

STEPS COMPETENCY FRAMEWORK

JUNE 2025



maxSIMhealth



OntarioTech
UNIVERSITY



Summary of Revisions to the STEPS Competency Framework

(May 2025 Update)

Purpose of Revision

This annual revision (May 2025) of the STEPS Competency Framework was undertaken to clarify, streamline, and align all technical competencies with Miller's Pyramid of Clinical Competence. The revisions also address redundancies, misclassifications, and language ambiguities noted in the August 2024 version.

Key Structural Changes

1. Redundant and Overlapping Competencies Removed or Consolidated

- SIMTECH 6.0 and SIMTECH 12.0 were merged into SIMTECH 5.0: Identification and Use of Healthcare and Simulation Equipment.
- SIMTECH 10.0 was removed due to redundancy with other technical competencies.
- SIMTECH 15.0 was merged into SIMTECH 2.0 (Network and Connectivity Management).

2. Misclassified Competencies Reassigned

- SIMTECH 1.0 (Healthcare Professional Roles) was reassigned to General Competencies.
- SIMTECH 7.0 (Medical Terminology) was reassigned to General Competencies, retained due to relevance for non-clinical learners.
- SIMTECH 16.0 was retained in the Simulation Technology pillar but reworded to clarify the technician's technical support role during educational phases.

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3. Clarifications and Rewording for Clarity

Several competencies were reworded to remove jargon and emphasize technician-level responsibilities. Examples:

- SIMTECH 4.0: Simulation Modalities and Equipment Use
- SIMTECH 11.0: Simulation System Configuration and Operation

4. Educational Principles Pillar Refined

- EDUPRI 7.0 was renamed to Simulation Design Concepts: Realism, Fidelity, and Validity.
- EDUPRI 9.0 (Interprofessional Education Principles) was retained due to its relevance for supporting multi-disciplinary simulation environments.

Alignment with Miller's Framework

Each competency (excluding General Competencies) is now aligned to three levels of Miller's Pyramid:

- Didactic (Knows/Knows How)
- Experiential (Shows How)
- Work-Integrated Learning (WIL) (Does)

Each level includes clear learning objectives to guide didactic instruction, lab activities, and placement experiences.

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Output Format

The revised framework is organized under the following categories:

- Simulation Technology
- Educational Principles
- Safety and Quality Improvement
- General Competencies

Each includes a code, title, description, and Miller-aligned learning objectives.

STEPS Competency Framework



In the context of the STEPS minor program blueprint, which aims to train Simulation Operations Specialists (SOS) through a competency-based curriculum, competencies can be grouped into two broad categories:

1. Technical Competencies: These refer to the hands-on, procedural, and systems-level skills required to operate, maintain, and innovate within simulation-based environments. They are often task-specific and role-dependent.

2. General (Transferable) Competencies: These are non-technical, cross-cutting skills applicable across multiple settings and essential for collaborative, reflective, and professional practice.

This structure of competency framework will help us map both types of competencies to Entrustable Professional Activities (EPAs) and Observational Practice Activities (OPAs). This ensures that:

- Technical skills are evaluated in realistic, performance-based contexts, and
- General competencies are scaffolded through mentorship, reflection, and interprofessional experiences."

Technical Competencies: Simulation Technology

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
SIMTECH 1.0	Technology and Equipment Compatibility	Demonstrate the ability to select, configure, and integrate compatible simulation technologies.	Describe categories of simulation technologies and their compatibility factors.	Demonstrate selecting and configuring compatible systems during scenario setup exercises.	Independently configure and troubleshoot simulation systems during clinical or simulation placements.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
SIMTECH 2.0	Network and Connectivity Management	Apply knowledge of wired and wireless networks to ensure secure and reliable system connectivity.	Explain basic networking concepts such as IP addressing, routing, and connectivity.	Simulate the setup of network configurations in lab settings using simulation equipment.	Maintain network integrity and resolve connectivity issues of simulation equipment in live simulation training environments.
SIMTECH 3.0	Web-Based Applications and Security	Navigate browser-based applications, maintain data security, and apply digital best practices.	Identify common web-based platforms and associated security protocols.	Perform mock navigation and access control settings in a simulated learning management system or scheduling tool.	Manage web-based systems and implement secure access protocols in operational settings.
SIMTECH 4.0	Simulation Modalities and Equipment Use	Operate and differentiate among various simulation modalities, including VR and task trainers.	List and define different simulation modalities (e.g., high-fidelity, VR, task trainers).	Demonstrate setup and basic use of various simulation modalities in a controlled simulated lab environment.	Deploy appropriate modalities independently during simulation training sessions based on learning goals.
SIMTECH 5.0	Identification and Use of Healthcare and Simulation Equipment	Identify and appropriately use equipment commonly found in simulation centers.	Identify and explain the function of key healthcare and simulation equipment.	Practice identifying and connecting equipment to simulation systems in the lab.	Effectively use and maintain the necessary equipment in simulation activities during placement.
SIMTECH 6.0	Technical Problem Solving	Apply structured approaches to troubleshooting technical issues under time constraints.	Describe common technical issues in simulation setups and diagnostic approaches.	Troubleshoot pre-programmed faults or errors in simulation labs.	Resolve real-time technical issues during simulation-based training sessions in the field.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
SIMTECH 7.0	Maintenance and Inventory Management	Perform preventative maintenance, manage inventory, and coordinate repairs.	Explain preventative maintenance schedules and inventory tracking practices.	Conduct mock inventory checks and maintenance routines using checklists.	Perform regular equipment maintenance and inventory management in the field.
SIMTECH 8.0	Simulation System Configuration and Operation	Configure, run, and monitor integrated simulation systems for realistic scenarios.	Outline the components involved in the simulation system configuration.	Operate a full simulation session during simulation labs, under faculty supervision with peers roleplaying as learners.	Independently operate simulation training session in the field, from setup to takedown.
SIMTECH 9.0	Audiovisual Technology and Videography	Use audiovisual tools for scenario capture, playback, and remote streaming.	List components of AV systems and describe their role in simulation.	Set up and test AV systems for capturing and streaming in lab scenarios.	Manage AV recording and playback tools during simulation training sessions in the field.
SIMTECH 10.0	Simulation Software Navigation	Operate software used in scenario authoring, scheduling, and playback.	Recognize the functions of simulation control software tools.	Navigate and edit scenarios using a computer-based simulation software.	Use simulation software independently to schedule, run, and document sessions during placement.
SIMTECH 11.0	Technical Contributions to Prebrief, Brief, and Debrief	Support simulation facilitation by managing technical tools across all phases of simulation.	Explain the phases of simulation (prebrief, brief, debrief) and the technician's technical role.	Role-play as a simulation technician during pre briefing, briefing, and debriefing, and answer technology-related questions.	Support educational teams by managing technological tools and fielding technology-related questions during simulation prebriefing, briefing, and debriefing in the field.

Technical Competencies: Educational Principles

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
EDUPRI 1.0	Communication and Advocacy	Demonstrate effective communication skills with learners, faculty, and technical staff.	Define effective communication strategies in team-based simulation environments.	Roleplay participating in team briefings and advocating for improvements in technologies in mock simulated environments.	Facilitate communication with simulation stakeholders in the field.
EDUPRI 2.0	Conducting Needs Assessments	Support faculty in identifying learning gaps and selecting appropriate simulation modalities.	Understand principles of educational needs analysis for simulation design.	Support a mock needs assessment by identifying technological needs for scenario success.	Assist educators in identifying simulation technological solutions to meet learning needs.
EDUPRI 3.0	Goals and Learning Objectives	Align simulation activities with learning goals and define measurable objectives collaboratively.	Describe how learning objectives shape simulation design.	Map technical support tasks to the given learning objectives in.	Ensure simulation design and technology align with learning objectives in the field.
EDUPRI 4.0	Pilot Testing	Participate in scenario dress rehearsals and test runs to identify and resolve technical limitations.	List the goals and components of a simulation pilot or dress rehearsal.	Participate in simulation testing and document technical improvements.	Coordinate with educators to execute pilot runs and resolve issues pre-delivery.
EDUPRI 5.0	Scenario Implementation	Facilitate scenario execution through reliable technological support.	Explain the workflow and roles during scenario execution.	Run mock simulations from start to finish using SOPs.	Take responsibility for the technical implementation of real-world scenarios.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
EDUPRI 6.0	Evaluation and Continuous Improvement	Support post-scenario review processes through data collection and feedback tools.	Understand evaluation cycles and improvement loops in simulation.	Collect feedback using standard forms and support debrief discussions in simulated environments.	Implement technical improvements in the field, based on evaluations and learner feedback.
EDUPRI 7.0	Simulation Design Concepts: Realism, Fidelity, and Validity	Understand and apply concepts of fidelity, realism, and educational validity during simulation design.	Define realism, fidelity, and validity in simulation contexts.	Evaluate mock simulation scenarios for these dimensions using a checklist.	Enhance realism and fidelity during real sessions through environment and tech support.
EDUPRI 8.0	Instructional Design Principles	Collaborate with educators to support the use of simulation within structured instructional frameworks.	Identify key instructional design models relevant to simulation.	Roleplay supporting simulation teams in aligning design choices with instructional frameworks.	Collaborate with instructors to optimize simulation delivery based on pedagogical strategies.
EDUPRI 9.0	Interprofessional Education Principles	Support interprofessional simulation activities by enabling smooth technical integration across disciplines.	Describe the value of interprofessional collaboration in simulation learning.	Facilitate mock interprofessional scenarios involving diverse learners.	Support cross-disciplinary simulation environments and manage multi-team technology.

Technical Competencies: Safety

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
SAFE 1.0	System-Based Safety Protocols	Follow and support adherence to institutional safety procedures in simulation settings.	Identify institutional safety policies and explain their relevance to simulation environments.	Demonstrate safety checks and enforce protocols during mock simulations.	Consistently implement system-based safety protocols in real simulation sessions.
SAFE 2.0	Hazardous Materials Management	Identify, manage, and safely dispose of potentially hazardous simulation materials.	Explain the types of hazardous materials encountered in the simulation and basic handling procedures.	Practice safe handling and mock disposal techniques in lab settings.	Manage and dispose of hazardous materials safely in live environments.
SAFE 3.0	Risk Management	Recognize, mitigate, and report potential risks related to simulation environments.	Define risk management concepts and identify common simulation-related risks.	Participate in risk identification and mitigation exercises during simulations.	Apply risk management procedures and report incidents appropriately during placements.
SAFE 4.0	Human Factors in Simulation	Apply human factors and ergonomics principles to create simulation environments that are safe, usable, and support effective performance.	Explain key human factors concepts (e.g., user interface, cognitive load, usability). Describe ergonomic risks common in healthcare simulation settings.	Evaluate simulation environments for human factors and ergonomic safety. Conduct an ergonomic assessment using a structured tool or checklist.	Modify a simulation space to improve cognitive flow, visibility, and physical safety. Implement practical human factors and ergonomic strategies in a real or simulated setting.
SAFE 5.0 (old 6)	Usability Testing and Evaluation	Conduct technical testing to assess equipment and software usability during scenario development.	Identify usability criteria for simulation tools and software.	Perform structured usability testing in simulated scenarios.	Execute usability evaluations to support ongoing improvement in active simulations.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
SAFE 6.0 (old 7)	Supporting Psychological Safety in Simulation	Recognize the importance of psychological safety and contribute to its maintenance by fostering trust, confidentiality, and emotional awareness in simulation environments.	Define psychological safety and identify conditions that enhance or threaten it during the simulation.	Participate in creating a psychologically safe learning environment by maintaining confidentiality, respecting learner vulnerability, and using appropriate communication during mock sessions.	Actively contribute to a safe simulation culture by adjusting tone, behavior, and responses to promote emotional comfort and learner engagement in real simulation settings.

General Competencies

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
GEN 1.0	Medical Terminology for Simulation Technicians	Understand and apply basic medical terminology relevant to simulation scenarios and interdisciplinary communication.	Define and recognize essential medical terms used in simulation scenarios.	Use medical terminology appropriately in mock simulation documentation and communication.	Effectively interpret and use medical terms in live simulations to support faculty and learners.
GEN 2.0	Understanding Healthcare Professional Roles	Recognize the functions and scopes of various healthcare roles to support simulation environments.	Describe the roles and scopes of various healthcare professionals involved in simulation.	Participate in mock interprofessional simulations and identify how each role contributes.	Adapt technical support to align with the workflows of different healthcare professionals.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
GEN 3.0	Professionalism and Ethical Behavior	Demonstrate accountability, punctuality, and ethical conduct in all aspects of simulation practice.	Explain ethical standards and expected behaviors in a simulation environment.	Demonstrate ethical decision-making during simulation-based exercises.	Consistently uphold professional conduct and ethics in simulation operations.
GEN 4.0	Attention to Detail	Maintain precision and accuracy in equipment setup, documentation, and simulation execution.	Identify why accuracy is critical in simulation environments.	Complete detailed technical checklists before and after mock simulation activities.	Ensure precision in all simulation setups and documentation tasks in the field.
GEN 5.0	Adaptability and Flexibility	Adjust to evolving simulation requirements, timelines, and unexpected challenges with resilience.	Recognize the importance of adaptability in high-pressure simulation settings.	Respond appropriately to changes or challenges during mock simulations.	Adjust plans and provide real-time solutions during dynamic simulation sessions in the field.
GEN 6.0	Time and Task Management	Prioritize responsibilities and manage time effectively in preparation and during simulation activities.	List strategies for prioritizing simulation tasks within time constraints.	Organize simulation setups and adhere to scenario timelines during labs.	Efficiently manage time across multiple simulations in real-world settings.
GEN 7.0	Collaboration and Teamwork	Engage constructively with faculty, learners, and other technicians to support simulation delivery.	Identify the principles of teamwork and collaboration in interprofessional settings.	Participate in team-based simulation exercises and contribute effectively.	Collaborate with teams to ensure smooth and effective simulation execution.

Code	Competency	Competency Description	Didactic (Knows/ Knows How)	Experiential (Shows How)	Work-Integrated Learning (Does)
GEN 8.0	Communication Skills	Convey and receive information clearly in written, verbal, and digital forms across professional contexts.	Describe effective communication techniques in technical and clinical education settings.	Demonstrate communication skills in role-played simulation scenarios.	Use clear, context-appropriate communication with stakeholders during real simulations.
GEN 9.0	Initiative and Self-Directed Learning	Demonstrate curiosity, seek feedback, and pursue independent learning opportunities.	Explain the value of independent learning in a rapidly evolving field.	Identify and pursue simulation-related learning opportunities with limited supervision.	Continuously improve through reflective practice and proactive learning in placement settings.
GEN 10.0	Respect for Diversity and Inclusion	Promote inclusive simulation environments that reflect diverse perspectives and learner needs.	Define diversity and inclusion and their relevance in simulation-based education.	Support inclusive practices during mock simulations involving diverse learners.	Promote equitable participation and culturally sensitive practices in live simulation sessions.

NOTE: This document is reviewed and updated annually. The next revision will be available in 2026.