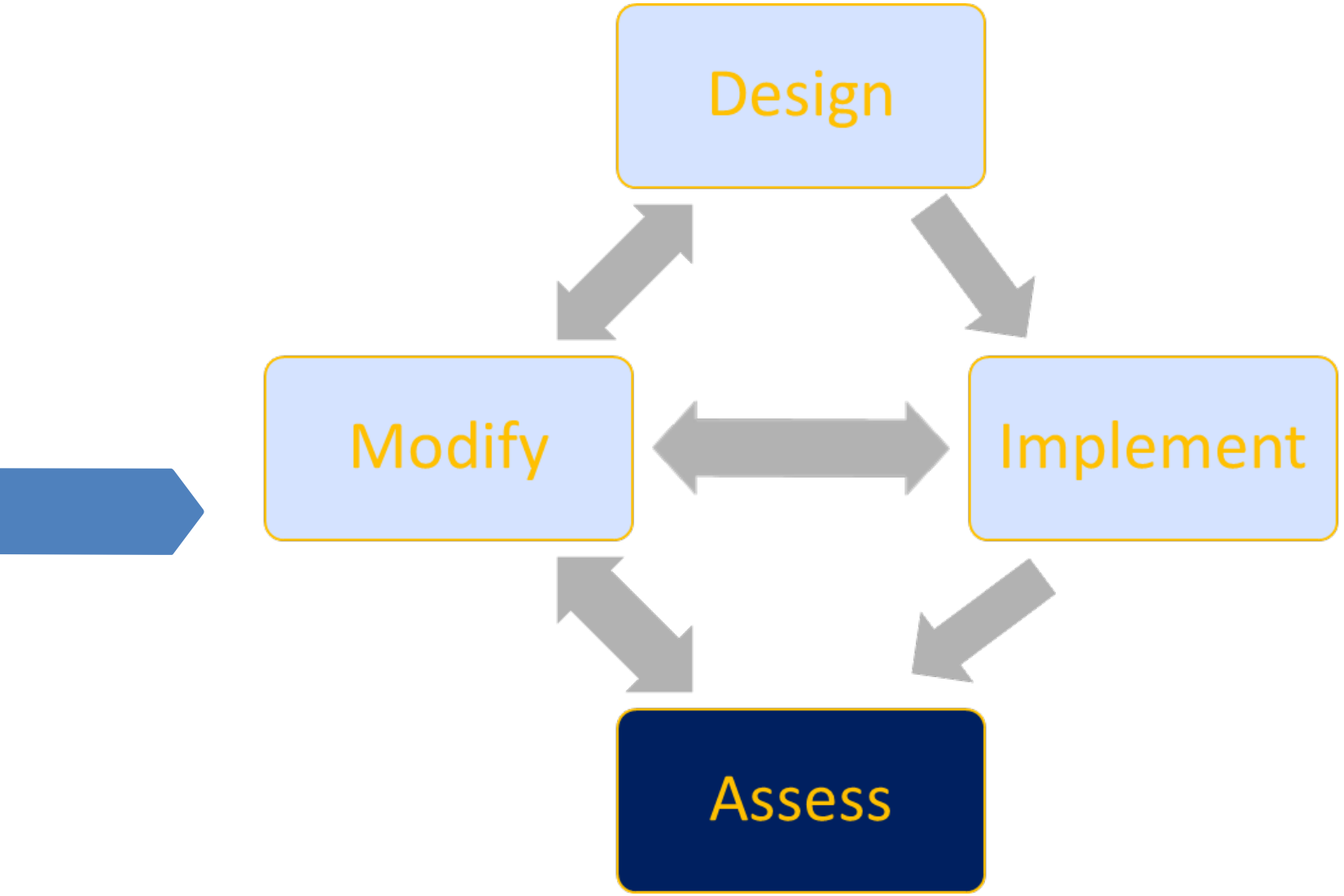


Design – Method of Assessment/Evaluation

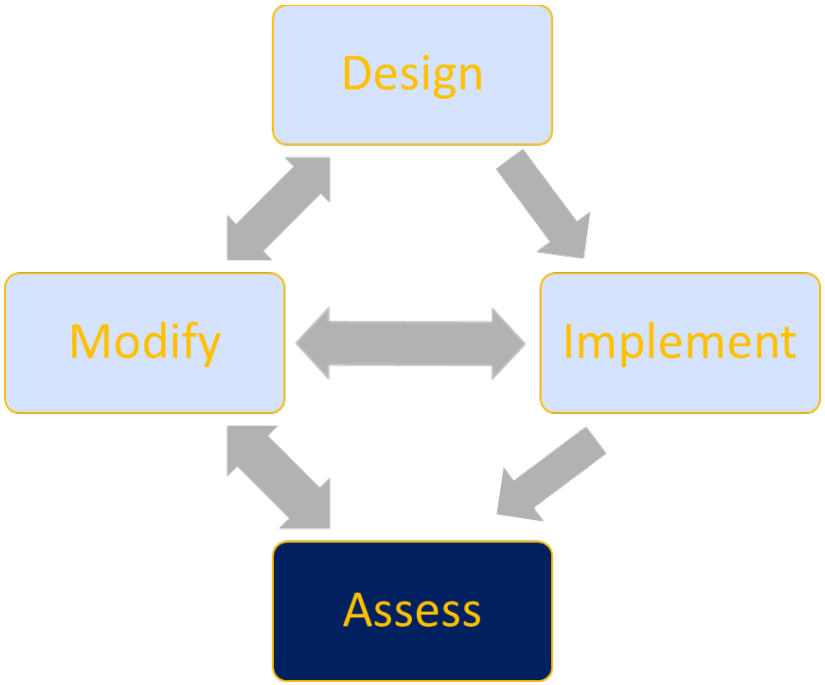
- Standardized Tools
- Survey Tools
- Video Assessments
- Rubrics
- Reflections
- Worksheets
- Case Reporting
- Testing

Implement

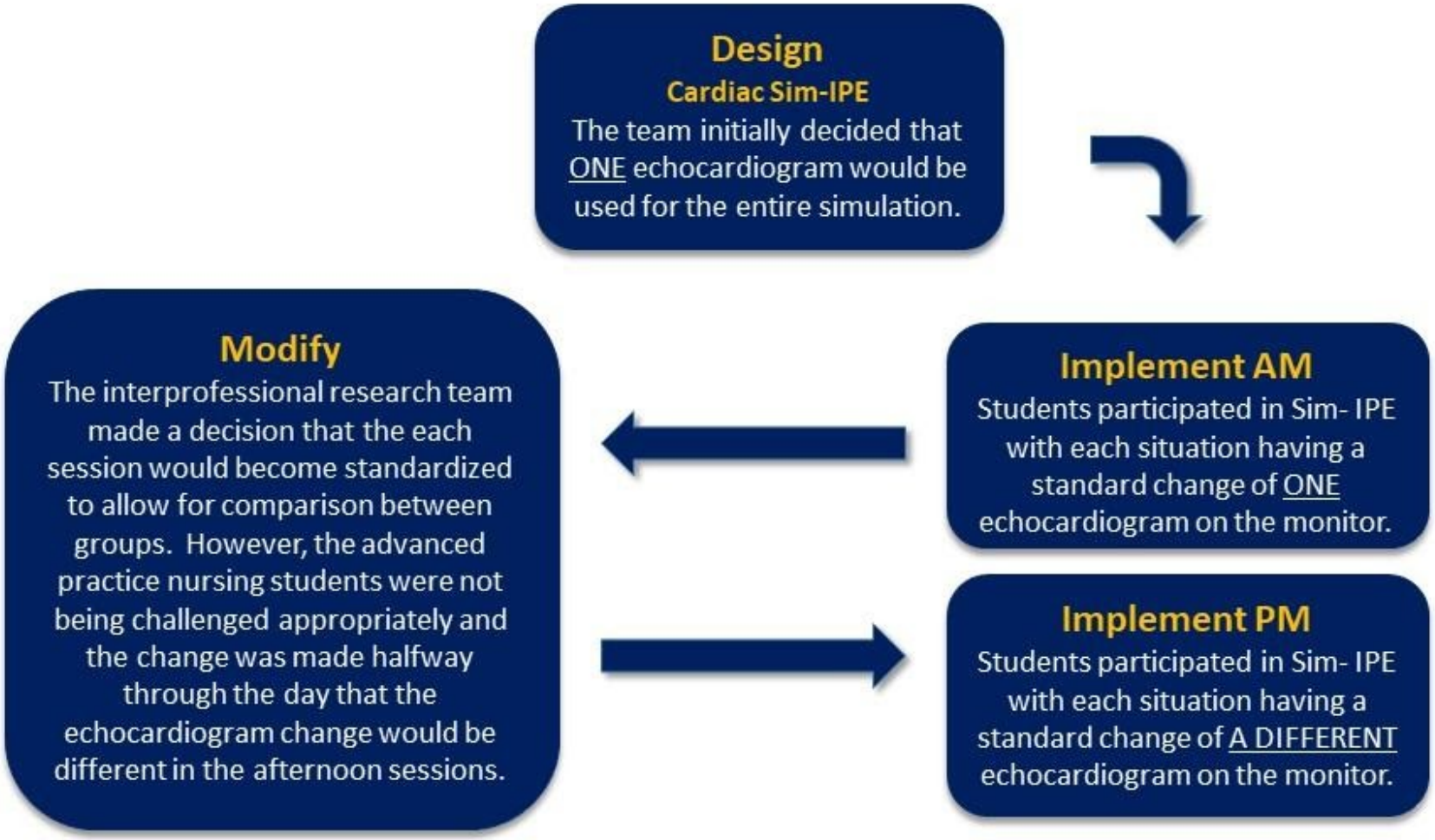

Dates/times
Pre-IPE activities
IPE activity
Post IPE activities


Design
Modify
Implement
Assess

Program or Process Evaluation



- Improve program effectiveness
- Increase understanding
- Inform decisions about future programming
- Look at
  - Participants
  - Simulation based experience
  - Facility
  - Support team
  - Facilitators



An example of the DIAM model used during the **implement phase** due to the scenario not being at the adequate level of difficulty for the Advanced Practice Nurse (APN) students.

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Evaluation

- Measures quality and productivity against a standard of performance
- Selection/development of valid reliable tools to measure outcomes
- Participant evaluation can be formative, summative and/or high-stakes

Types of Evaluation

- Formative
  - Providing constructive feedback for the participant(s)
- Summative
  - Determine competence
  - Achievement of outcome criteria that may be associated with grade
- High stakes
  - Major academic, educational, or employment consequence at a discrete point in time
  - Refers to the outcome of consequences of the process

SIM-IPE Evaluation Tools

INDIANA UNIVERSITY SIMULATION INTEGRATION RUBRIC (IUSIR)

Evaluator _____ Date _____

Team: _____

Below Average (1)	Average (3)	Above Average (5)
•Little or no eye contact, subdued interaction with team (hands in pockets, crossed arms) Inappropriate clothing choice, Disheveled	•Body language indifferent and eye contact sporadic, clean and neat but too casual (jeans, T-shirt, no name tag)	•Body language and eye contact receptive with all team members, professional appearance, wearing name tag
•Rarely uses closed loop communication, frequent use of vague, incomplete or confusing terminology. Poor or no introduction. Role designation absent or limited	• Inconsistent use of closed loop communication; occasional use of vague or confusing terminology. Introduction to patient delayed or incomplete.	•Uses names of team members and displays consistent use of closed loop communication, uses precise and clear terminology reliably. Introduction made promptly at scenario start
• Does not effectively incorporate feedback - comments judgmental, overly confident or condescending or very limited verbal interaction, rarely asks for clarification, does not address errors. Detached from situation Ignores others or appears overly confident	•Usually respectful of suggestions from teammates but not always open to discussion, does not address errors effectively, uses team feedback inconsistently, occasionally asks for clarification, occasionally ignores situation	• Incorporates feedback constructively to improve patient care - asks questions, stimulates discussion, clarifies ideas for others, addresses errors effectively
•Does not seek out input from team when uncertain or relied excessively on written resources	•Seeks occasional input from team when uncertain but usually refers to written resources	•Areas of uncertainty addressed as a team and written resources used prudently
•Often fails to identify critical patient care issues and is rarely proactive. Unfocused	•Identifies most of the critical patient care issues but may be delayed in doing so. Confusion on treatment plan minimal	• Identifies all critical patient care issues promptly and proactively. Implements treatments based on clinical impression summarized by the team
•Does not reassure patient with empathy, does not address patient questions promptly or professionally	• Patient reassurance mechanical, most but not all patient questions answered	•Reassures patient with empathy and addresses patient questions promptly and completely
•Team lacks enthusiasm and cohesiveness, disorganized, confused, little communication	•Team energy flagging at times but overall positive, occasional confusion	• Team interactions consistently display positive energy and clear communication, with all team tasks assigned and clear
•Communication between direct team members is frequently incomplete, vague or confusing, does not demonstrate closed loop technique	•Team applies closed loop communication techniques inconsistently; occasional use of vague, incomplete or confusing terminology	•Consistent use team member names, closed loop communication, and precise, clear terminology
•Critical decisions points not addressed as a team or team input not applied reliably. Rarely proactive patient care	•Team input given at most critical decisions points with generally adequate implementation, some delayed pt. care	•Team input used consistently at critical decision points to implement a plan of action. Pt. care is prompt and proactive
•Team members often unaware of clinical impression and treatment plan	•Most but not all team members consistently aware of clinical impression	•Clinical impression summarized and implemented as a team
• Sporadic or incorrect explanations of medical terms or procedures provided to patient	• Education about treatments lack clarity or are occasionally incorrect	•Education of patient about treatments thorough and accurate.
•Team frequently fails to reassess patient after treatments	•Patient not consistently reassessed by team after treatments given	•Team reassess patient symptoms consistently after treatments

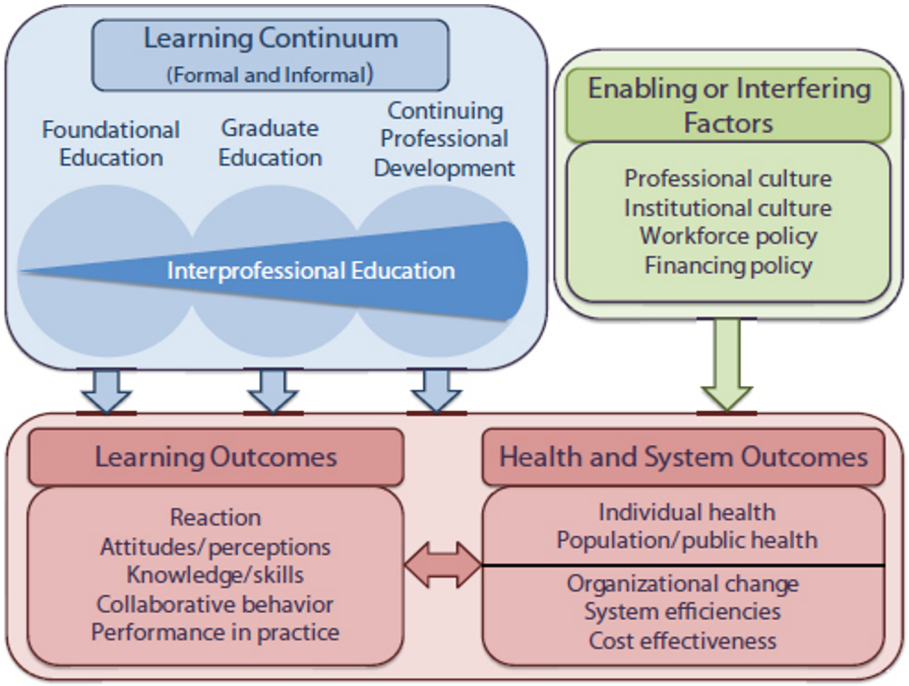
Reflection Point

- How do you assure quality for your IPE simulations?

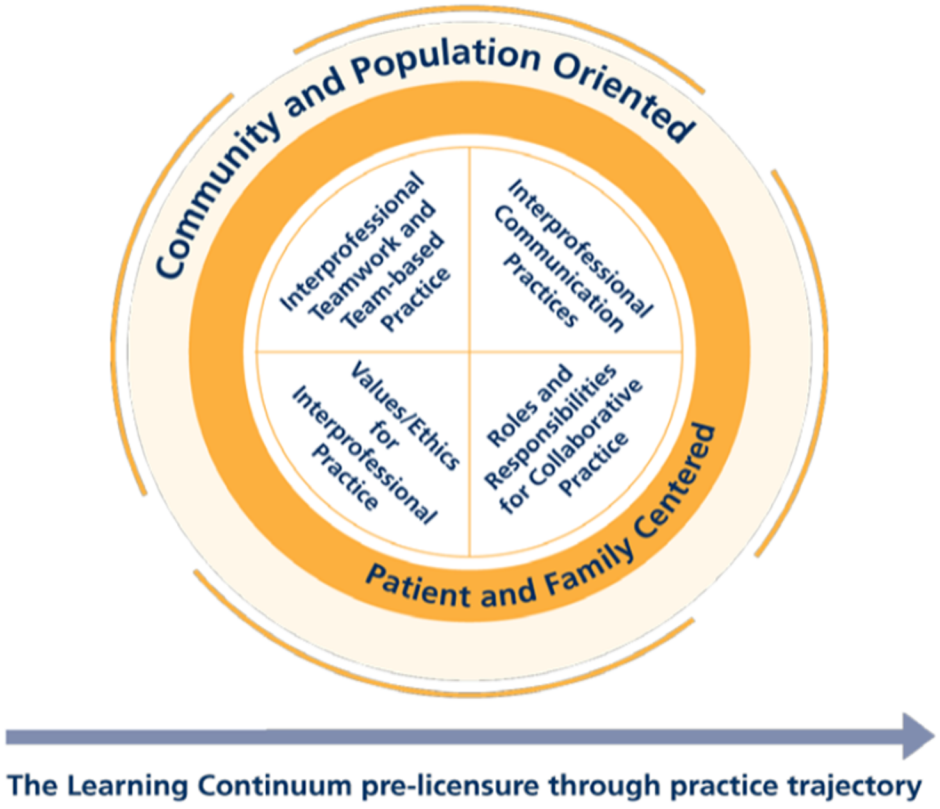
- Think of how you can incorporate the DIAM model with your existing IPE simulations.

CURRENT PRACTICE SIM-IPE

IOM Interprofessional Learning Continuum Model



Interprofessional Collaboration Competency Domain



INACSL Standards of Best Practice: Simulation[SM] Enhanced Interprofessional Education (Sim-IPE)

Clinical Simulation in Nursing (2016) 12, S34-S38

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Clinical Simulation in Nursing

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Standards of Best Practice: Simulation

INACSL Standards of Best Practice: Simulation[SM] Simulation-Enhanced Interprofessional Education (Sim-IPE)

INACSL Standards Committee

KEYWORDS
interprofessional education;
collaborative practice;
interprofessional communication;
teamwork

Cite this article:

INACSL Standards Committee (2016, December). INACSL Standards of Best Practice: Simulation[SM] Simulation-enhanced interprofessional education (sim-IPE). *Clinical Simulation in Nursing, 12*(S), S34-S38. http://dx.doi.org/10.1016/j.ecns.2016.09.011.

As the science of simulation continues to evolve, so does the need for additions and revisions to the INACSL Standards of Best Practice: Simulation[SM]. Therefore, the INACSL Standards of Best Practice: Simulation are living documents.

INACSL Standards of Best Practice: Simulation[SM] Enhanced Interprofessional Education (Sim-IPE)

Four Key Criteria:

- Conduct Sim-IPE based on a theoretical or a conceptual framework
- Utilize best practices in the design and development of Sim-IPE
- Recognize and address potential barriers to Sim-IPE
- Devise an appropriate evaluation plan for Sim-IPE.

Clinical Simulation in Nursing (2016) 12, S34-S38

ELSEVIER

Clinical Simulation in Nursing

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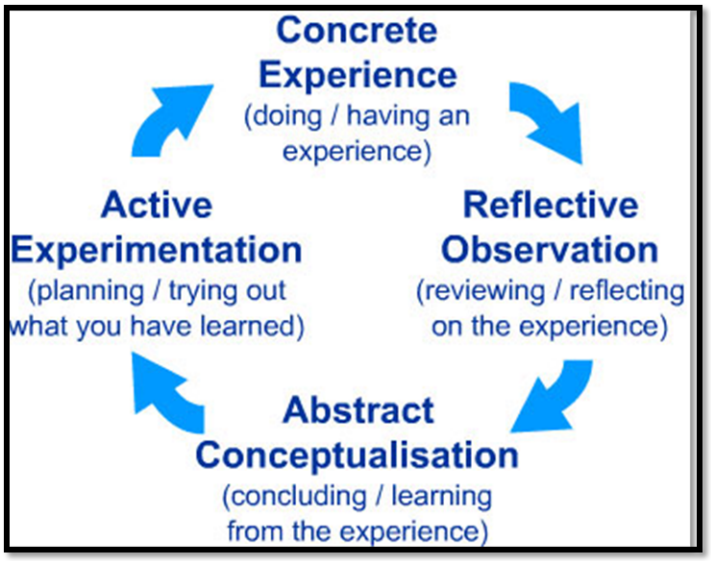
Standards of Best Practice: Simulation

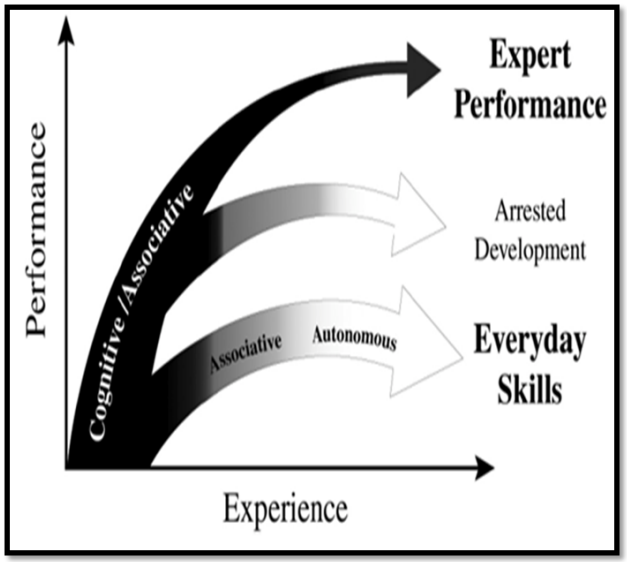
INACSL Standards of Best Practice: Simulation[SM] Simulation-Enhanced Interprofessional Education (Sim-IPE)

Learning Theories

Kolb's Experiential Learning



Ericsson's Deliberate Practice



IPEC ® Competencies

1. Values and Ethics
2. Roles and Responsibilities
3. Interprofessional Communication
4. Teams and Teamwork

Literature on Sim-IPE

What we know

- Students report positive attitudes and perceptions
- Can be used to expose students to a variety of settings/experiences

What is lacking

- No best tool for capturing outcomes
- Evaluation is a struggle
- Long term impact on learner outcomes
- Long term impact on patient outcomes

Accreditation Standards

Reflection Point

- Consider how you may add an objective related to the IPEC core competencies into an IPE simulation.

- How have you assured that you addressed the standards for best practice?

RECOGNIZING AND HANDLING BARRIERS WHEN DOING IPE

Common barriers to the inclusion of distance learners in Sim-IPE…

- Scheduling
- Technology
  - Availability
  - User capabilities
  - Internet service
  - Training
- Engagement

Reflection Point

- What strategies might you implement to minimize or eliminate the barriers to including distance learners in Sim-IPE?

Strategies to minimize or eliminate those barriers…

- Utilization of familiar technology (LMS)
  - LMS
  - Collaborate/Blue Jeans/Skype
  - Social Media Platforms
- Creation of a technology guide/exemplar
- Consider asynchronous activities
- Consider allowing IPE group scheduling

Overview of evidence for selected technologies:

a. Learning Management Systems
b. Virtual Simulation Platforms
c. Virtual Meeting Platforms
d. Tele-presence Robot

Learning Management Systems

- Learning management systems (LMS) integrate a wide range of pedagogical and course administration tools
  - Asynchronous and synchronous communication
  - Content development & delivery
  - Formative & summative assessments
- Wide variety of LMS related research has been conducted focusing on learner and faculty perceptions:
  - Strong learning benefits (Hanson & Robson, 2004)
  - Preference for LMS tools and functions to manage course materials (Parker, Bianchi & Cheah, 2008)
  - LMS not as important as the method in which it is used (Holm, Rollinghoff & Ninck, 2003).
  - Can serve as a catalyst for self reflection and facilitate change from passive to active learning (Herse & Lee, 2005).

Virtual Simulation Platforms

- Currently little is known about the use of virtual SBLE for the delivery and development of IPE competencies
- Training in virtual environments has emerged as a novel approach
  - Real life experiences
  - Rapid feedback
  - Accessible by multi-users
  - No constraints related to specific location or time

Virtual Simulation Platforms

- Several studies have tested multi-user virtual environments (MUVE) such as Second Life ™ (SL), and have demonstrated positive results.
  - Medical Education (Wiecha, Heydan, Sternthal & Merialdi, 2010)
  - Training for nursing staff (Kalish, Lee & Rochman, 2010)
  - Operating room physicians (Abelson et al., 2015)
  - Senior level nursing students (Aebersold, Tschannen & Bathish, 2012).

- Virtual reality platforms have also been utilized to improve interprofessional
  - Communication and teamwork attitudes (Sweigart et al., 2016)
  - Teamwork and team based trauma care (Youngblood et al., 2008)
  - Community based care (Sabus, Sabata & Anonacci, 2011)
  - Attitudes towards interdisciplinary teamwork (Caylor, Aebersold, Lapham, & Carlson, 2015)

Virtual Meeting Platforms

- In March 2020, across the world universities had to suspend all on-site activities due to the coronavirus disease 2019 (COVID-19) pandemic.
  - As a result, faculty and simulation facilitators in acute care and academia were faced with the problem of how to convert a simulation-based courses into distance learning.
  - Telesimulation through virtual meeting platforms emerged as an opportunity to continue to provide high quality simulation based learning experiences.

Virtual Meeting Platforms

- In late 2020 several manuscripts began to be published showcasing the creativity and innovative strategies used by simulationists when conducting telesimualtion with virtual meeting platforms.
  - Torres et al. (2020) provided a detailed overview of the considerations and challenges while implementing on-line format for telesimulation using Zoom and standardized patients.
  - Similarly, Esposito & Sullivan highlighted how clinical continuity was maintained using virtual simulations and Morin (2020) discussed the impact particularly on clinical nursing education as a result of the pandemic.
  - Khames et al. (2020) focused on medical students and how the COVID 19 pandemic impacted.
  - Diaz & Walsh (2020) highlighted step by step considerations for tele-simualation conducted during COVID-19.

Virtual Meeting Platforms

- Zoom
  - Licensed paid account
  - Schedule meetings
  - Options for breakout rooms
  - Recording
- Google Hangout
- BlueJeans
  - Cloud based licensed account
  - High resolution video and sharing
  - Recording
- Blackboard Collaborate Ultra
  - Learning management system
  - Browser based virtual classroom
  - Audio, video, chat, pooling
  - Student familiarity
  - Ability to organize students in group breakout sessions

Virtual Meeting Platforms

- Critical Components:
  - Technology –
  - Facilitator & Sim Tech Training/Support
  - Pilot Testing!!!
  - Pre-Briefing
  - Facilitation (changes!!)
  - Debriefing

Tele-Presence Robot

- Limited studies exist that evaluate the use of a telepresence robot in health professions education.
- Conde et al. (2010) recommended that telehealth integration should be incorporated into training, education, and research in health sciences.
- Also recommended to increase support for research in portable telepresence systems.

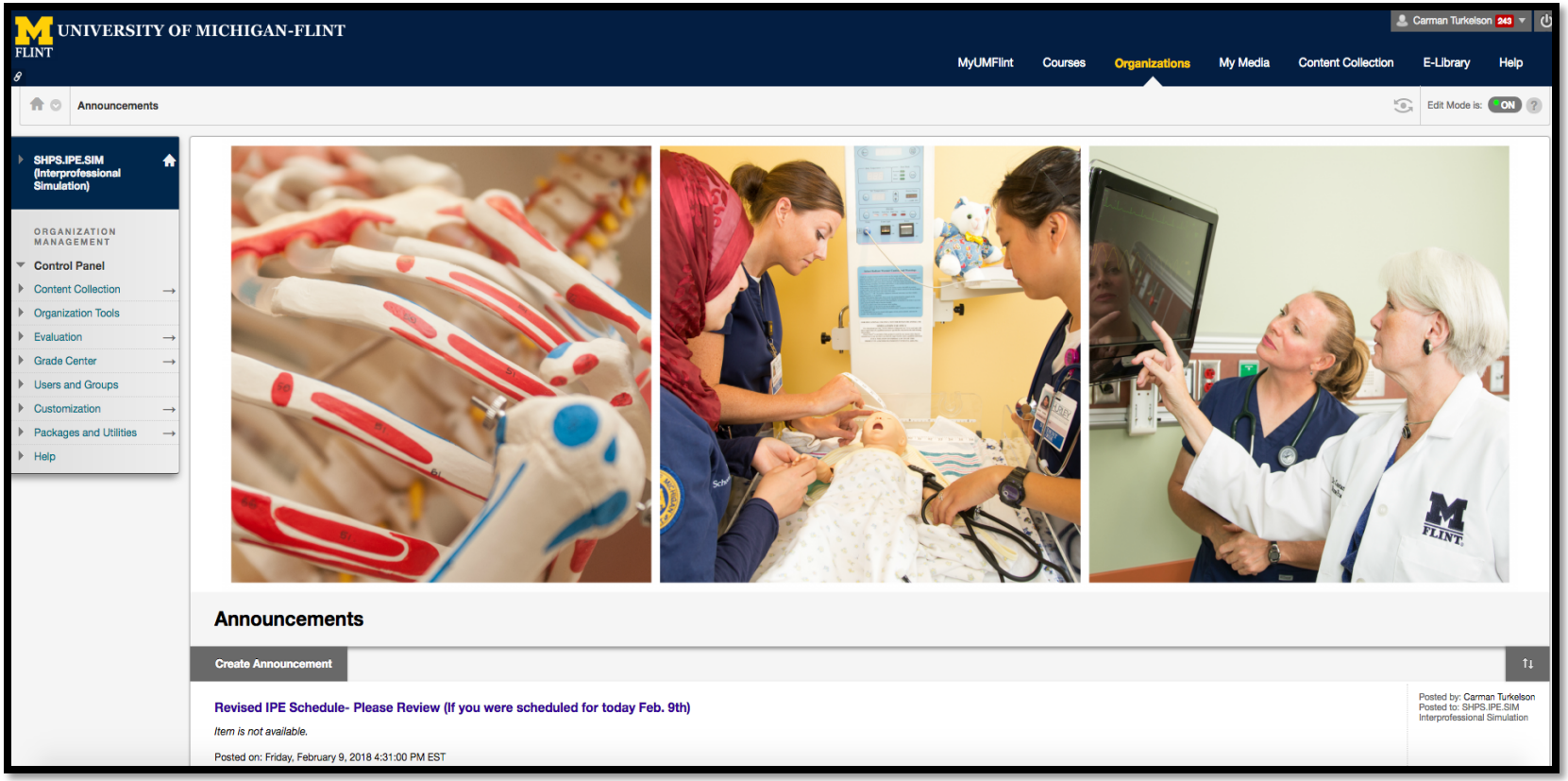
Tele-Presence Robot

- The study results are summarized as follows:
  - High student satisfaction with the telepresence of a member of the interprofessional team during simulation, and…
  - Significant benefit to having the presence or tele-presence of all participants for debriefing (Rudolph et al., 2017).
  - Faculty telepresence in simulation and other educational activities was viewed positively by students (Sampsel et al., 2011; Sampsel et al., 2014).

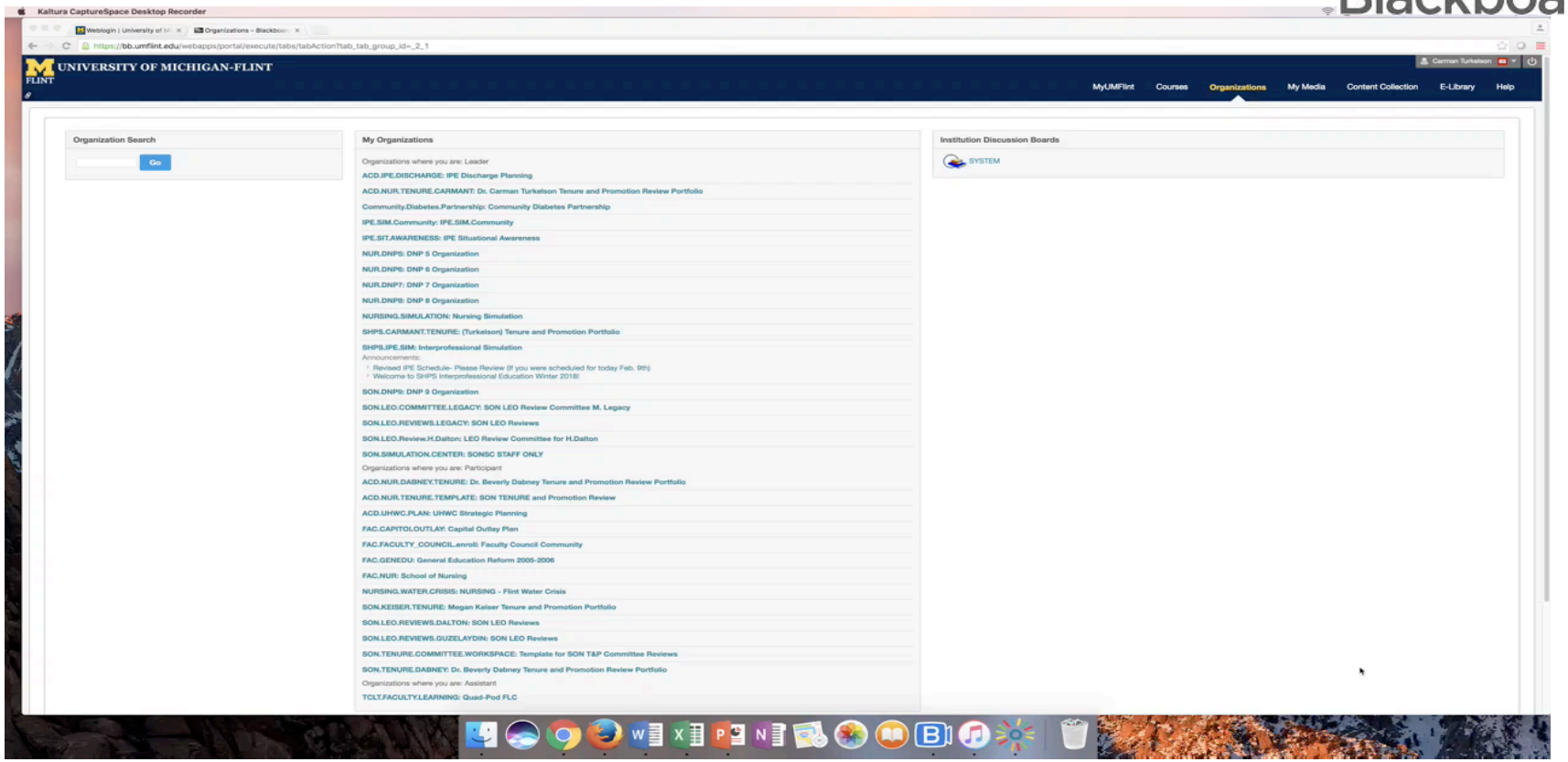
Exemplars of Technology Use for IPE Simulation

- Learning Management Systems (LMS)
- Virtual simulation platform (EMS)
- Telesimulation with Virtual Meeting Platform
- Tele-health Robot

LMS: Blackboard



LMS: Blackboard



Virtual Simulation Platform

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Case Details

Case Description

BACKGROUND:

Joe Jackson is a 60-year-old Caucasian male who was recently admitted S/P fall down a flight of stairs with loss of consciousness. His wife reports he had at least 3 to 4 cocktails that evening. He sustained a fractured right wrist and right frontal fracture with a small amount of underlying traumatic subarachnoid hemorrhage. He has been seen by both orthopedic surgery and neuro surgery and no surgical intervention is planned. He has a cast on his right wrist and has been admitted to the regular medical floor for observation. Physical and occupational therapy evaluations have been ordered but are not yet complete.

Past Medical history includes diabetes type II, obesity, alcoholic cirrhosis, HTN, CAD, hyperlipidemia.

Social History: Lives in two-story house with wife, two dogs and a cat. He admits to drinking 1-2 drinks every evening and smoking 1/2 pack per day for 40 years.

History of Present Illness

Mr. Jackson (Joe) fell down a flight of stairs last night with a positive loss of consciousness and was taken to the emergency department by EMS. He complained of right wrist pain and headache. He underwent an X-Ray of his right wrist, which was positive for a fracture, a head CT that revealed a non depressed linear right frontal skull fracture with small amount of underlying traumatic subarachnoid hemorrhage. He also under went CT scans of his cervical spine, pelvis, abdomen, and chest all of which were negative. In the emergency department he was seen by the orthopedic surgery resident who casted his right wrist and cleared him for discharge. Mr. Jackson was also seen by the neurosurgery team who recommended admission for observation with repeat HCT in the morning. Physical therapy and occupational therapy evaluations were ordered but are not yet complete.

Competency/Learning Objectives

Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patient. - *Roles and Responsibilities*
Communicate with professionals in health in a responsive and responsible manner that supports a team approach to the maintenance of health and the prevention and treatment of disease. - *Interprofessional Communication*
Apply relationship-building values and the principle of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient centered care that is safe, timely, efficient, and effective. - *Teams and Teamwork*
Demonstrate effective communication skills with student colleagues and team members from other professions/disciplines and with patients and families. - *Interprofessional Communication*

Specialties

Joe Jackson - S/P Fall with TBI

★★★★★ (8) Case Genealogy

Chief Complaint

Fall with loss of consciousness

Category

Adult - Male, Medical, Other

Copy

This Case is part of your Assignments. Go to Assignments to run this case.

Author: Carman Turkelson, DNP, MSN, RN, CCRN, CHSE,

Visible to: Members of All University of Michigan-Flint School of Nursing

Version: 4

Update Delete

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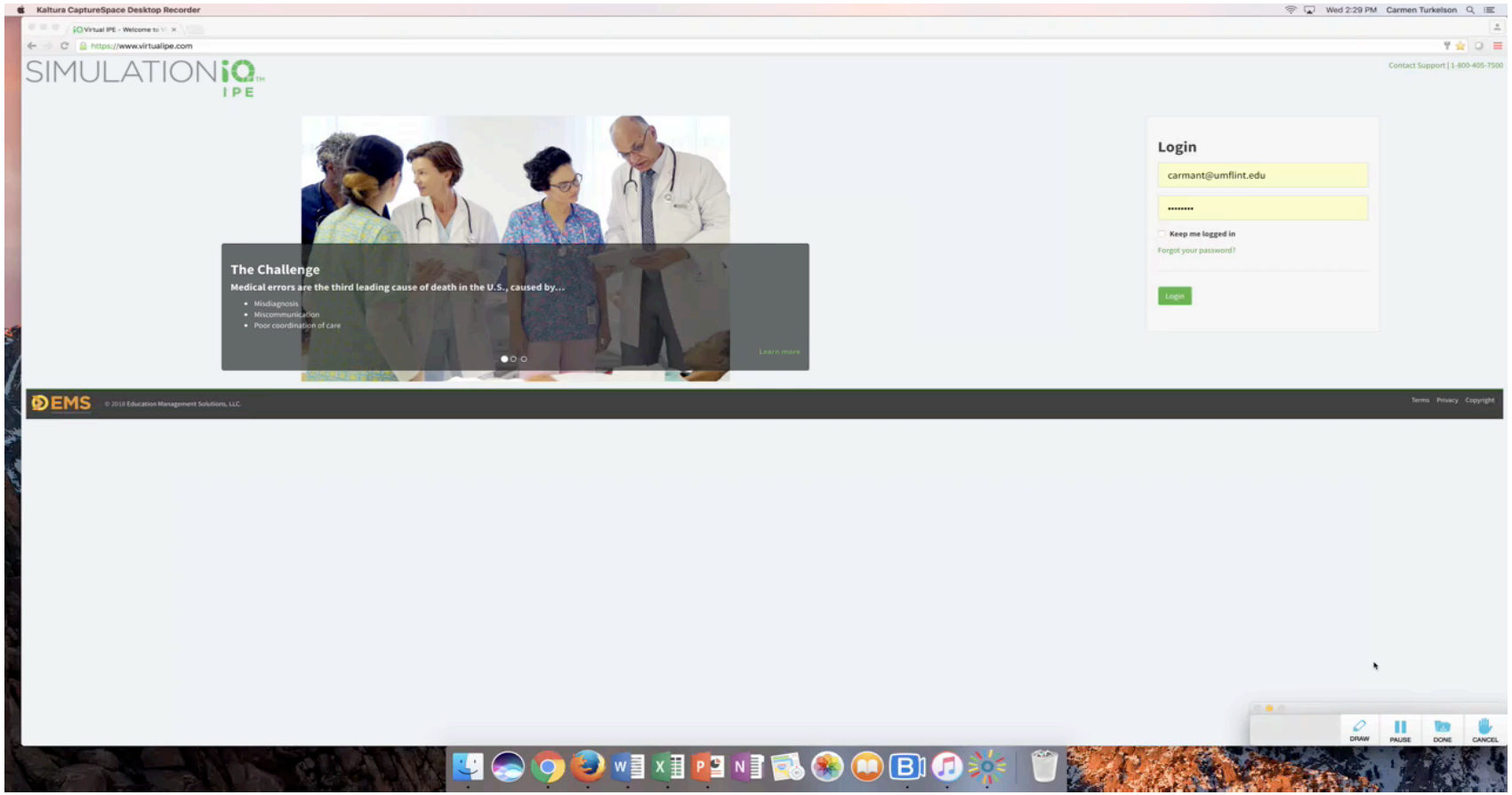

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Reference Materials

Please utilize the information below to assist you with your practice of the communication tools during your session.

The first items are reference tools for you and include the IPE communication and teamwork tools (7 leadership strategies, briefing, CUSS, 3 Ws, SBAR and Situational Awareness) samples. Each of these are also posted on the IPE Black Board site. After these reference tools is a series of videos. These are for you to view as a team and use as you practice the different communication and IPE tools.

- The very first video (Interprofessional Teamwork - Wild Example), watch and then as a team discuss and identify where the healthcare team members could have utilized the teamwork tools. Note this is an in-patient example, all other videos will be community focused.
- After the first Wild example video, there are two sets of videos for the different teamwork strategies.
  - You should watch the first video (example: Briefing: RN-PT Sample), to see the tool in use (e.g. briefing).
  - The second video (example: Briefing: RN-PT - Practice) will provide you with a "lead in" to practice using the tool (e.g. briefing) with your team. Watch the video, practice using the tool- you should do this for each of the videos below. All members of the team need to practice the communication strategies. The Nurse Practitioner students are the team leaders, and should be providing feedback to the team (e.g. RN, PT) as they practice using the tools.
  - The Nurse Practitioner (NP) students should be trying to gather information on the patient (during these practice periods) so feedback to the team should be from a perspective of if there was clear, concise information provided to help the NP then determine a plan of care for the patient. Finally, once the NP has decided the next course of action, the team should be encouraged to use closed loop communication strategies when receiving orders.
  - In the end, each student will need to demonstrate their best version of one of the communication tools listed above. During the session at the end- simply state "This is my best version of SBAR (or what the tool is)" to highlight this is your final version.

Watch the video clips (VC) and practice (P) in the following order:

1. **(VC) Interprofessional Teamwork -** Wild Example (watch this and as a team identify where and what teamwork tools could have been utilized to improve patient care).
2. **(VC) Briefing: RN-PT (Sample 1 and 2)** to see how a briefing should occur prior to care of a patient. As you watch this video- consider if this briefing was adequate or if more was needed. The team should discuss this and then practice an ideal briefing for a homecare visit.
3. **(P) Briefing: RN-PT (Practice)** to have a lead in for your practice of utilizing a briefing. Each team member should practice giving a briefing to the other team members at least 4 times. At the end of the session during the team reflection the one (or more) team members will need to demonstrate their best version of a briefing for this patient. During the practice sessions, team members should provide each other with feedback.
4. **(VC) Physical Therapy Assessment**- watch this video to see the assessment findings from Physical Therapy. Use the information gathered here as you plan your communication strategies.
5. **(VC) 3 Ws and CUSS: PT-Family-RN (SAMPLE)** to see the PT interaction with the patient family and Nurse (use of 3 Ws and CUSS). As you watch this video, consider any information you observe during the patient family member-nurse interaction, and if there is opportunity to use the communication strategies with the family member. Also consider what information if any you would communicate to another provider.
6. **(P) 3Ws-CUSS: PT- Family-RN (Practice)** lead in to practice utilization of 3 Ws and CUSS tool.
7. **(VC) Nurse-NP contact**- watch this video to see the nurse contacting the provider.
8. **(VC) SBAR: RN-NP -Telecommunication (Sample)** to see how the RN communicates using SBAR to the Nurse Practitioner (NP). Observe if the RN used closed loop communication. As the NP consider what additional information would you need, consider what your plan of care would include and then provide this direction to the team as you practice these tools. Again, as you watch this, consider anything that could have been done differently or better when giving SBAR report.
9. **(P) SBAR: RN-NP Phone Scene (Practice)** to have a lead in for your practice of providing a report to the provider about a change in the patient's condition. As before, each team member should practice this communication at least 4 times to the other team members. In the final team reflection one (or more) team members should demonstrate this communication.

After you have completed the practice, you can move into the final phase of the assignment, which is where the team will demonstrate their best version of each tool. In this phase, all team members will need to demonstrate at least one of the communication tools in the final team interaction. This can be any of the communication tools, but we recommend that you have at least one Briefing, one 3Ws, one CUSS, one SBAR-closed loop communication with two team members (one being the NP providing direction and orders) so that all tools are practiced. When the team is ready to move to this phase, please state "this is our final version with the tools you will be doing."

Once all assignments have been completed please complete the critical reflection by answering the 3 questions under My Self-Reflection

Attachments

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Virtual Simulation Platform

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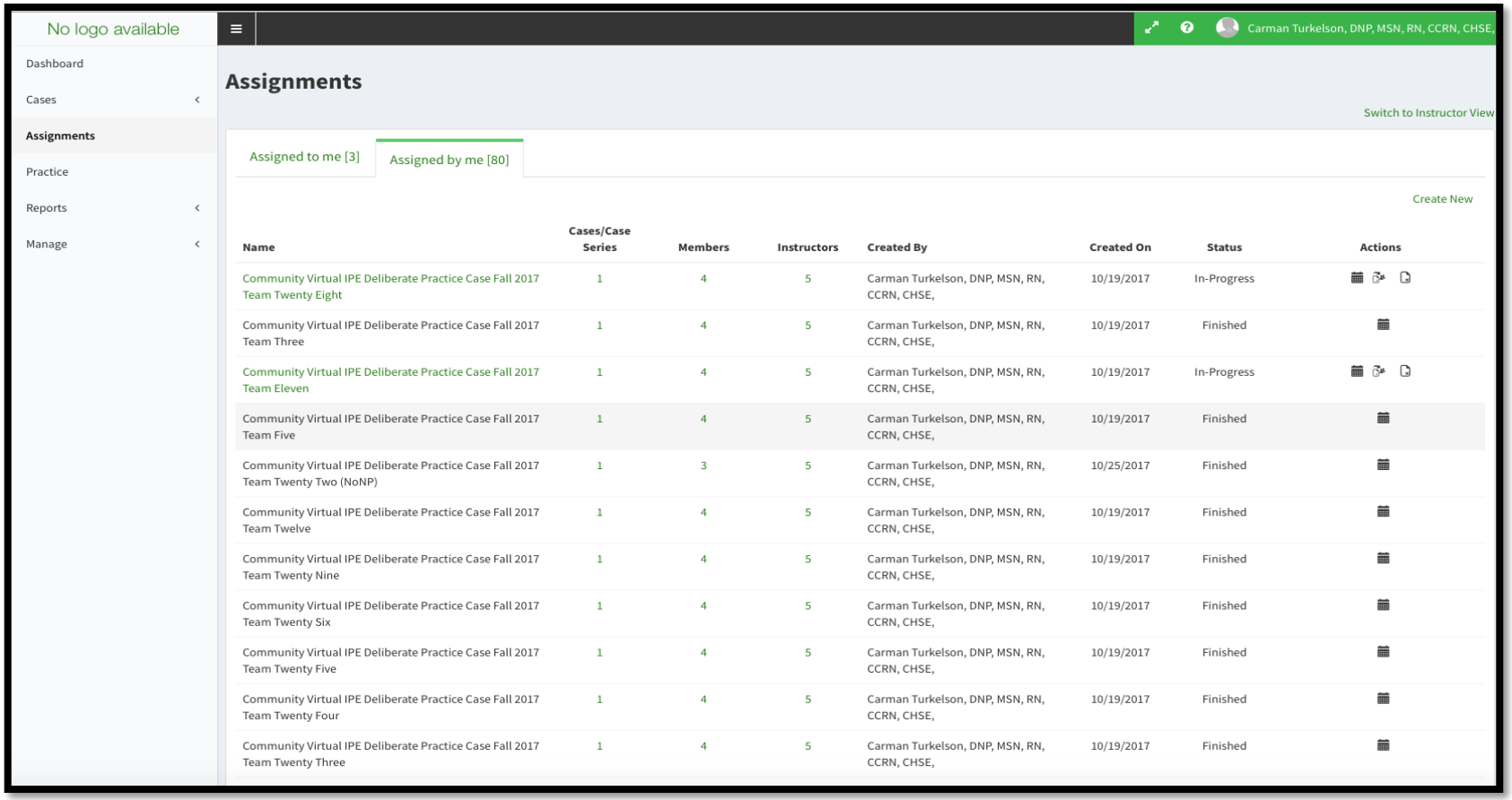

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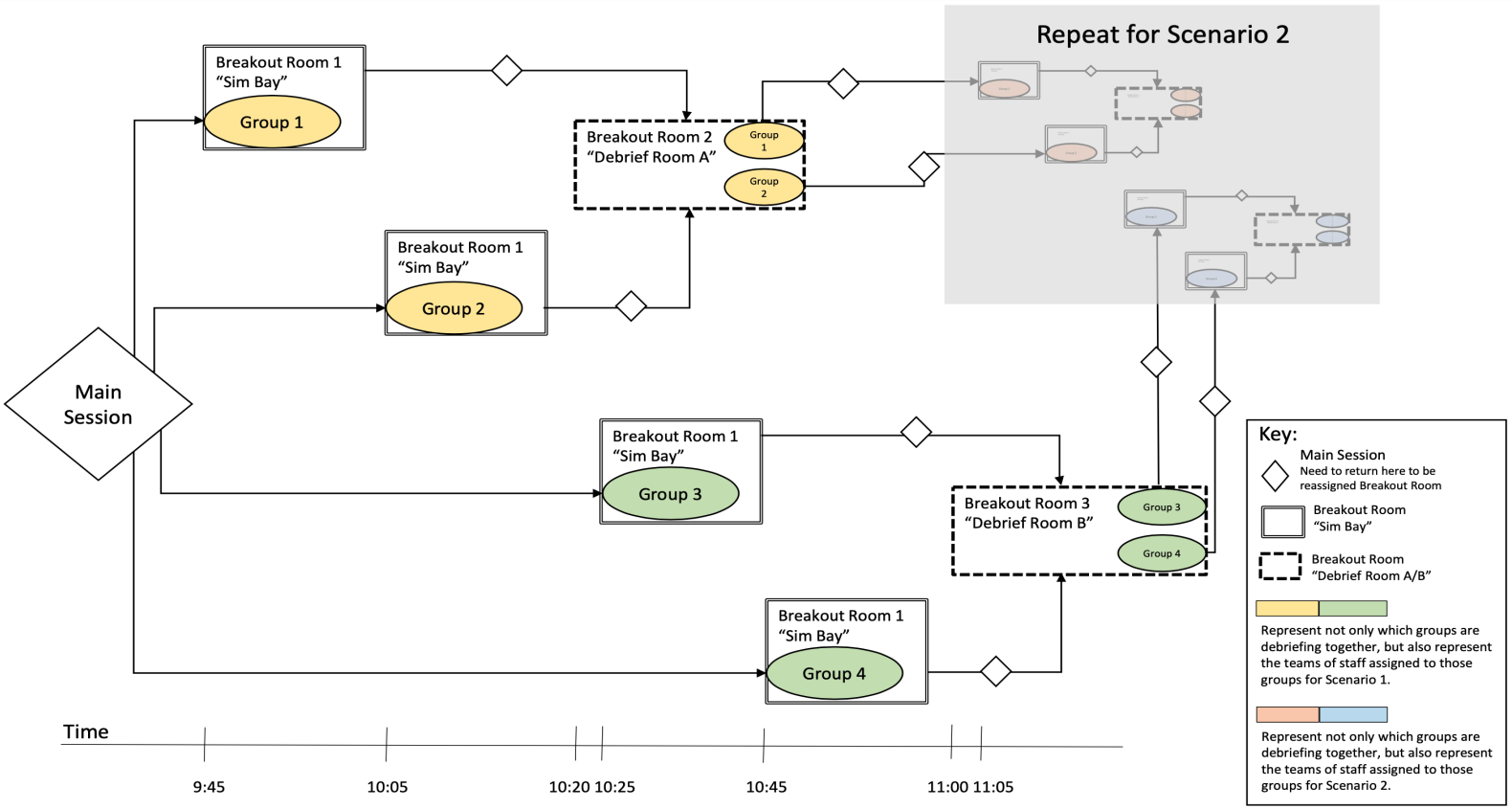
Virtual Meeting Platform

- Zoom
  - iSimulate REALITI
  - Virtual Patient Monitor Simulab

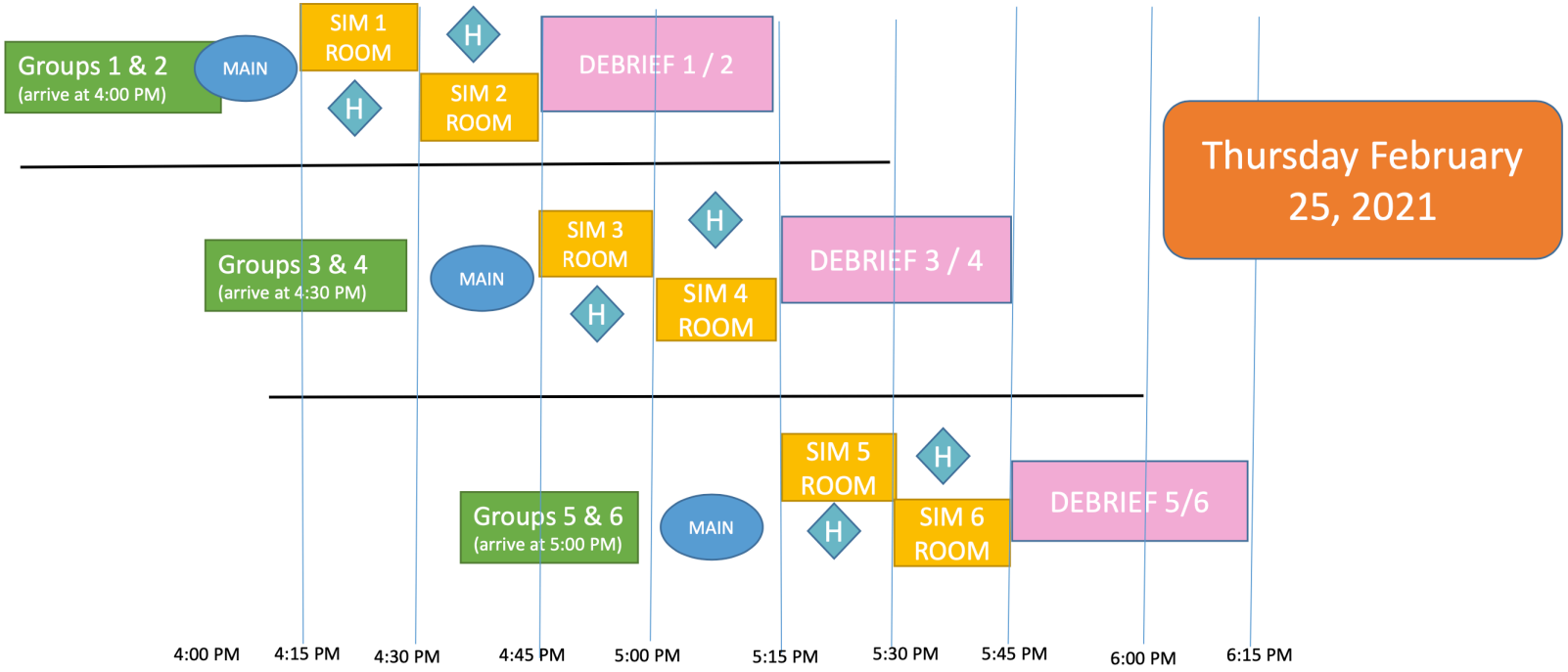
  - https://youtu.be/BzGX9rvb9I8

Virtual Meeting Platform



Exemplar from Simulation and Integrative Learning (SAIL) University of Illinois College of Medicine

Virtual Meeting Platform



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Virtual Meeting Platform

Draft SIM-IPE Schedule

Group 1 and 2 arrive to main room 12pm

Group 1 moves to breakout room/patient room at 1210-1225 for simulation
Group 1 moves to breakout room 2/debriefing at 1225-1300

Group 2 moves to breakout room/patient room at 1225-1240 for simulation
Group 2 moves to breakout room2/debriefing at 1240-1300

Groups 1 and 2 complete at 1300

Group 3 and 4 arrive to main room 1230pm

Group 3 moves to breakout room/patient room at 1240-1255 for simulation
Group 3 moves to breakout room 2/debriefing at 1255-1330

Group 4 moves to breakout room/patient room at 1255-1310 for simulation
Group 4 moves to breakout room2/debriefing at 1310-1330

Groups 3 and 4 complete at 1330

Group 5 and 6 arrive to main room 1300pm

Group 5 moves to breakout room/patient room at 1310-1325 for simulation
Group 6 moves to breakout room 2/debriefing at 1325-1400

Group 4 moves to breakout room/patient room at 1325-1340 for simulation
Group 4 moves to breakout room2/debriefing at 1340-1400

Groups 5 and 6 complete at 1400

Group 7 and 8 arrive to main room 1330pm

Instructor Simulation Progression Outline: Virtual Simulated Interprofessional Education (Sim-IPE)

Course Simulation Based Education Proposal

SCENARIO TITLE	Mr. Collins IPE CPR
TARGET LEARNERS	NUR 250, 320, 862 and PTP 753
SCENARIO AUTHORS	C. Turkelson, M. Keiser, R. Buterakos, L. Smith, A. Yorke
AUTHOR INSTITUTIONS	University of Michigan-Flint School of Nursing & College of Health Sciences Physical Therapy Department
DATE OF DEVELOPMENT	Original June 2014; Revisions December 2020 for virtual Simulated IPE Event.

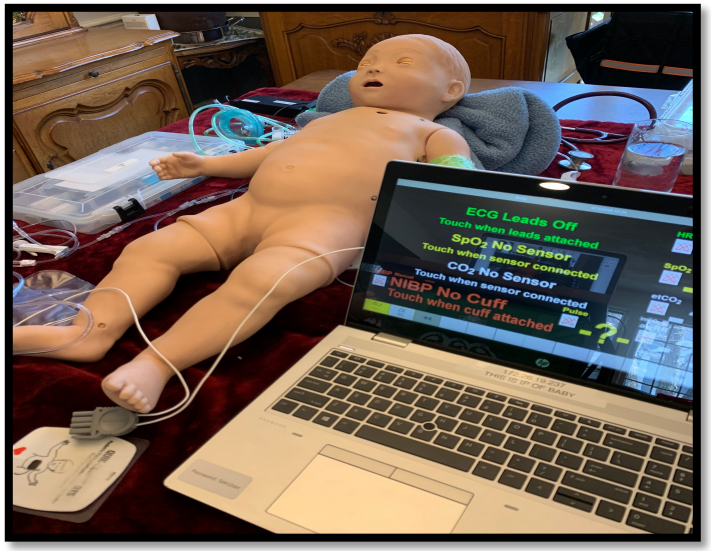
Needs Assessment: Ineffective communication among health care professionals is one of the leading causes of medical errors and patient harm (The Joint Commission [TJC], 2012; 2015). In fact miscommunication and lack of team collaboration has been recognized as one of the most frequent root causes of sentinel event reports to The Joint Commission (2012; 2015) and was recognized as the primary root cause of 82% of all sentinel events in 2010. In addition to the catastrophic human toll, errors resulting from poor communication and inevitably ineffective team performance have a significant financial impact on the healthcare system costing an average of $17 to $29 billion per year (Aggarwal, Sands, & Schneider, 2010; Andel, Davidow, Hollander, Moreno, 2012; Botwinick et al., 2006; Institute of Medicine [IOM], 2001, 2003; Zeister & Nash, 2010; Zhang, Thompson & Miller, 2011).

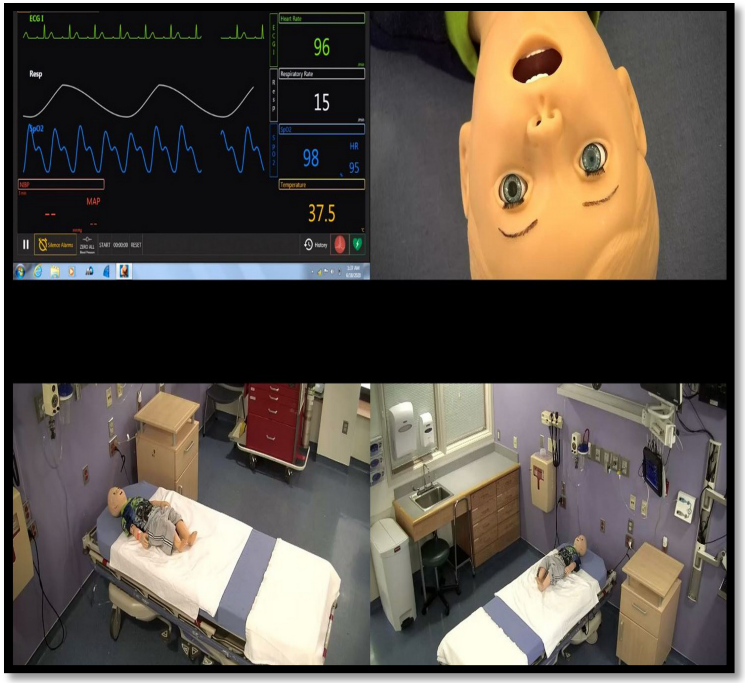
Historically healthcare professionals have been trained predominantly in professional silos within their separate disciplines, potentially undermining a collaborative team approach to patient care (Cooper, Carlisle, Gibbs, & Watkins, 2001; Frenk et al., 2010; IOM, 2003, 2010; World Health Organization [WHO], 2010; Zhang et al., 2010). As a result, future healthcare professionals often lack interprofessional training on the critical, but non-technical, knowledge, skills, and attitudes (KSAs) essential for effective communication and teamwork (Enlow, Shanks, Guhde, & Perkins, 2010; Jankouskas, Haidet, Hupcey, Kolanowski, & Murray, 2011). In addition, and perhaps even more importantly, future healthcare professionals rarely, if ever, have an opportunity to practice these critical teamwork skills with other interprofessional team members in a safe structured format with rapidly evolving potentially life- threatening clinical events (Enlow et al., 2010; Jankouskas et al., 2011; Steinemann et al., 2012; Vyas, McCulloh, Dyer, Gregory, & Higbee, 2012; Weaver et al., 2010).

Communication and ultimately teamwork is a critical element across the continuum of healthcare for high quality, effective, efficient, and safe patient care. Now more than ever, it is imperative for future healthcare professionals to be prepared to communicate, collaborate, coordinate, and jointly problem solve with multiple professionals to meet the growing demands of the increasingly complex healthcare needs of society (Frenk et al., 2010; IOM 2003, 2010; IEPC, 2011; 2016; Josiah Macy Foundation, 2010; WHO, 2010). In order to improve quality and safety for our patients and address the multifaceted needs of a dynamic healthcare system, IPE must be made a priority initiative and expectation for

INACSL Standards Committee (2016, December). INACSL Standards of Best Practice: Simulation℠ Simulation-enhanced interprofessional education (sim-IPE). Clinical Simulation in Nursing, 12(S), S34-S38. http://dx.doi.org/10.1016/j.ecns.2016.09.011.
CLT 5/2014; CLT, MK, RB, LMS, AY 12/20.

Virtual Meeting Platforms





The Clinical Teacher, First published: 12 October 2020, DOI: (10.1111/tct.13273)

Virtual Meeting Platform

- Resources to help get you started:
  - *Navigating Uncharted Waters: Simulation in the Age of COVID 19"* webinar series. All recordings can be found on our website: https://chicago.medicine.uic.edu/uic-sail-simulation-webinars-weekly/.
  - Diaz, M. C. G., & Walsh, B. M. (2020). Telesimulation-based education during COVID-19. *The clinical teacher*.
  - Link to iSimulate Realiti website: https://www.isimulate.com/realiti360/
  - Link to Simulab Virtual Patient Monitor https://www.simulab.com/products/virtual-patient-monitor-0

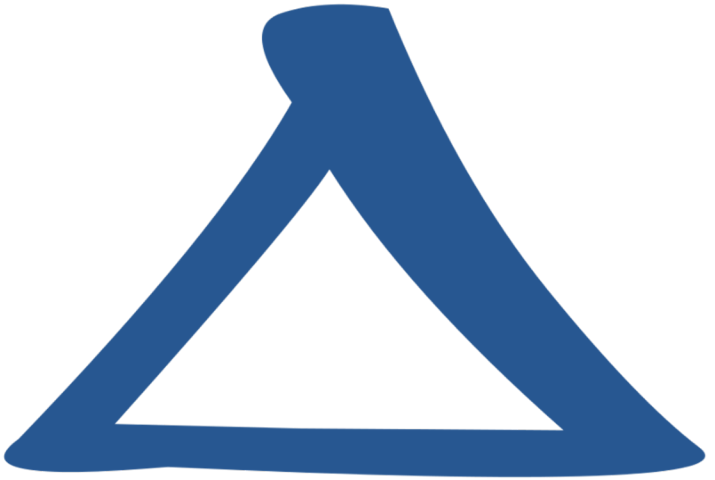
Tele-presence Robot

- Example here…

Reflection Point

Use the handout technology template IMSH 2021

Brainstorm the design a Sim-IPE with the use of one or more available technologies.



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References

Abelson J, Silverman E, Banfelder J, Naides A, Costa R., Dakin G. Virtual operating room for team training in surgery. The American Journal of Surgery 2015;210:585-590.

Ali NS, Carlton KH, Ali OS. Telehealth education in nursing curricula. Nurse educator, 2015;40:266-269.

Baker A. Crossing the quality chasm: a new health system for the 21st century. BMJ: British Medical Journal 2001;323:1192.

Baker R, Camosso-Stefinovic J, Gillies C, Shaw EJ, Cheater F, Flottorp S, Robertson N. Tailored interventions to overcome identified barriers to change: effects on professional practice and health care outcomes. Cochrane Database Systematic Reviews 2010; Issue 3.

Benhuri G. (2010). Teaching community telenursing with simulation. Clinical Simulation in Nursing 2010;6:e161-e163.

Botwinick L, Bisognano M, Haraden C. Leadership Guide to Patient Safety. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2006. Available at http://www.ihi.org/resources/Pages/IHIWhitePapers/LeadershipGuidetoPatientSafetyWhitePaper.aspx. Accessed June 11, 2018.

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References

Brandt B. Interprofessional Education and Collaborative Practice: Welcome to the “New” Forty-Year-Old Field. The Advisor (Journal of the National Association of Advisories for the Health Professions. 2015; Available at http://www.naahp.org/ Publications/The Advisor Online/Vol35No1/35102.aspx. Accessed June 11, 2018.

Brown B, Brehm B, Dodge HS, Diers T, Van Loon RA, Breen P, Grant VA, Wall A. Evaluation of an interprofessional elective course for health professions students: Teaching core competencies for interprofessional collaborative practice. H & IP 2016;2:1-12.

Caylor S, Aebersold M, Lapham J, Carlson E. The use of virtual simulation and a modified TeamSTEPPS™ training for multiprofessional education. Clinical Simulation in Nursing 2015; 11:163-171.

Conde JG, De S, Hall RW, Johansen E, Meglan D, Peng GC. Telehealth innovations in health education and training. Telemedicine and e-Health 2010; 16: 103-106.

Cooper H, Carlisle C, Gibbs T, Watkins C. Developing an evidence base for interdisciplinary learning: A systematic review. Journal of Advanced Nursing 2001; 35: 228-237.

Cook DA, Brydges R, Zendejas B, Hamstra SJ, Hatala R. Mastery learning for health professionals using technology-enhanced simulation: A systematic review and meta-analysis. Academic Medicine 2013; 88: 1178-1186.

References

Cook DA, Hatala R, Brydges R, Zendejas, B, Szostek JH, Wang AT, Hamstra SJ. Technology-enhanced simulation for health professions education: a systematic review and meta-analysis. JAMA 2011; 306: 978-988.

Cox M, Cuff P, Brandt B, Reeves S, Zierler B. Measuring the impact of interprofessional education on collaborative practice and patient outcomes. Washington, D.C. The National Academies Press; 2015.

Cox M, Naylor M. Transforming patient care: Aligning interprofessional education with clinical practice redesign. New York: Josiah Macy Jr. Foundation; 2013.

Diaz, M. C. G., & Walsh, B. M. (2020). Telesimulation-based education during COVID-19. *The clinical teacher*.

Djukic M, Fulmer T, Adams JG, Lee S, Triola MM. NYU3T: teaching, technology, teamwork: a model for interprofessional education scalability and sustainability. Nursing Clinics of North America 2012; 47: 333-346.

Esposito, C. P., & Sullivan, K. (2020). Maintaining clinical continuity through virtual simulation during the Covid-19 pandemic. *Journal of Nursing Education*, *59*(9), 522-525.

Freina L, Ott M. A literature review on immersive virtual reality in education: state of the art and perspectives. In: Proceedings of eLearning and Software for Education (eLSE) Conference. Universitatea Nationala de Aparare; 2015: 133-141.

Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T… Zurayk H. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. Lancet 2010; 376: 9756; 1923-1958.

References

Grady JL. The virtual clinical practicum: an innovative telehealth model for clinical nursing education. Nursing Education Perspectives 2011;32:189-194.

Griswold S, Ponnuru S, Nishisaki A, Szyld D, Davenport M, Deutsch ES, Nadkarni V. The emerging role of simulation education to achieve patient safety: Translating deliberate practice and debriefing to save lives. Pediatric Clinics of North America 2012;59:1329-1340.

Institute of Medicine Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing. The future of nursing: Leading change, advancing health. Washington, DC: National Academies Press; 2011.

Interprofessional Education Collaborative. Core Competencies for Interprofessional Collaborative Practice: 2016 Update. Washington, DC: Interprofessional Education Collaborative; 2016.

Jenson CE, Forsyth DM. Virtual reality simulation: using three-dimensional technology to teach nursing students. Computers Informatics Nursing 2012; 30:312-318.

Kalisch BJ, Aebersold M, McLaughlin M, Tschannen D, Lane S. An intervention to improve nursing teamwork using virtual simulation. Western Journal of Nursing Research 2015; 37(2):164-79.

Khamees, D., Brown, C. A., Arribas, M., Murphey, A. C., Haas, M. R., & House, J. B. (2020). In crisis: medical students in the COVID-19 pandemic. *AEM Education and Training*, *4*(3), 284-290.

References

Kenaszchuk C, MacMillan K, van Soeren M, Reeves S. Interprofessional simulated learning: short-term associations between simulation and interprofessional collaboration. BMC Medicine 2011; 9:29.

Knebel E, Greiner AC. Health professions education: A bridge to quality. National Academies Press; 2003.

McGaghie, W. C., Issenberg, S. B., Petrusa, E. R., & Scalese, R. J. A critical review of simulation based medical education research: 2003–2009. Medical Education 2010; 44:50-63.

Mennenga HA, Johansen L, Foerster B, Tschetter L. Using simulation to improve student and faculty knowledge of telehealth and rural characteristics. Nursing Education Perspectives 2016; 37(5):287-8.

Michalec B, Giordano C, Pugh B, Arenson C, Speakman E. Health professions students' perceptions of their IPE program: Potential barriers to student engagement with IPE goals. Journal of Allied Health 2017; 46:10-20.

Morin, K. H. (2020). Nursing Education After COVID-19: Same or Different?. *Journal of Clinical Nursing*.

Musser MR, Dipietro N, Walden L, Montenery S, Terrell S. Development of a novel interprofessional education activity with undergraduate students: Design, assessment, and lessons learned. Health and Interprofessional Practice 2016; 3:1-12.

References

National League for Nursing [NLN]. Interprofessional collaboration in education and practice: A living document for the National League for Nursing 2015. Available at http://www.nln.org/docs/default-source/default-document-library/ipe-ipp-vision.pdf?sfvrsn=14. Accessed June 11, 2018.

Palaganas JC, Epps C, Raemer DB. A history of simulation-enhanced interprofessional education. Journal of Interprofessional Care 2014; 28:110-5.

Pittenger AL. The use of social networking to improve the quality of interprofessional education. American Journal of Pharmaceutical Education 2013; 77(8):174.

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). The Cochrane Library. 2013 Mar 28.

Reeves S, Fletcher S, Barr H, Birch I, Boet S, Davies N, McFadyen A, Rivera J, Kitto S. A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. Medical Teacher 2016;38:656-68.

Rudolph A, Vaughn J, Crego N, Hueckel R, Kuszajewski M, Molloy M, Brisson III R, Shaw RJ. Integrating telepresence robots into nursing simulation. Nurse Educator 2017;42(2):E1-4.

Sabus C, Sabata D, Antonacci D. Use of a virtual environment to facilitate instruction of an interprofessional home assessment. Journal of Allied Health 2011;40(4):199-205.

References

Sampsel D, Bharwani G, Mehling D, Smith S. Robots as faculty: Student and faculty perceptions. Clinical Simulation in Nursing 2011;7:e209-18.

Sampsel, D., Vermeersch, P., & Doarn, C. R. (2014). Utility and effectiveness of a remote telepresence robotic system in nursing education in a simulated care environment. Telemedicine and e-Health, 20(11), 1015-1020.

Schmitt M, Blue A, Aschenbrener CA, Viggiano TR. Core competencies for interprofessional collaborative practice: reforming health care by transforming health professionals' education. Academic Medicine 2011;86(11):1351.

Shrader S, Kostoff M, Shin T, Heble A, Kempin B, Miller A, Patykiewicz N. Using communication technology to enhance interprofessional education simulations. American Journal of Pharmaceutical Education 2016;80:13.

Sweigart LI, Umoren RA, Scott PJ, Carlton KH, Jones JA, Truman B, Gossett EJ. Virtual TeamSTEPPS® simulations produce teamwork attitude changes among health professions students. Journal of Nursing Education 2016;55:31-5.

Thibault G. Reforming Health Professions Education Will Require Culture Change and Closer Ties Between Classroom and Practice. Health Affairs 2013;32:1928-1932.

Thistlethwaite J. Interprofessional education: a review of context, learning and the research agenda. Medical Education 2012; 46:58-70.

References

Torres, A., Domańska-Glonek, E., Dzikowski, W., Korulczyk, J., & Torres, K. (2020). Transition to on-line is possible: solution for simulation-based teaching during pandemic. *Medical education*.

Tullmann D, Shilling A, Goeke L, Wright E, Littlewood K. Recreating simulation scenarios for interprofessional education: an example of educational interprofessional practice. Journal of Interprofessional Care 2013; 27:426-428.

Weaver SJ, Lyons R, DiazGranados D, Rosen MA, Salas E, Oglesby J, Augenstein JS, Birnbach DJ, Robinson D, King HB. The anatomy of health care team training and the state of practice: A critical review. Academic Medicine 2010;85:1746-60.

Wiecha J, Heyden R, Sternthal E, Merialdi M. Learning in a virtual world: experience with using second life for medical education. Journal of Medical Internet Research 2010;12:e1.

World Health Organization (WHO). Framework for action on interprofessional education and collaborative practice. Geneva: World Health Organization. Available at: http://whqlibdoc.who.int/hq/2010/WHO_HRH_HPN_10.3_eng.pdf. Accessed June 11, 2018.

Youngblood P, Harter PM, Srivastava S, Moffett S, Heinrichs WL, Dev P. Design, development, and evaluation of an online virtual emergency department for training trauma teams. Simulation in Healthcare 2008;3(3):146-53.

Zhang C, Thompson S, Miller C. A review of simulation-based interprofessional education. Clinical Simulation in Nursing 2011; 7:e117-e126.