Simulation Faculty Orientation Module
At the end of this presentation the viewer will be able to:

- Define simulation
- Identify types of events supported by the GVSU Simulation Center
- Understand how to submit a simulation request
- Describe how to effectively design a simulation (i.e. write objectives, design scenarios)
- Identify best practices in simulation
What is Simulation?

- An educational strategy in which a particular set of conditions are created or replicated to resemble authentic situations that are possible in real life. Simulation can incorporate one or more modalities to promote, improve, or validate a participant’s performance. (INACSL Standards Committee, 2016)

- This is done through the use of task trainers, manikins, standardized patients, virtual technology, review of recorded student videos, briefing and debriefing exercises.
Advantages of Simulation

• Encourages active, experiential learning.
• Is student centered.
• Provides a “safe” environment for making mistakes and learning from them.
• Develops critical thinking skills.
• Encourages self-reflection and evaluation.
• Provides opportunity to evaluate students in low volume/high risk patient situations.
• Incorporating simulation into programs enhances learning and builds confidence.
Key Terms

- **Briefing**: An activity preceding the start of a simulation where the participants receive essential information about the scenario such as background information, vital signs, instructions, or guidelines.

- **Conceptual Fidelity**: In healthcare simulation, ensures that all elements of the scenario relate to each other in a realistic way so that the case makes sense as a whole to the learner(s) (low, medium, & high fidelity exist).

- **Confederate**: An individual other than the patient, who is scripted in a simulation to provide realism, additional challenges, or additional information for the learner.

- **Debriefing**: An activity that follows a simulation experience and led by a facilitator. To encourage participants’ reflective thinking and provide feedback about their performance while various aspects of the completed simulation are discussed.

- **Facilitator**: An individual who is involved in the implementation and/or delivery of simulation activities (ex: faculty, educators, etc.)

- **Manikin**: A life-sized human like simulator representing a patient for healthcare simulation and education. Manikins can be full or partial body simulators that have varying levels of physiologic function and fidelity.

- **Moulage**: The application of makeup and molds to a human or simulator’s limbs, chest, head, etc. to provide elements of realism (such as blood, vomitus, open fractures, etc.) to the training simulation.

- **Psychological Safety**: A feeling (explicit or implicit) within a simulation-based activity that participants are comfortable participating, speaking up, sharing thoughts, and asking for help as needed without concern for retribution or embarrassment.

- **Reflective Thinking (guided reflection)**: A process to assist learners in identifying their knowledge gaps and demonstrating the areas in which they may need further improvement; this reflection requires conscious self-evaluation to deal with unique patient situations.
Key Terms Continued

- **Scenario**: A description of a simulation that includes the goals, objectives, debriefing points, narrative description of the clinical simulation, staff requirements, simulation room set up, simulators, props, simulator operation, and instructions for SPs.

- **Simulation Patient/Standardized Patient (SP)**: An individual who is trained to portray a real patient in order to simulate a set of symptoms or problems used for healthcare education, evaluation, and research.

- **Simulation Voicer**: Unique to Grand Valley State University’s Simulation Center, the simulation voicer runs the manikin simulation scenario via the programmed software while being the voice of the manikin patient.

- **Task Trainer**: A device designed to train in just the key elements of the procedure or skill being learned, such as lumbar puncture, chest tube insertion, central line insertion or part of a total system.

- **Virtual Patient**: A computer program that simulates real-life clinical scenarios in which the learner acts as a healthcare provider obtaining a history and physical exam, and making diagnostic and therapeutic decisions.

- **Virtual vs. Augmented Reality**: Virtual reality is computer-generated three-dimensional environment that gives an immersion effect. Augment reality is technology that layers computer generated enhancements atop an existing reality in order to make it more meaningful through the ability to interact with it. Augmented reality and virtual reality are inverse reflections of one in another with what each technology seeks to accomplish and deliver for the user. Virtual reality offers a digital recreation of a real life setting, while augmented reality delivers virtual elements as an overlay to the real world.

**Reference**
GVSU Simulation Team

The mission of the Grand Valley Simulation Team is to promote interprofessional health care delivery by enhancing professional competencies through a safe, interactive, and engaging learning environment.
Simulation Advisory Committee

The Grand Valley State University (GVSU) Simulation Advisory Committee (SAC) is comprised of GVSU faculty from various health disciplines that offer expert recommendations to promote simulation methodologies that enrich student learning experiences and support the development of professional competencies.
Event Types Supported by the GVSU Simulation Center

• **Patient Simulator**
  – 11 high-fidelity manikins including: a maternal/fetal simulator, newborn simulators, pediatric simulators, and several adult female and male simulators.
  – Several low fidelity manikins.
  – A wide variety of task trainers, ranging from anatomical models to augmented reality.

• **Standardized Patient (SP)**
  – SPs are community members that are recruited and hired as temporary employees that provide an opportunity for students to practice assessment and communication skills.
  – Adult SP’s are trained to portray patients with a variety of physical & mental health conditions.
  – Child SP’s “act” as themselves. They do not role-play cases.
  – The GVSU SP pool includes over 500 adults and children.
  – SP’s with specific conditions are recruited by faculty.

• **Assessment/Skills Lab**

• **Audio/Video Livestreaming and Recording**
Scheduling an Event in the Simulation Center

Due Dates

- **March 1st** for spring/summer semester
- **July 1st** for fall semester
- **November 1st** for winter semester

Submit your request through the GVSU simulation website: [https://www.gvsu.edu/simcenter/](https://www.gvsu.edu/simcenter/)

Click on *Submit a Request* and fill out the Request Form.
Patient Simulator Events

Contact: Samantha Worthem, Simulation Coordinator, 1-3059, scanlons@gvsu.edu.

- Table top exercises are required for all new manikin simulations.
- In your simulation request, list scenario description, supplies needed, and number of briefing/debriefing rooms needed.
- Manikins and rooms are assigned based on the best fit for the objectives of the event and availability.
- Faculty livestream viewing area is in CHS 305.
- Contact coordinator for any changes or equipment needs for simulations.
Standardized Patient (SP) Events

Contact: Cindy Bartman, Standardized Patient Coordinator, 1-5984, bartmanc@gvsu.edu

– Faculty requesting an SP event for the first time MUST meet with SP coordinator first.
– Cases and schedules should be provided with event request.
– SPs are paid for a minimum of three hours every time they work. Please keep this in mind when planning events so that resources are utilized most efficiently.
Nursing Lab Events

Contact: Carla Foster, Learning Resource Coordinator, 1-5925, fostecar@gvsu.edu

- Lab set-up for undergraduate and graduate nursing courses.
- Equipment is available for check out in CHS 353 for both faculty and students.
- Lab assistants are available to help with any lab set-up issues.
- Contact the coordinator for any changes with lab set-ups.
Contact: **Lisa Naymick**, Clinical Simulation and Learning Resource Specialist, 1-5667, naymickl@gvsu.edu

- Coordinates lab set-up for Audiology, PAS, PT, OST, SLP, Sonography, TR, & Clinical Dietetics.
- Equipment check out in CHS 353 or RFH 021.
- Lab assistants are available to help with any lab set-up issues.
- Contact the coordinator for any changes with lab set-ups.
Audio/Video Requests

Contact: John Sterling, Multi-Media Coordinator, sterlijo@gvsu.edu, 1-5799 or Jonathon Rabideau, Simulation Operations Specialist, rabidjon@gvsu.edu, 1-5655

– Both CHS and RFH are equipped with state-of-art recording/evaluation software systems. Use of the systems are requested through the simulation event request process.
– Other video requests to record a guest speaker, class, or special event, etc. can also be submitted through the GVSU simulation event request process.
– Video editing is done as soon as possible in accordance with other scheduled events.
– If the Simulation Center is unable to accommodate your request, recording equipment is available to check out and record speaker/event via a student or self.
**Simulation Design Resources**

- Simulations are created to meet objectives and attain expected outcomes.

Figure 1. Jeffries, P. R., Thomas Dreifuerst, K., Kardong-Edgren, S., & Hayden, J. (2015). Faculty Development When Initiating Simulation Programs: Lessons Learned From the National Simulation Study. *Journal Of Nursing Regulation, 5*(4), 17-23.
Adult Learning Theories

Simulation designs incorporate best practices from adult learning, education, instructional design, clinical standards of care, and evaluation.

• **Andragogy** (Malcolm Knowles):
  - Tapping into Prior Experiences

• **Transformational Learning** (Jack Mezirow):
  - Revealing Perspectives to Create Aha Moments

• **Experiential Learning** (David Kolb):
  - Tying Reality to Create Meaning
Develop broad and specific objectives to achieve optimal outcomes.

Use measurable objectives.

Facilitators are responsible for ensuring objectives are met throughout the simulation.

Design objectives for the learning level of the participants.

Determine which objectives the participants will see before or after the simulation.

INACSL Standards Committee (2016)
SMART Objectives

• **Specific**: What exactly are we going to do for whom?

• **Measureable**: Is it quantifiable and can we measure it?

• **Achievable**: Can we get it done in the proposed timeframe with the resources and support we have available?

• **Realistic**: Will it have an effect on the desired goal or outcome?

• **Time-Phased**: When will this objective be accomplished?

INACSL Standards Committee (2016)
All simulations require participant evaluation. The Kirkpatrick Model is a commonly used evaluation tool to look at measurable objectives and outcomes.

Criteria include:

- Determine the method of participant evaluation before the simulation based experience.
- Simulation-based experiences may be selected for formative evaluation.
- Simulation-based experiences may be selected for summative evaluation.

INACSL Standards Committee (2016)
Preparation for Simulation: Faculty

Promote Fidelity
• Treat the simulation like a real clinical experience.

Promote Professional Integrity
• Stress in simulation evokes student responses, such as laughing, joking, or defensiveness.

Acknowledge Student Vulnerability
• Simulation is a safe environment for participants to learn and build upon their skills. Be aware of your responses to student performance.

INACSL Standards Committee (2016)
Promote Professionalism

- Professional appearance and demeanor before, during, and after simulation.

Promote Professional Integrity

- Treat each patient as a real patient, including adhering to HIPAA Privacy Rules.

Prepare for Simulation

- Students are expected to complete any preparation work assigned by the facilitator prior to participating in a simulation.

INACSL Standards Committee (2016)
Briefing: Key Points

- Discussion prior to simulation.
- Can be done as a large group or in individual groups.
- Activities include review of learning objectives, orientation to the environment, and overview of roles.
- Pertinent materials, such as patient charts, labs, diagnostic tests, web-based modules, and health histories are also reviewed.
- Facilitator provides materials.

Tyerman, Luctkar-Flude, Graham, Coffey, & Olsen-Lynch (2016)
Briefing

• The facilitator will clarify learner expectations and assist in the suspension of disbelief to foster learner engagement.

• Works towards achieving learner objectives.

• Clear instruction has been proven to be beneficial in improving learner performance.

• As simulation evolves, emphasis on briefing is expanding in contributing to the learning experience.

Tyerman et al. (2016)
Debriefing: Key Points

• Debriefing is a learned skill.

• The debriefing process enhances learning and heightens participant self-awareness and self-efficacy.

• Debriefing promotes transfer of knowledge, skills, and attitudes while developing the participant into a professional role.

• Unsuccessful debriefing leads to participants’ feeling uncomfortable and not taking the simulation seriously.

INACSL Standards Committee (2016)
The Importance of Debriefing in Clinical Simulation

Empirical studies have demonstrated that learning does not occur in simulation-based education in the absence of debriefing.

Poorly conducted debriefing results in persistent poor clinical judgment.

The quality of debriefing was positively correlated with improved learning outcomes.

Simulation plus theory-based, reflective debriefing led to a significant and measurable difference in nurse practitioners’ critical thinking skills.

Using simulation plus theory-based debriefing allowed instructors to broaden the conversation beyond technical errors and influence learner reflection on professional development.

Student say structured debriefing minimizes their distress and insecurity, provides positive reinforcement, enables interactive practice and encourages students to repeat and participate in the activities.

Students say these debriefing exercises strengthen relationships between themselves and teachers/facilitators and teamwork skills.

Students feel as if their mistakes are not pointed out in a negative way; rather, they are comfortable asking questions and consider criticism during the debrief process as constructive and positive.

(Lippincott Nursing Education, 2018)
Debriefing Principles

- Facilitated by a person(s) competent in the process of debriefing.
- Conducted in an environment that is conductive to learning and supports confidentiality, trust, open communication, self-analysis, and reflection.
- The debrief is facilitated by a person(s) who can devote enough concentrated attention during the simulation to effectively debrief the simulation-based experience.
- Based on a structured theoretical framework.
- Congruent with the participants' objectives and outcomes of the simulation-based learning experience.

INACSL Standards Committee (2016)
Debriefing Assessment for Simulation in Healthcare (DASH)

A good debriefer:

- Establishes and maintains an engaging learning environment.
- Structures the debriefing in an organized way.
- Provokes engaging discussions.
- Identifies and explores performance gaps.
- Help students achieve or sustain good future performance.

- Click here for more information: https://harvardmedsim.org/debriefing-assessment-for-simulation-in-healthcare-dash/

Center for Medical Simulation (2018)
5 Phases of Debriefing

1. Student Reaction Phase
   – Allows students to vent their feelings immediately after the simulation.
   – Invites students to share initial thoughts about the simulation.
   – Students may experience intense emotional responses, especially if the patient suffered a negative outcome.

2. Student Reflection Phase
   – Encourages to reflect on decision making process and on interventions conducted during the simulation.
   – Encourages all participants to participate in the discussion.
   – Observers should be encouraged to provide feedback.
   – Review of own performance video enhances this phase.

3. Responsive Inquiry Phase
   – Stimulate critical thinking and model clinical decision making for the students.
   – The Performance Checklist could be reviewed, including both positive feedback and honest evaluation of events.
   – Review recording with students, allowing facilitator to pause and ask critical thinking questions at pivotal points during the simulation.

4. Integration Phase
   – Link theory to practice.
   – Facilitate transfer of knowledge to clinical setting.
   – Review any pre-simulation learning exercises students completed prior to simulation.
   – Lead guided discussion of concepts and/or major skills such as; therapeutic communication, teamwork, professional communication, patient safety, quality of care considerations, documentation.

5. Closure Phase
   – Conclude the debriefing with the students final thoughts on the scenario – positive or negative.
   – If the scenario was particularly challenging for the students, take care not to offer false praise.
   – Offer an honest appraisal.
Plus-Delta Debriefing

Consists of three questions:
1. What went well?
2. What did not go well?
3. What can we do differently?
Debrief Diamond: Key Phrases to Remember

**Description**
- "So what happened? ... and then what happened next?"
- Continue asking until confident that the details of the scenario have been raised by the candidates.
- "Let's not judge our performance now, let's just focus on what happened"

**Transition**
- "This scenario was designed to show..."
- "Let's address technical & clinical questions. What is the protocol for ...?"
- "How do we normally deal with this clinical situation?"
- "Everyone ok with that?"

**Analysis**
- "How did that make you feel?" So participants then group
  - "Why?" Then use silence
  - "How did you / they do that exactly?"
  - "Why did you respond in that way?" or "Why did you take that action?"
  - "It feels like ... was an issue. Did it feel like that to you?"
  - "What am I hearing from you is ... is that correct?"
  - "This is part of ... (identify the non-technical skill / human factor)
    - "We refer to that as a human factor or non-technical skill, which means ..."

**Application**
- "What other kinds of situations might you face that might be similar? How are they similar?"
- "How might these skills we discussed play out in those situations?"
- "What are you going to do differently in your practice tomorrow?"

Debrief Diamond: Underlying Principles

**Description**
- Situate the debrief in the shared and meaningful activity that occurred.
- Keep the focus dispassionate—discuss what happened but avoid focusing on emotions.
- Listen for emotional responses but resist the temptation to discuss emotions.
- Make sure everyone shares the same understanding of what happened (share the mental model).

**Transition into Analysis by clarifying any technical and clinical issues**
- Spend most of your time in Analysis.
- Deconstruct behaviour into specific actions, and explore what happened in detail.
- Ask about affective responses and validate them.
- Analyse and interpret the activity by applying appropriate frameworks or lenses (such as non-technical skills, or the clinical context surrounding the scenario).
- Keep the discussion positive, and avoid the temptation to focus on "strengths and weaknesses".
- Reflect responses back, allowing participants to amend or augment.

**Transition into Application by reinforcing learning**
- Focus on moving from the specifics of the scenario to the more general world of practice.
- Break behaviours down into specific actions.
- Explore the other kinds of situations that these might apply to.
- Ask what participants will do differently in their practice.

Reflective Journaling

After guided debriefing, students may have more in-depth thought processes initiated. Reflective journaling is recommended for capturing deeper reflection after the debriefing exercise is complete.
Scholarship of Simulation

- Society for Simulation in Healthcare (SSH)
  www.ssih.org

- International Nursing Association for Clinical Simulation (INACSL)
  www.inacsl.org

- Association of Standardized Patient Educations (ASPE)
  www.aspeducators.org

- Interprofessional Education Collaborative (IPEC)
  www.ipecollaborative.org

- National Center for Interprofessional Practice and Education
  www.nexusipe.org
Conclusion

Simulation is a technique used to enhance learning through the use of manikins, standardized patients, task trainers, augmented/virtual reality, and briefing and debriefing exercises.

Simulation involves utilizing adult learning theories, measurable objectives, and realistic outcomes.

Following best practices in simulation includes:

- Training facilitators
- Promoting professional integrity
- Briefing participants
- Debriefing based on theory
- Providing a safe learning environment
References


