

The Creation of Healthcare Distance Simulation Educator Development Guidelines (Phase 1)

MGH Institute of Health Professions PhD Program Course HE951

in collaboration with The Healthcare Distance Collaboration

Prepared September 2021





MGH INSTITUTE
OF HEALTH PROFESSIONS
Health Professions Education



We are PhD Students at the MGH Institute of Health Professions...

...who worked with our expert mentors, Dr. Janice Palaganas and Dr. Rami Ahmed, to create healthcare distance simulation educator development guidelines in the Fall of 2021 as one of the many efforts of the Healthcare Distance Simulation Collaboration.

“

The pandemic allowed us to get a taste of what education will be like 10 years from now. Distance simulation is not only here to stay, it is our future. In our 2020 Healthcare Distance Simulation Collaboration Survey, 86% of respondents indicated that they would continue some form of distance simulation when the world ‘returned to normal.’ Can we really say, then, that we as simulationists are competent at what we do if we don’t have some sort of knowledge about how best to do distance simulation?

-Janice C. Palaganas

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EXECUTIVE SUMMARY

BACKGROUND

The Healthcare Distance Simulation Collaboration identified the need to create educator competencies. The pandemic push created a realization of our distance capabilities. As a result, healthcare distance simulation has been changing shape rapidly, adding new considerations for faculty development almost weekly. Because of the amorphous nature of distance simulation, we decided to create educator development guidelines.

AIM

To create Healthcare Distance Simulation Educator Development Guidelines by developing an initial draft of competencies.

METHODS

We used a seven-step process to create this initial draft:

- 1) Identification of professional roles that encompass the skills of an ideal Distance Simulation Educator via expert review and consensus
- 2) Analysis of 25 professional roles (simulation, education, management, technology, and others) through research, interviews, and creation of a rubric for each profession
- 3) Presentation of individual draft reports and discussion
- 4) Curation of rubrics
- 5) Review by internal experts
- 6) Review by external experts
- 7) Review by comprehensive research team

FINDINGS

We found that the format of the major domains created by the Society for Simulation in Healthcare's Certification Council for Healthcare Simulation Educators served as the best organized framework that could fully cover the broad and detailed items that we identified when creating this first draft of the Distance Educator Development Guidelines. It allowed us to organize our findings under the major domains of: 1) Professional Values and Capabilities, 2) Healthcare and Simulation Knowledge and Principles, 3) Education Principles Applied to Distance Simulation, and 4) Simulation-based Resources and Environments. Under each domain, we found that competencies should be separated into basic and advanced (or expert). The degree to which technological training and skills are based in basic or advanced categories was a topic needing consensus. Other topics identified for further thought and consensus included: diversity and human factors—two areas that are not included in original certification guidelines. The final draft of the guidelines can be found in the “Findings” section of this report.

RECOMMENDATIONS

This work served as the foundation for a Nominal Group Technique study on specific questions needing further discussion, and a Delphi study to create the final draft of the guidelines. We recommend awareness of these guidelines and feedback to the Distance Simulation Collaboration for any thoughts or suggestions on the final (post-delphi study) Healthcare Distance Simulation Educator Development Guidelines. We anticipate that even after the Delphi study, our published guidelines will continue to be revised as the knowledge, skills, and capabilities increase in distance simulation.

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BACKGROUND

The Healthcare Distance Simulation Collaboration (“Distance Sim Collaboration”) was founded in February 2020 in response to the COVID-19 Pandemic. The mission of the group was to assist simulationists and educators in the transition of in-person education to online environments by defining this distance, virtual, online subset of healthcare simulation, curating existing knowledge both pre-pandemic and during the rapid transitions, and disseminating knowledge widely and rapidly.

Under the auspices of a collaboration of societies--IPSS, INSPIRE, PediSTARS, and NKS--new teams formed to explore distance simulation as the Healthcare Distance Simulation Collaboration: 1) a taxonomy group looking at definitions and terminology used in distance simulation, 2) a group to perform a scoping review of distance simulation in peer-reviewed and grey literature, and 3) a summit-planning group to bring all teams together to share and disseminate findings 4) a pictogram development exploring ways to express the concept without words, 5) a team working on future research questions to be answered in distance simulation, 6) and a team performing a distance simulation survey in collaboration with members across 32 simulation societies globally. As each team explored each area, the question of how to best develop educators in distance simulation consistently emerged in the discussions.

Building on completed projects defining healthcare distance simulation and the synthesizing of knowledge found and created, the collaboration identified the need to create educator competencies. The pandemic push created an affirmation of virtual and online products and the realization of our distance capabilities. As a result, healthcare distance simulation has been changing shape rapidly at an exponential rate, adding new considerations for faculty/educator development almost weekly. Because of the amorphous nature of distance simulation, we decided to create educator development guidelines that are meant to be revised as distance simulation continues to take form.

Dr. Janice Palaganas, co-founder of the Healthcare Distance Simulation Collaboration, is Professor of Interprofessional Studies at MGH Institute of Health Professions (MGH IHP) directing the simulation track of the PhD in Health Professions Education. Dr. Maria Bajwa is a PhD Student at MGH IHP interested in educator development for distance simulation. As Chair of Maria’s Dissertation Committee, Dr. Palaganas invited Dr. Bajwa to join her in this particular work with the Distance Sim Collaboration. After initial conversations, Drs. Palaganas and Bajwa identified the need to recruit at least five collaborating researchers, three of which were other PhD students in the simulation track.

A required course in the Simulation Concentration of the MGH IHP PhD is a course entitled HE951: Healthcare Simulation Research Collaboration. The purpose of this course is for PhD students in the Simulation Track to develop, implement, analyze, discuss, and publish together a hot topic as identified by the faculty. As Course Director, Dr. Palaganas suggested that she open this course for the group of PhD Students in the simulation track to focus together on the creation of initial guidelines upon which Dr. Bajwa could further study throughout her dissertation work focusing on the

content validity of the guidelines. The group included six additional PhD Students: Anne Weaver, Cynthia Mosher, Alex Morton, Melissa Morris, Dawn Wawersik, and Hani Lababidi.

METHODS

Three phases of drafting the Healthcare Distance Simulation Educator Development Guidelines were identified by Drs. Rami Ahmed and Janice Palaganas as outlined here.

Phase 1: Expert Input, Job Analysis and Expert Review

Phase 2: Nominal Group Technique with Experts

Phase 3: Delphi Study

Under the guidance of Drs. Palaganas and Ahmed, all seven PhD simulationist students enrolled in HE951 Research Collaboration worked together to develop the Phase 1 draft of the Healthcare Distance Simulation Educator Development Guidelines. Particularly, these guidelines were further studied in phase 2 and 3 and served as the foundation for Dr. Maria Bajwa's dissertation.

This white paper describes the methods used in Phase 1 of the guideline creation. Addendums containing the information and updates for Phases 2 and 3 will be added to this white paper.

Phase 1 methods included seven steps:

- 1) Identification of professional roles that encompass the skills of an ideal Distance Simulation Educator via expert review and consensus
- 2) Analysis of 25 professional roles (simulation, education, management, technology, and others) through research, interviews, and creation of a rubric for each profession
- 3) Presentation of individual draft reports and discussion
- 4) Curation of rubrics
- 5) Review by internal experts
- 6) Review by external experts
- 7) Review by comprehensive research team

We outline each step and our findings in this next section.

METHODS AND FINDINGS

Step 1. Identification of professional roles that encompass the skills of an ideal Distance Simulation Educator via expert review and consensus

On April 12, 2021, the researchers invited and met with distance simulation expert, Isabel Gross, and senior instructional designer, Anthony Sindelar, to identify and discuss which professional roles could best compose the ideal skills needed for Healthcare Distance Simulation Educators.

Twenty-five roles were identified and further categorized into four field areas: simulation, content expertise, technology, and other. Table 1 outlines these roles.

Table 1. Identified Roles with Skills for the Distance Simulation Educator

AREA	ROLE	ASSIGNED STUDENT AND NOTES
SIMULATION	Simulation Educator	Maria Bajwa
	Debriefer	Cynthia Mosher Included review of the Debriefing Assessment in Simulation in Healthcare (DASH)
	Simulation Operations Specialist (simulation operations specialist, simulation technologist, simulation technician)	Anne Weaver
	Simulation Assessors (simulationists who perform assessment using simulation)	Anne Weaver
	Simulation Administration Management (buy-in, project management, purchasing, vendor relations)	Dawn Wawersik Included review of: SSH Accreditation, SimOps,

		Healthcare Management Certification, Nursing leadership certification, NLN leadership in Sim curricula, Loma Linda University Policies & Procedures
	Standardized Patient and Embedded Participant	Melissa Morris
CONTENT EXPERTISE	Health Professions Educator	Cynthia Mosher Any certifications for education: nursing, medicine, other
	Assessment	Alex Morton
	Research Development	Alex Morton
TECHNOLOGY	Instructional Design (aka Learning Designer, Learning Experience Designer, Learning Engineer)	Anne Weaver
	Faculty Development	Anne Weaver
	Instructional Technologist (navigate and implement the technology)	Dawn Wawersik
	Distance Learning Support	Dawn Wawersik
	User Experience Design	Dawn Wawersik
	Technical Support	Dawn Wawersik
	Distance Sim Technology	Maria Bajwa
	Telesimulation	Maria Bajwa
	Telehealth	Maria Bajwa
	Production VR/XR Designer	Melissa Morris
	Gaming Development	Melissa Morris

	Production roles: Media Producer/Developers, Graphic Designer, Video Producer, various Media Developers, Multimedia Developer, Educational Developer	Alex Morton
	Online Educator/Online Learning	Janice Palaganas
OTHER AREAS	Diversity, equity, inclusion	Janice Palaganas
	Psychological Safety	Janice Palaganas
	Human Factors	Janice Palaganas

Step 2. Analysis of 25 professional roles

Six PhD students were assigned a number of professions identified in Step 1 (see Table 1). Students researched and investigated each identified profession for competencies that may apply to the distance simulation educator. For each identified profession, the following was researched:

- a. Certification examination blueprints
- b. Job description competency criteria
- c. Degree program competency rubric
- d. Other documents that outline role competency

Additionally, students reached out to a professional in each profession and interviewed them on competencies and resources for competencies.

The research group realized a dilemma early on: Are we studying competencies at the level of *basic* competency or *ideal* competency? As a result, each student was asked to indicate which competency items could apply to current distance simulationists and which competency items would be essential and ideal for distance simulationists to eventually know and demonstrate (but not necessary for basic competency).

From these notes, the students created a rubric for each identified profession, listing the competencies for each role that are applicable to distance simulation educators.

Step 3. Presentation of individual draft reports and discussion

The students met with Drs. Palaganas and Ahmed for a 3-hour session to present and discuss the professional roles and findings they identified in their research of their assigned roles. Each student prepared a 5-minute video presentation for each role, providing a brief overview of the

role, describing and highlighting the most pertinent findings, and providing an overview of the rubric developed for that role. See Findings for the rubrics and presentations.

Step 4. Curation of rubrics

Two PhD Students, Hani Lababidi (Dr. Lababidi was not part of step 2 to ensure a fresh perspective) and Maria Bajwa, as well as Janice Palaganas, synthesized all of the competencies into draft guidelines.

Step 5. Review by internal experts

The draft guidelines were sent to three additional simulation and instructional design experts from the Distance Sim Collaboration for peer review and edits: Drs. Rami Ahmed, Isabel Gross, and Anthony Sindelar.

Step 6. Review by external experts

The draft guidelines after step 5 were sent to four additional external reviewers for further review and editing of the draft. Drs. Lababidi, Bajwa, and Palaganas further edited the draft.

Step 7. Review by comprehensive research team

The final draft of the Phase I Healthcare Distance Simulation Educator Guidelines was reviewed and edited by all researchers.

FINDINGS

We provide here the findings for each professional role as it relates to distance simulation educators. We also provide our final Phase 1 Healthcare Distance Simulation Guidelines.

Presentation videos from Step 3 can be found at the website linked to the QR code in Figure 1.



Figure 1. QR code to Video Repository

Simulation Educator

DESCRIPTION

Existing Definitions of Simulation Educator

- Person who uses the modality of simulation to educate learners, utilizing evidence-based strategies (Lioce, 2016).
- Person who supports healthcare professionals who are learning to manage clinical situations and provide care that is safe, effective, efficient, timely, patient-centered, and equitable. May teach an individual learner or a group of learners practicing to work as a team (Lindell, Poindexter, & Hagler, 2016).

Distance Simulation Educator

Based on the research we conducted, we hypothesize:

A distance simulation educator is a person who uses the simulation methods (andragogy) for healthcare professionals in a virtual, online or digital environment, utilizing evidence-based practices and strategies to educate participants in the skill of patient management to the currently established highest standards of care.

Importance of the Role of Distance Simulation Educator

Distance simulation technology has been in use for several decades. The catalytic effect of COVID-19 has pushed it several fold at almost all health institutions. However, there are no established guidelines for a distance simulation educator to guide the use of multiple technologies, and inform strategies and procedures toward a path of safer patient care and the highest standards of practice. It is the need of the current time that new guidelines be established for the educators who are using simulation at a distance to teach healthcare-associated learners. This summary is the first step towards this goal by analyzing the current simulation education competencies and where they are coming up short in the light of the proposed distance simulation need.

METHODS

Question Explored

In exploring this role, a search was conducted to answer the following core question:

“How are the competencies of a distance simulation educator different from the competencies of the simulation educators at the current time (who do not practice distance simulation)?”

Search methodology

The internet was methodically explored and field experts in simulation education were consulted. A few areas were identified as helpful criteria to fully encompass the vast discipline of simulation education. Careful examination of these areas resulted in gathering of competencies which were collated into a rubric. Certified Healthcare Simulation Educator Examination Blueprint, 2018 Version, or CHSE, was identified as a template to collate the competencies and form a rubric.

These are the following areas which are used to search the competencies of the simulation educator.

1. Certification examination guidelines or blueprints
2. Degree programs
3. Certification courses
4. Job descriptions competency criteria
5. Interviews of the experts in the field

Search Words

Search terms for each area were:

Examination AND	Degree Program AND	Courses AND	Job Description AND
Simulation education certification	Simulation	Simulation educator	Healthcare simulation educator
Simulation certification	Healthcare simulation degree	Simulation education	Healthcare simulation facilitator
Simulation guidelines	Medical simulation	Healthcare simulation	Simulation instructor
Simulation blueprints	Masters, simulation	Medical simulation educator	Nursing simulation instructor
Simulation competenc(y)ies	PhD, simulation	Nursing simulation	

EVIDENCE SELECTION CRITERIA

The search resulted in identifying the following resources:

Gold Standard Guidelines and Standards and Rationale

These guidelines were chosen for this project because they are based on most current research in the field and therefore are considered gold standard.

- CHSE (SSH)
Certified Healthcare Simulation Educator from Society of Simulation in Healthcare, or SSH, was identified as a gold standard for simulation educator training by the field experts. It is also found to be the sole certification examination provider in the country and at the global level.
- INACSL Standards
Standards of Best Practice in Simulation from International Nursing Association for Clinical Simulation and Learning, or INACSL, were identified by the field experts and provide comprehensive guidelines to create, facilitate and evaluate a healthcare simulation.

Degree Programs and Rationale

- Drexel University (curriculum and final capstone rubric)
Drexel University, College of Medicine is the first of its kind to offer advanced training in simulation teaching, curriculum design, and the fundamentals of simulation research in an interprofessional setting (online.drexel.edu, n.d.).
- UAB - University of Alabama, Birmingham (curriculum and final capstone rubric)
University of Alabama, Birmingham has a well established graduate level course for medical simulation, one of the few in the world.

Job Descriptions

An online search was performed for the job description of simulation educator. With all seven investigators’ consensus, it was decided that Indeed.com, LinkedIn.com, and Glassdoor.com would be thoroughly investigated because of their larger inventory and reach to wider audiences. However, at the time of online search, the simulation educator job descriptions were only found at the following job posting sites:

- Healthysimulation.com - simulation educator
- Indeed.com - simulation educator

Explored Resources and Rationale

These resources were explored; however, they were found to be similar to already included resources.

- SOMESICS Simulation Standards - <https://www.somesics.org/copia-de-inicio>
- Royal College of Surgeons of England
- SESAM - <https://www.sesam-web.org/>
- Masters in Simulation, NYIT, https://www.nyit.edu/degrees/simulation_ms/curriculum

Proposed but Not Explored Resources and Rationale

These resources were recognized as useful for the current research; however, due to lack of time, they could not be explored.

- Center for Medical Simulation (workshop syllabus)
- WISER (workshop syllabus)
- NLN (module curriculum)
- InPASS (workshop syllabus)
- CCSNE (Canadian Certified Simulation Nurse Educator)

Other References Used:

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<https://doi.org/10.1136/bmjstel-2021-000875>

STRENGTHS & LIMITATIONS OF THE EVIDENCE

In the resources, the competencies of a simulation educator are cataloged comprehensively. If present, these characteristics will enable the simulation educator to synthesize, facilitate and evaluate a simulation session according to the research-based guidelines. The limitation of the research stemmed from the lack of time. This is an overview, and could have used some more depth and breadth if more time allowed. The search for evidence was performed for little over a month and not all resources could be explored, although included in the original list of the potential resources. If possible, the researcher would like to include other available resources in terms of more courses, educational programs and contact the higher education institutes, or HEI, for the current job descriptions of simulation educators. Another limitation is that we do not know what we do not know. Research is needed.

FORMULATION OF RECOMMENDATIONS

Introducing distance and distance technology into the mix of simulation leads to several expected as well as unexpected complexities. To mitigate these complexities:

1. **Digital Fluency** - The distance simulation educator needs to be digitally fluent. Digital fluency is a combination of digital or technical proficiency, digital literacy and social competence, or dispositional knowledge (Spencer, 2015/2020). They need to show wisdom and confidence in the

application and use of digital technologies by having foundational knowledge (cognition), conceptual understanding (application) and procedural fluency (wisdom as analysis and evaluation) (Wenmoth, 2015).

2. **Ethical Implications** - The distance simulation educator needs to acknowledge the presence of unknown ethical implications and strives to find and mitigate them. They need to understand the known ethical implications of using a distance simulation modality in regards to the learners, facilitators, and fellow educators, standardized patient educators, and the environment itself. They also need to recognize that use of technology can adversely affect minorities and can negatively affect diversity, inclusion and equity among participants should be at the forefront of consideration.
3. **Research in Distance Simulation Modality** - Research is needed to explore the correlation and interactivity of various factors, which are quite established in the in-person or non-distance simulation, such as the efficacy of evaluation and assessment, effect of distance simulation learning environment or medium on the psychological safety of the participants, optimal number of learners per session, extent to which a simulation educator needs to learn about the technology to perform distance simulation competently, among several others.

CONSIDERATION OF BENEFITS AND HARMS

Benefits: This analysis raises more questions than provides answers. It has the potential to inform future research into many areas of the evolving instructional field as discussed in the recommendation section. Another potential benefit of developing an educator in distance simulation is the cross-cultural, cross-countries and even cross-continent collaboration among institutes and distance simulation educators themselves.

Harms: One of the greatest harms would be to financially burden institutes and healthcare facilities, especially in scant resources situations because it takes time and money to provide applications, physical assets, and training of the simulation educators.

Another potential harm may be injustice to certain populations, communities and countries by inequitable dispersion of the learning itself, where the learners and the facilitators have inequitable access to technology considering distance simulation is inherently dependent on technology and not all technology is accessible by all.

Other possible harms and potential problems, which could arise as a result of insufficient research would be the inability to achieve activity objectives and intended outcomes, psychological safety issues for the learners and facilitators, ethical issues arising due to breach of ethical principles of equity and diversity, and increased challenges due to technical and technological issues.

SUMMARY OF DISCUSSION

The discussion elaborated the need to have research conducted on the subtleties in the two modalities named in-person simulation and distance simulation. Additionally, there is a glaring need to have technical competencies mapped out for distance simulation educators. The third important problem stems from the inherent nature of distance simulation and its underlying technology being costly and lacking the physical presence. Digital presence leads to lack of non-verbal cues and costly technological needs lead to non-equitable distribution of resources to the consumers of distance simulation.

Simulation Operations Specialist

DESCRIPTION

Simulation Operations involve the infrastructure, people and processes necessary for the implementation of an effective and efficient simulation-based education program. SimOps is a term that encompasses the job duties related to the overall management, delivery and function of simulation-based education. In order for distance simulation to effectively deliver high quality education, the SimOps specialist will be a necessary and integral part of the team. Distance simulation educators will rely on the SimOps specialist for support with the technologies required to manage distance simulation programs.

SEARCH METHODS & DATA SOURCES

To research the role of the SimOps specialist, the search began with the Certified Healthcare Simulation Operations Specialist (CHSOS) blueprint published by the Society for Simulation in Healthcare, and included the International Association for Clinical Simulation and Learning (INASCL) standards of best practice. A search for degree programs yielded only one program, the MGH IHP Masters degree. Other sources include discussions with two SimOps technicians and two Directors of Simulation centers. Search terms include SimOps, simulation operations, simulation technicians, sim tech, and degree programs for SimOps.

EVIDENCE SELECTION CRITERIA

The CHSOS blueprint is used to design the certification exam that serves as the gold standard to demonstrate knowledge and excellence in the field of SimOps, therefore, an appropriate starting point. Adding to that, the INASCL standards of best practice were used to augment the list of criteria because these standards speak directly to the role of SimOps. Discussing the role with two individuals who currently hold this position helped detail typical backgrounds and day-to-day responsibilities. Discussing the role with directors of simulation centers helped define the role from the leadership perspective. The individuals who were interviewed were chosen based on convenience.

STRENGTHS & LIMITATIONS OF THE EVIDENCE

Researching the role of SimOps has strength in the fact that there is an established certification program and written standards of best practice, eliminating ambiguity. A limitation is time; more time is needed to investigate this role. Another limitation to this research is that the individuals interviewed only represent two simulation centers in one region of the United States. It can be assumed that other centers in other places in the world may be utilizing the role of Sim Ops specialist in different ways, something that should be explored. Additional areas for further study are degree programs that could lead directly to the role of SimOps specialist.

FORMULATION OF RECOMMENDATIONS

The top 3 broad recommendations for incorporating the SimOps role into distance simulation education are:

Acquire, maintain and utilize functional knowledge of operating systems, products, and equipment that support and maintain distance simulation programs.

Support daily operations through problem solving, corrective action and maintenance of distance simulation equipment, products and supportive technologies.

Develop and apply policies and procedures to prevent misuse, preserve functionality, and sustain and recycle distance simulation equipment and technologies.

CONSIDERATION OF BENEFITS AND HARMS

The benefit of incorporating the SimOps specialist role into distance simulation education programs may be that the role is better supported through better identification of the scope and emerging degree programs. The role of SimOps specialist is already widely used; therefore, there are few risks of incorporating this role as we move to increased distance simulation.

SUMMARY OF DISCUSSION

Educator development for the role of SimOps specialist will best be accomplished by defining the role. Some of the expected responsibilities will include setting up and executing the scenario, use of multimedia during the scenario, management of platform functions (i.e. breakout rooms), and replaying back of the video. It may be necessary to have SMEs, debriefing experts and an operational specialist to optimize our distance simulation environments. Driven by advances in technology, the role of the SimOps specialist has evolved, and many centers are using only one person to fill multiple roles. This can cause cognitive overload for an educator who will need additional support, and it is not feasible or sustainable. One approach may be to crosstrain individuals who then can delegate responsibilities to support personnel. In this case, the scenario itself will drive the need for additional staff members.

Simulation Administrator

DESCRIPTION

Distance simulation administrators are professionals in charge of the healthcare distance simulation operations. Their jobs are multifaceted, and administrators generally have a number of different responsibilities, such as coordinating educational and simulation services, supervising staff, establishing workplace procedures and systems, ensuring adherence to healthcare policies and laws, simulation and education best practices, and managing overall financial effectiveness, and creating educational programs.

Significance of Simulation Administrator Role for Distance Simulation Educators

While distance simulation administrators rarely work directly with patients, they are charged with developing and maintaining a high level of excellence in the education of the healthcare professional that provides safe care to the communities they serve.

SEARCH METHODS AND DATA SOURCES

Search Strategy

Questions Explored:

- What are the current responsibilities of the Healthcare Simulation Administrator?
- What is the responsibility of the Healthcare Simulation Administrator in relation to distance simulation education?
- If an organization was seeking to hire a Healthcare Simulation Administrator, what would be the ideal degree or certification would this person need?
- If an organization was seeking to hire a healthcare simulation administrator, what would the job description/requirements entail?

Search Terms

Administrator AND	Degree Program AND	Job Description AND	Certification AND
Healthcare Simulation	Healthcare Simulation Administrator	Healthcare Simulation Administrator	Healthcare Simulation Administrator
Healthcare	Simulation Administrator	Simulation Administrator	Simulation Administrator
Healthcare Educator	Healthcare Executive	Healthcare Executive	Healthcare Executive
Healthcare Simulation Educator	Healthcare Administrator	Healthcare Administrator	Healthcare Administrator

Data Sources for certifications

- Nursing Leadership Certification

Data Sources for Job Descriptions

- Indeed
- Glassdoor
- Zip Recruiter
- Loma Linda University P&P manual
- SSIH Core Simulation Accreditation

Fields Explored

- Simulation Administrator
- Healthcare CEO

EVIDENCE SELECTION CRITERIA

Degree Programs

- Yale MBA for Executives: Healthcare Focus was selected because of the integrated curriculum and the fact that it is an Ivy League college.
- Michigan State-Master of Science in Healthcare Management with a concentration in leadership or compliance was selected because it focuses on healthcare leadership through a business framework. It includes courses in market analysis and planning, strategic decision making/planning and negotiations, which are all essential skills for a distance simulation administrator.

Training Programs

Certifications were not found, however, the following training programs were:

- NLN leadership Institute (Simulation) was selected because it is the only Simulation leadership course found.
- Yale School of Healthcare Management was selected because it is an online program in fundamentals of business and healthcare organizations. It is a basic foundational course, which would provide a foundation for the distance simulation administrator.

Job Descriptions

Indeed: Administrator, Simulation Learning & Training Center

GlassDoor: Hospital administrator, Healthcare CEO

STRENGTHS AND LIMITATIONS OF EVIDENCE

Strengths

The strength of this study is that the Simulation Administrator and healthcare administrators have defined roles, degree programs, and certifications. This study applied distance simulation to these roles to eliminate ambiguity for distance simulation educators and administrators.

Limitations

Lack of time was a limitation. This search was performed over a month's time, which allowed the researcher to provide a brief overview. More time would allow for interviewing of current healthcare simulation administrators and healthcare executives. More intimate knowledge of training programs, job descriptions, and degree programs would provide a more comprehensive overview of the role.

Another limitation is that this research was done amidst a pandemic in which many educational programs were forced into distance simulation and the roles were not clearly defined up to this point. As time passes, and more research is done, there will be more research and literature to support best practices.

Suggestions for Future Research

A scoping review to include grey literature, workshops, and conferences to further explore the role would give a more in-depth view. More time would allow the researcher to find and include other available resources such as more educational programs, certifications, and job descriptions

FORMULATION OF RECOMMENDATIONS

Top 3 recommendations for how this role can inform the distance simulation educator:

- The development of a course that will combine key administrator responsibilities and technology support that could be condensed to a 5-day simulation administrator course.
- An overview of different technologies including learning management systems and simulation platforms.
- An overview of how different roles play a part in supporting distance simulation such as instructional technology, instructional design, and learner experience. The simulation administrator would need an overall knowledge of these roles and responsibilities and have the ability to collaborate with or hire these individuals based on gold standard competencies.

CONSIDERATION OF BENEFITS AND HARM

Sometimes the role of administrator falls to the same person as educator and operator. In this situation the amount of time this person can dedicate will be limited, therefore this may not be realistic to all administrators. An administrator who must fulfill multiple roles may also not be able to fully implement this role to its fullest potential because of competing responsibilities which can cause the simulation center to run less efficiently than expected.

Those organizations that are able to hire a team, are a more realistic model for the administrator to focus specifically on the role of training, hiring, financial aspects, and the day-to-day running of the simulation center.

SUMMARY OF DISCUSSION

The simulation distance administrator role requires expertise in technology as well as administration. The development of an instructional technology course combined with a simulation administration course would be ideal to offer over a maximum of a 5 day period. The NLN simulation leadership course and Yale healthcare management training program could be broken down to provide a fundamental course for the distance simulation administrator. Fundamental needs would be:

1. Obtaining and maintaining technology
2. Strategic planning
3. Negotiations
4. Key issues in the design, development, use, and integration of distance simulation
5. Basic business principles

Standardized Patient Educator

DESCRIPTION

Role Description

The Standardized Patient Educator role is responsible for developing expertise in standardized patient (SP) methodology and training and administering SP simulation programming (Lewis et al., 2017). Clark et al., 2020 discuss human patient simulation online as a simulation activity designed for teaching and or assessing learning objectives synchronously using an online platform with live human role players. The SP educator role is integral to delivering successful human patient simulation using video/ web conferencing to provide health profession students and professionals simulation experiences that utilize human role players (SP's).

SEARCH METHODS AND DATA SOURCES

Search Strategy

Based on the question, "*what are the competencies of the CHSE of the future?*", a search was initiated on the SP educator role in its current iteration, and expectations of the position in the future as new technologies are adopted and innovated. The search began with a review of the Society for Simulation in Healthcare (SSH) certification exam blueprint, the Association of Standardized Patient Educators (ASPE), and the International Nursing Association for Clinical Simulation and Learning (INASCL) standards of best practice (SOBP). Next, a search was completed to determine if there were any certification opportunities for the role. The investigation was further expanded upon to uncover current job description characteristics, books, and literature and available descriptions from educational programs for developing SP educators who train human role players to simulate patients for health profession education and training.

No gold standard certification exam was identified for the role of the SP educator. Certificate and other programs were found for training to become an SP. Only one program offered at the University of Illinois was explicitly identified to develop the SP educator role. ASPE will be adding a certificate exam to their Fundamentals of SP Methodology course in 2022. The course is the first in a series of modules being created specific to the SP educator role.

In searching the literature and job descriptions, education requirements ranged from a high school diploma with experience to a bachelor's degree. Current SP roles aside from the traditional skills included experience with technical resources such as learning management systems (LMS), simulation center management solutions. Qualifications were also listed as proficient in various digital platforms and data capture technologies that support simulation in-person and at a distance.

Search Terms

Jobs AND	Degree programs AND	Certification AND
Standardized Patient (SP) Educator	Standardized Patient Educator	Standardized Patient Educator
SP trainer	SP trainer	SP trainer
Simulationist	Simulationist	Simulationist
Human Simulation educator	Human Simulation educator	Human Simulation educator

EVIDENCE SELECTION CRITERIA

Standards of Best Practice:

- Society for Simulation in Healthcare Simulation Educator certification blueprint
- Association of Standardized Patient Educators Standards of Best Practice
- International Nursing Association for Clinical Simulation and Learning Standards of Best Practice.

These resources were chosen as together, they form the foundation of the healthcare simulation educator. These documents are the guidelines by which SP education and training should be conducted and the requirements for the SP educator role.

Books

- Comprehensive Healthcare Simulation: Implementing Best Practices in Standardized Patient Methodology

Books and literature were utilized for outlining the SP educator role scope. This book was specifically chosen as it was published and released after healthcare education transitioned to digital platforms to compensate for closures due to the COVID-19 situation in mid-2020. A chapter was added at the end specific to SP methodology at a distance.

Degree Programs

Degree programs were reviewed, and while numerous workshops, Master of Science and Postgraduate diplomas, and certificates in Medical and Health Profession Education and Training were identified, only one certificate program in SP education offered at the University of Illinois was found specific to the SP educator role.

Job description

Job postings from various sources were reviewed for similarities and differences. Qualifications for the jobs as an SP educator ranged from a high school diploma with experience to a bachelor's degree. Current openings for SP educators were similar, with slight differences in the technology proficiency specific to the setting.

Other References

Clark, L., Woll, A & Miller, J.M. (2020). SP methodology reimaged: Human simulation online. In G. Gliva-McConvey, C.F. Nicholas & L. Clark (Eds.), *Comprehensive healthcare simulation: Implementing best practices in standardized patient methodology* (pp.315-344). Springer.

Lewis, K.L., Bohnert, C.A., Gammon, W.L., Hölzer, H., Lymanm L., Smith, C., Thompson, T.M., Wallace, A., & Gliva-McConvey, G. (2017). The association of standardized patient educators (ASPE) standards of best practice (SOBP). *Advances in Simulation*, 2 (10).

STRENGTHS AND LIMITATIONS OF THE EVIDENCE

Strengths

This overview has strength in that its basis is founded upon best practices identified for the role in the literature. The evidence was supplemented to explain how the role is changing as technology is increasingly being used for synchronous SP distance simulation experiences.

Limitations

This review was conducted at a time of change. While some of the SP roles in new technological contexts were noted, it is yet to be determined what the SP educator role essential job duties and skill set will be as technology advances.

Future Study

It is recommended that future research and assessments of the SP educator role be conducted to obtain more insight into the role to determine the correct level of educational qualifications. Current and future competencies aligned to best practices in simulation education are required to successfully deliver quality SP programming aligned to best practice standards for simulation and patient safety for distance simulation.

FORMULATION OF RECOMMENDATIONS

- Focus on the development of a standardized baseline education, skills, and job qualifications necessary for entry.
- Consider the inclusion of further investigation into the designs of certificate courses and degree programming to differentiate SP educators' experience and competence levels.
- Identify technologies necessary for success in the SP role and how they interact and support health profession education and training.

CONSIDERATION OF BENEFITS AND HARMS

The benefits of a knowledgeable and experienced SP educator in distance simulation will allow for quality health profession education programming aligned to evidence-based best practices for and implementation of distance simulation for health education, patient safety, and improved patient care. Logistical issues can be minimized, and capacity may be increased to meet community needs. Without clearly identifying competencies required for distance simulation of the SP educator role, training could be psychologically unsafe for the SP, facilitator, and students. Health profession education programming could be interrupted, and learning objectives may not be achieved. An unprepared distance simulation SP educator could impact funding, resources, and the program's success.

SUMMARY OF DISCUSSION

As we move forward with simulation at a distance, SP educators must assess for appropriateness, create scenarios, sufficiently train SPs, provide guidance to those requesting SPs, and ensure accessibility and privacy for using human simulation online. The SP educator will also need to be proficient in supporting others and troubleshoot challenges that arise with the technologies/platforms/tools utilized for using human simulation at a distance.

Debriefer

DESCRIPTION

Role Description

- The individual who facilitates a debriefing session and is knowledgeable and skilled in performing appropriate, structured, and psychologically safe debriefing sessions (Fanning & Gaba, 2007).
- The person who leads participants through the debriefing. Debriefing by competent instructors and subject matter experts is considered important to maximize the opportunities arising from simulation (Raemer et al, 2011).

Importance of Role for Distanced Simulation Educators

This role is important to distance simulation educators because a debriefer may serve to distance debrief the distance simulation educator’s simulation participants and will have understanding of and experience with the challenges of facilitation in the distance setting and can guide and plan accordingly for best distance debriefing practices in coordination with the team.

SEARCH METHODS AND DATA SOURCES

Search Strategy

The specific scope of debriefing roles presented a relatively straightforward search approach. However, because the role of “debriefer” proved to not be a job title per say, I focused my search strategy first on “debriefer” and when I found limited results I turned to “simulation educator” search results to explore the debriefer-specific information I could find within that role.

I began with a search for certifications, aiming for those most often specified in job descriptions for simulationists. Thereafter I moved to education and job descriptions, again finding it necessary to search not only “debriefer” in my search terms but also “simulationist” and “simulation educator” to find more results.

Search Terms

Jobs AND	Degree programs AND	Certifications AND
healthcare AND simulation AND debriefer	healthcare AND simulation	healthcare AND simulation
healthcare AND simulation AND facilitator	healthcare AND simulation AND debriefer	healthcare AND simulation AND debriefer
healthcare AND simulationist	healthcare AND simulation AND facilitator	healthcare AND simulation AND facilitator

healthcare AND simulation AND facilitator		healthcare AND simulationist AND debriefer
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DATA SOURCES & EVIDENCE SELECTION CRITERIA

Definition of Role

Debriefer

- The individual who facilitates a debriefing session and is knowledgeable and skilled in performing appropriate, structured, and psychologically safe debriefing sessions (Fanning & Gaba, 2007).
- The person who leads participants through the debriefing. Debriefing by competent instructors and subject matter experts is considered important to maximize the opportunities arising from simulation (Raemer et al, 2011).

Source: Lioce L. (Ed.), Lopreiato J. (Founding Ed.), Downing D., Chang T.P., Robertson J.M., Anderson M., Diaz D.A., and Spain A.E. (Assoc. Eds.) and the Terminology and Concepts Working Group (2020), *Healthcare Simulation Dictionary –Second Edition*. Rockville, MD: Agency for Healthcare Research and Quality; September 2020. AHRQ Publication No. 20-0019. DOI: <https://doi.org/10.23970/simulationv2>.

Gold Standard Certifications & Standards:

CHSE & CHSE-A (SSH)

Rationale for my criteria selection was based on relevance of the criteria to the role I was researching and the reputation as gold standard in certification.

CCSNE (Canadian Certified Simulation Nurse Educator) Exam

Rationale for my criteria selection was based on relevance of the criteria to the role I was researching and the reputation as gold standard in certification in addition to seeking specific certification for nurse educator, given the vast representation of nurses in the field of simulation.

INACSL Best Practices in Debriefing Standards

Rationale for my criteria selection of INACSL was based on relevance of the criteria to the role of debriefer and its reputation as gold standard in debriefing.

DASH (Debriefing Assessment for Simulation in Healthcare)

Rationale for my criteria selection of DASH was based on relevance of the assessment to the role of debriefer and its reputation in debriefing.

Gold Standard Degree Programs:

UAB Master of Science in Healthcare Simulation

This degree program was selected for its breadth of focus in simulation and its reputation as one of the very few degree programs in the US that is fully focused on healthcare simulation education. UAB is one of the top young universities in the world, and with this unique degree offering it is representative of a gold standard program.

Drexel Master of Science in Medical and Interprofessional Simulation

Drexel is another degree program in the US that focuses on healthcare simulation. Drexel's reputation is stellar, serving the gold standard criteria.

Gold Standard Debriefing Training Programs:

Center for Medical Simulation Healthcare Simulation Essentials: Design and Debriefing

My rationale for selecting this course is due to the gold standard reputation of CMS in educating simulationists from around the world since the 1980s. This particular CMS course focuses specifically on design and debriefing, so it targets the specific role better than the general simulation courses.

Debriefing Academy

This course and the academy itself focuses specifically on educating debriefers, offering advanced content to help improve their skills. The stellar faculty delivering the course places it within the “gold standard” category.

InPASS International Instructor & Facilitation Training Course

Although this is a simulation training course and not focused on debriefing specifically, there are core course components that do focus on debriefing. The Institute has an international reputation and the course identifies as “International Instructor Course” with well-known faculty from around the world.

Virtual Debriefing in the Age of COVID-19 Webinar – Healthy Simulation

The Virtual Debriefing webinar is the work of Adam Cheng, who is well-known for his research in and knowledge of debriefing. As this course focuses on virtual debriefing the information therein and the experience of the faculty may lend to informing standards for distance debriefing.

Job Descriptions

Job descriptions for debriefer could not be identified as the role is embedded within the simulation educator job description. Therefore, the simulation educator job description can best provide the information related to the debriefer role in its job description and is not repeated here.

STRENGTHS AND LIMITATIONS

Strengths

The strengths of this evidence are that it represents the professional standards from experts in the field and as such any recommended updates to proficiencies to reflect distance debriefing that we make and they incorporate will set the standard for other institutions to follow in the region and worldwide. Additionally, the findings demonstrate that an updated representation of the role and proficiencies of a debriefer in the distance setting are needed. With courses and webinars on virtual debriefing appearing more and more online, it is obvious that recognition of the need for debriefers to become skilled and experienced with distance debriefing is rising.

Limitations

The limitations to this evidence are that much of the criteria is reflective of evidence in North American institutions. There should be a more global picture created to best understand efforts made by international agencies, organizations and institutions.

Future Study

Search beyond gold standard North American programs and certifications and seek out more information from international programs and certifications.

CONSIDERATIONS OF BENEFITS AND HARMS

Additional training will be required to orient HPEs to the use of technology, setting the environment for effective distance debriefing, and strategies to establish and maintain psychological safety and achieve high level engagement in the online setting. A potential harm in faculty development for this role is the time and cost, which could be prohibitive for some educators and institutions. This should be taken into consideration, especially for those who have already completed their certifications and degree programs.

FORMULATION OF RECOMMENDATIONS

1. Focus on debriefer as a standalone position and consider the application of distance debriefing skills needed for the role.
2. Target prebriefing and orientation training for debriefers so they are best prepared to work within the platform(s) they will use as well as keeping abreast of new technologies which continue to emerge.
3. Special emphasis on creating and maintaining psychological safety in a distance debriefing.
4. Include distance debriefing design as a core element of distance debriefer training.

SUMMARY OF DISCUSSION

It is evident from the gold standard certifications and programs objectives that consideration of the role of debriefer is mostly embedded within the role of simulation educator. Expertise in the role of debriefer for distance debriefing is essential for delivery of quality distanced simulation programs. As centers may move toward outsourcing distance simulation and distance debriefing, there is a pressing need to update certification exams and programs to best prepare the newly educated debriefers in distance debriefing technology and strategies.

Assessment and Research

DESCRIPTION

Role Description

The role of researcher or assessor encompasses a variety of careers and job foci within education. These roles include two overarching categories: psychometrics and program assessment. Generally, these roles address the design and implementation of measurement and assessment tools and the research, analysis, and evaluation of educational programs and activities.

Importance of Role for Distanced Simulation Educators

Research and assessment roles are important to the quality and continued development of distanced simulation programs and activities. Distanced simulation environments bring unique benefits and challenges to learning. Evaluation of existing methodologies and the development of new methodologies for teaching, learning, and assessment in the distanced simulation environment are needed to inform best practices. Expertise in research and assessment are therefore vital to the longevity and efficacy of this educational modality.

SEARCH METHODS AND DATA SOURCES

Search Strategy

Search strategies for researcher and assessor roles included identification of applicable societies and consultation with a practicing psychometrician. Job postings and degree programs from identified societies were investigated, then comparable job postings on common job sites were explored.

List of Sources

Societies Investigated

National Council on Measurement in Education

Home – NCME

American Evaluation Association (page for reference)

<https://www.eval.org/About/About-AEA>

Degree Program Competency Rubric

Graduate Certificate in Educational Research and Evaluation (Virginia Tech)

[Educational Research and Evaluation | College of Liberal Arts and Human Sciences | Virginia Tech \(vt.edu\)](#)

Master of Science in Measurement and Evaluation (American University)

<https://programs.online.american.edu/msme/masters-in-measurement-and-evaluation>

MEd in Research, Educational Measurement, and Psychometrics (Univ. of Massachusetts Amherst)

[Data Analysis, Assessment, and Research in Education M.Ed. : College of Education : UMass Amherst](#)

MEd or PhD in Measurement, Evaluation and Data Science (Univ. of Alberta)

Measurement, Evaluation, and Data Science | Department of Educational Psychology (ualberta.ca)

Job Description Competency Criteria

EDUCATION PROGRAM EVALUATOR (UNIV. OF ILLINOIS AT CHICAGO)

<https://careers.eval.org/jobs/view/education-program-evaluator-computer-science-btt-c/57906168/>

PROGRAM EVALUATOR (PCHE)

https://www.glassdoor.com/Job/education-evaluator-jobs-SRCH_KO0.19.htm

PSYCHOMETRICIAN (OREGON DEPT. OF EDUCATION)

[NCME Job Postings- 8 2 21.pdf \(higherlogicdownload.s3.amazonaws.com\)](#)

RESEARCH ASSOCIATE (UNIV. OF KANSAS)

[NCME Job Postings- 8 2 21.pdf \(higherlogicdownload.s3.amazonaws.com\)](#)

EDUCATION PROGRAM EVALUATOR IV (ALLEN INTEGRATED SOLUTIONS)

https://www.glassdoor.com/Job/education-evaluator-jobs-SRCH_KO0.19.htm

Search Terms

Societies AND	Jobs AND	Degree programs AND	Certifications AND
educational assessment	psychometrician	psychometrics	educational assessment
educational research	program evaluator	program evaluation	educational research
program evaluation	educational evaluator	research and evaluation	program evaluation
program assessment	educational researcher	assessment	program assessment
psychometrics	educational assessor		psychometrics
	educational program assessor		

EVIDENCE SELECTION CRITERIA

Societies:

National Council on Measurement in Education (NCME)

- The NCME was selected as a criteria based-on recommendations from a practicing United States based psychometrician who identified it as the primary flagship organization.

American Evaluation Association (AEA)

- The AEA was selected as a thirty-five-year established organization devoted to evaluation as a profession across fields, including education.

Degree Programs

Master of Science in Measurement and Evaluation (American University)

- This degree program was sourced from the AEA degree programs page and was chosen for its detailed listed degree objectives and focus on training for program evaluation in any sector.

Graduate Certificate in Educational Research and Evaluation (Virginia Tech)

- This graduate certificate program was sourced from the NCME degree programs page and was chosen for its detailed degree objectives and focus on training for research and evaluation in education.

MEd in Research, Educational Measurement, and Psychometrics (Univ. of Massachusetts Amherst)

- This degree program was sourced from the NCME degree programs page and was chosen for its detailed degree objectives and inclusion of psychometrics.

MEd or PhD in Measurement, Evaluation and Data Science (Univ. of Alberta)

- This degree program was sourced from the NCME degree programs page and was chosen for its detailed degree objectives and focus on measurement and evaluation and doctoral progression options.

Job Descriptions

EDUCATION PROGRAM EVALUATOR (UNIV. OF ILLINOIS AT CHICAGO)

- This job listing was sourced from the AEA job page and was chosen for its university setting and program evaluation focus.

PROGRAM EVALUATOR (PCHE)

- This position was sourced from Glassdoor and was chosen for its health system setting and focus on program evaluation.

PSYCHOMETRICIAN (OREGON DEPT. OF EDUCATION)

- This job posting was sourced from the NCME job page and was chosen for its educational setting and focus on psychometrics.

RESEARCH ASSOCIATE (UNIV. OF KANSAS)

- This job listing was sourced from the NCME job page and was chosen for its university setting and focus on educational research.

EDUCATION PROGRAM EVALUATOR IV (ALLEN INTEGRATED SOLUTIONS)

- This position was sourced from Glassdoor and was chosen for its business setting and focus on educational program evaluation

STRENGTHS AND LIMITATIONS

Strengths

This study has strength in its sourcing from professional societies and input from an expert in the field. The variation in job setting and program foci of the gathered sources provides insight into the breadth of the role.

Limitations

The study was conducted in a short period of time and includes job roles across many sectors. Some consideration was given to inclusion of roles outside of education (AEA sourcing), but much is left to be explored.

Future Study

Recommendations for the future study of this role includes identifying individuals in psychometrician, program evaluation, educational researcher, and other similar positions from a variety of institutions (e.g. university setting, health system continuing education setting, etc.). Holding interviews to obtain more insight into their duties, education, and career path would be helpful for further investigation and understanding of the role.

CONSIDERATIONS OF BENEFITS AND HARMS

The benefits of incorporating research and assessment expertise into the distanced simulation educator include informing best practices and quality improvement of distanced simulation programs. However, training and education to gain sufficient expertise in this role is extensive. Educator time and training cost may not be amenable to completing training in other important aspects of the distanced simulation educator role. The most beneficial incorporation of this role may lie in the understanding of how to locate and utilize experts within one's institution.

FORMULATION OF RECOMMENDATIONS

1. Identify who your research and evaluation department is, how to contact them, and formulate a close working relationship.
2. Develop a basic understanding of research and program evaluation terminology (e.g. qualitative and quantitative methodology terms, etc.) to supplement communication and understanding with your research and evaluation department.
3. Develop or reinforce foundational knowledge of measurement and assessment (e.g. summative assessment, formative assessment, etc.).

SUMMARY OF DISCUSSION

Overall, roles focusing on research, assessment, and evaluation require significant education and training. Expertise in these roles is essential for delivery of quality distanced simulation programs. Out-sourcing expertise may be most beneficial for the distanced simulation educator role.

Health Professions Educator

DESCRIPTION

Role Description

1. Is trained as a clinician in a health profession AND
2. Engages (or previously engaged) in clinical activities, AND
3. Actively engages in HPE activities, AND
4. Consistently engages in and disseminates health-professions related educational scholarship.

Importance of Role for Distanced Simulation Educators

A health professions educator (HPE) is typically a clinician and may be a physician, nurse, pharmacist, or other allied health professional and serves as a content expert in the setting of distance simulation and distance debriefing.

SEARCH METHODS AND DATA SOURCES

Search Strategy

The specific scope of this role spans into several areas, including different levels of education and job descriptions. I found in my initial search for “health professions educator” jobs produced a range of different titles including, “professor”, “clinical educator”, “health educator” (a different role altogether) “health professions education director”, “health professions education specialist”, and several others that did not really fit the role of the HPE in simulation education. For this reason, I focused my search strategy first on “health professions educator” and “health professions education” to explore the information I could find within that role.

I began with a search for certifications, aiming for those most often specified in job descriptions for simulationists. Thereafter I moved to education and job descriptions, using the first search results to identify other potential search terms, certifications, and educational programs expected.

Search Terms

Jobs AND	Degree programs AND	Certifications AND
health AND professions AND educator	health AND professions AND education	health AND professions AND education
health AND professions AND education AND specialist	medical AND education	medical AND education
clinical AND educator	clinical AND education	clinical AND education
nurse AND educator	nursing AND education	nursing AND education

DATA SOURCES & EVIDENCE SELECTION CRITERIA

Definition of Role

Health Professions Educator

1. Is trained as a clinician in a health profession AND
2. Engages (or previously engaged) in clinical activities, AND
3. Actively engages in HPE activities, AND
4. Consistently engages in and disseminates health-professions related educational scholarship.

Clinicians may be physicians, nurses, pharmacists, or other allied health professionals and serve as content experts in the setting of distance simulation and distance debriefing.

I selected this definition of the role because it was developed by leaders in the field around the world.

Source: Varpio, L., Gruppen, L., Hu, W., O'Brien, B., Ten Cate, O., Humphrey-Murto, S., Irby, D. M., van der Vleuten, C., Hamstra, S. J., & Durning, S. J. (2017). Working Definitions of the Roles and an Organizational Structure in Health Professions Education Scholarship: Initiating an International Conversation. *Academic medicine : journal of the Association of American Medical Colleges*, 92(2), 205–208. <https://doi.org/10.1097/ACM.000000000000136>

Gold Standard Certifications and Standards

NLN Certified Nurse Educator (CNE®) National League for Nursing

Rationale for my criteria selection for the CNS was based on relevance of the criteria to the role I was researching and the reputation as gold standard in certification of nurse educators.

WFME Standards for Master's Degrees in Medical and Health Professions Education

The World Federation of Medical Education is a not-for-profit, non-governmental organization, aiming to achieve higher quality of medical education through accreditation and promoting standards.

Degree Programs:

Johns Hopkins University Master of Health Professions Education

Johns Hopkins University programs are among the gold standard institutions and, particularly focused on HPE, this program is a leader in this regard.

Harvard Medical School Master of Medical Education

Established in 1782, Harvard Medical School is devoted to education across fields, and in this program specifically in medical education. Harvard is a gold standard institution against which programs should be compared.

Johns Hopkins Master of Science in Nursing Education

Johns Hopkins University programs are, as mentioned, among the gold standard institutions for education in the clinical education fields. This program was selected particularly as it targets nurse educators, who play an important role in health professions education.

Certificate Programs:

Harvard Macy Institute Certificate Educators in Health Professions

Rationale for my criteria selection for Harvard Macy's certificate program is based on relevance of the criteria to the role I was researching and the reputation as gold standard in certification. As well, Harvard Macy serves to educate the educators of other institutions and focus on the importance of scholarship, innovation, and adaptive change in education.

Rutgers Certificate in Health Professions Education

Rutgers certificate program targets health care professionals aiming to become teachers in health professions education and includes educators in clinical settings in teaching health professions students as well as educators in alternative settings in the community.

Job Descriptions

Health Professions Education Specialist

UC San Diego

This job listing was sourced from Glassdoor job search results and chosen for its university setting and the duties which included curriculum design, direct education, and evaluation.

Medical Faculty-Essential Clinical Skills

University of Missouri Healthcare Learning Center

This job listing was sourced directly from the university's career listings. It was chosen for its university setting, the role being related to nursing and working with other content experts.

STRENGTHS AND LIMITATIONS

Strengths

The strengths of this evidence are that it represents the professional standards from experts in the field and as such any recommended updates to proficiencies for distance content expert qualifications that we make may be incorporated and serve to set the standard for other institutions to follow. Additionally, the findings demonstrate that an updated representation of the role and proficiencies of a health professions education in the distance setting are directly needed. This is reflected in the job descriptions and mentions in courses of “virtual” and “remote” education roles.

Limitations

The limitations to this evidence are that much of the criteria is reflective of evidence in North American institutions. There should be a more global picture created to best understand efforts made by international agencies, organizations and institutions.

Future Study

Search beyond gold standard North American programs and certifications and seek out more information from international programs and certifications.

Search other health professions educator roles in different professions beyond medicine and nursing.

CONSIDERATIONS OF BENEFITS AND HARMS

Additional training will be required to orient HPEs to the use of technology, setting the environment for effective distance simulation and distance debriefing, and strategies to establish and maintain psychological safety and achieve high level engagement in the online setting. A potential harm in faculty development for this role is the time and cost, which could be prohibitive for some educators and institutions. This should be taken into consideration, especially for those who have already completed their certifications and degree programs.

FORMULATION OF RECOMMENDATIONS

1. Focus on health professions educator as a content expert in simulation education and what that role entails as far as proficiencies needed and particularly for the distance setting.
2. Target orientation training for HPEs so they are best prepared to work within the platform(s) they will use as well as keeping abreast of new technologies which continue to emerge.
3. Special emphasis on creating and maintaining psychological safety in a distance debriefing.
4. Include distance simulation and distance debriefing design and evaluation as a core element of HPE training.

SUMMARY OF DISCUSSION

In this role, it will be key for HPEs to be trained in the nuances of the distance setting, particularly in the use of technology, platforms for delivery

Expertise in the role of HPE for distance debriefing is essential for delivery of quality distanced simulation programs. There is a pressing need to update certification exams and programs to best prepare the newly educated HPEs in distance debriefing technology and strategies.

Distance Simulation Technologist

DESCRIPTION

Significance of Technologies for Distance Simulation Educator

Distance learning has been in use for several decades with continuous evolution leading to its modern form of elearning or distance learning with relatively well-established principles for best practices. Unlike its better evolved distance learning or e-learning pedagogical kin, distance simulation in healthcare needs to have guidelines and principles of best practice established for the educators using this instructional approach (Duff et al., 2021). Technology and distance simulation in healthcare have a symbiotic and a positively proportional relationship. Both mutually benefit each other and grow accordingly. The more one grows, the other grows with it and vice versa. The implication of this growth merits the professional and instructional growth of an educator who uses the growing technologies for distance simulation. The catalytic effect of COVID-19 has pushed the technological advancement and the use of distance simulation several folds at almost all health institutions. However, there are no established guidelines for distance simulation educators which would direct them through the variety of evolving technologies to teach their learners the practice of safer patient care while preserving the psychological safety of the learners and educators alike and ensuring transfer of learning.

It is the need of the current time that new guidelines be established for the educators who are using simulation at a distance to teach healthcare associated learners. This summary is the first step towards this goal by analyzing the current simulation education competencies and where they are coming up short in the light of the proposed distance simulation needs.

For the purpose of this paper, the technologies considered would be the audiovisual systems, software and hardware for teleconferencing, technology behind avatar-based, and screen-based simulation, technologies needed for two or three dimensional (2D or 3D) simulation, technologies behind extended realities, technologies and technical equipment needed for data gathering and analysis as well as evaluations and assessments during distance simulations. The technologies and media needed for telehealth or telemedicine and telesimulation are also included in this research question for distance simulation technologies.

Definitions

Distance simulation

It is implementing a simulation or training at a physical distance from the participant(s) (LeFlore et al., 2014; von Lubitz et al., 2003).

Simulation Educator

- Person who uses the modality of simulation to educate learners, utilizing evidence -based strategies (Lioce, 2016).
- Person who supports healthcare professionals who are learning to manage clinical situations and provide care that is safe, effective, efficient, timely, patient-centered, and equitable. May teach an individual learner or a group of learners practicing to work as a team (Lindell, Poindexter, & Hagler, 2016).

Distance Simulation Educator

There was no established definition found. Therefore, considering the intricacies of distance simulation and simulation education, we can attempt to say that distance simulation educator is a “Person who uses the simulation pedagogy for healthcare professionals in a virtual, online or digital environment, utilizing evidence-based practices and strategies to educate them in the skill of patient management to the currently established highest standards of care”.

Telehealth or Telemedicine

According to the United States Department of Health and Human Services, or HHS, **Telehealth** or **Telemedicine** is the use of electronic information and telecommunication technologies to provide care when the patient and the doctor are not in the same place at the same time.

Telesimulation

According to SSiH dictionary,

“A **telesimulation** platform utilizes communications technology to provide mannequin-based simulation education between learners and instructors located remotely from one another (Lioce, 2016; Okrainec, A., Henao, O., & Azzie, G. (2010)).

METHODS

Question Explored

The questions behind this search were:

- What is distance simulation?
- What comes under distance sim technology?
- If someone wants to work in a distance simulation field such as arch virtual or any avatar-based simulation, what are the competencies they should have?
- Is there a specific technology needed for telesimulation and telehealth?
- Are those included in the distance simulation?
- How is telesimulation different from telehealth?

Search methodology

The internet was methodically explored and field experts in distance simulation technologies were consulted. Careful examination of these resources resulted in gathering of competencies which were collated into a rubric. Certified Healthcare Simulation Educator Examination Blueprint, 2018 Version, or CHSE was identified as a template to collate the competencies and form a rubric.

These are the following areas which are used to search the competencies of the simulation educator.

1. Certification examination guidelines or blueprints
2. Degree programs
3. Certification courses
4. Job descriptions competency criteria
5. Interviews of the experts in the field

Search Words

Search Words for each areas were:

Examination AND	Degree Program AND	Courses AND	Job Description AND
Distance simulation technology certification	Distance simulation technology	Distance simulation technology	Distance simulation technology
Distance learning technology certification	Healthcare simulation technology	Simulation education technology	Technologist, technician in XR
Simulation technology guidelines	Medical simulation technology	Healthcare simulation technology	Telehealth/ telesimulation
Simulation technology blueprints	Masters, simulation technology	Medical simulation technology	Healthcare simulation
Simulation technology competenc(y)ies	XR technology	Nursing simulation technology	Remote simulation
			Distance learning technology

EVIDENCE SELECTION CRITERIA

Search Results

The search resulted in identifying the following resources:

Gold Standard Guidelines and Standards and Rationale

The following guidelines were chosen for this project because they are based on most current research in the field and therefore are considered gold standard.

- CHSE (SSH)
Certified Healthcare Simulation Educator from Society of Simulation in Healthcare, or SSH was identified as a gold standard for simulation educator training by the field experts. It is also found to be the sole certification examination provider in the country as well as at the global level for healthcare simulation.
- INACSL Standards
Standards of Best Practice in Simulation from International Nursing Association for Clinical Simulation and Learning, or INACSL, were identified by the field experts and provide comprehensive guidelines to create, facilitate and evaluate a healthcare simulation. Therefore, its standards were explored.

Degree Programs and Rationale

Only one degree program was found at the time of search.

- GRADUATE CERTIFICATE IN TELEHEALTH
University of Kentucky, College of Health Sciences
<https://www.uky.edu/chs/telehealth-certificate>

Certificates and Rationale

Only the following certificates could be found for telesimulation, health simulation, or distance sim technology.

1. Telehealth Certificates- BCTP-I Certificate Training <https://telehealth.org/telehealth-certificates/>

; Learning the basics of clinical, technical, legal, & ethical tele-practice. Designed for hospitals, agencies, or clinical staff.

2. Facilitating simulation at a distance (Telesimulation)- Simulation Canada's micro-course: Sim by Webconference - Facilitating Virtually.

<https://www.sim-one.ca/courses/course/microcourse-sim-webconference-facilitating-virtually>

3. Certification in Telehealth by American College of Education

<https://www.ace.edu/program/certificate-in-telehealth#courseplan>

Job Descriptions

Glassdoor:

Search words: Telesimulation (no results); Telehealth (telehealth installer); Remote simulation (no results); Distance Simulation (no results); Distance learning technology (nothing meaningful to be used in healthcare simulation).

Indeed.com:

Search words: Telesimulation (no results); Distance Simulation: (Educational Specialist Oxford Medical Simulation - VR Simulation); Remote Simulation (nothing meaningful for distance simulation).

- Telehealth Installer -
<https://us60.dayforcehcm.com/CandidatePortal/en-US/clh/site/cvn/Posting/View/5838>
- Simulation technology Manager - Stony Brook University, NY
 - Posted on LinkedIn, Higheredjobs, Google
 - Official Job Title: Instructional Support Specialist
 - Job Field: Administrative & Professional (non-Clinical)
 - https://www.higheredjobs.com/admin/details.cfm?JobCode=177559460&utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic

Consultation with the Field Experts in Distance Simulation Technologies

Several field experts were consulted for informal interviews to assess current technologies and competencies being used or needed for distance simulation. These experts were recommended by simulation educators who have been conducting distance simulations for quite some time.

The following questions were asked from the experts:

- What are the technical competencies a simulation educator should have while doing distance simulations?
- How do you train your educators/techs whichever you have?
- What are the job competencies you would be looking for if you are to hire someone?

Search Findings

Several searches led to simulation technician degree and jobs, and nothing was found which is specifically for distance simulation technology requirement or competencies. Therefore, the competencies and requirements were handpicked from all the available fields, courses, degrees and currently available job descriptions from which a rubric for ideal competencies was synthesized.

The research on current education, training and job descriptions for these fields revealed that

- There are no established **standards** in teaching distance simulation technologies, telehealth or telesimulation currently.
- CHSE blueprints and INACSL Standards of best practice have provided guidelines to some extent.
- There are no specialized **degrees**, courses or certifications in these categories which will prepare the professionals working in these fields. Repeated searches over the internet, found only a handful of courses which can help the professionals in this category:

- A telehealth certificate from telehealth.org,
- Facilitating simulation at a distance or telesimulation - a Simulation Canada's micro-course and
- A certification in telehealth by American College of Education
- Additionally, there were not a lot of **job descriptions** for these fields when researched during the month of July 2021. The potential competencies needed to perform the job optimally, were mixed with other jobs such as simulation technicians, telehealth companies jobs, or software and hardware related fields. These jobs required specific technical competencies and a bit of basic knowledge of simulation.
- **Interviews** with field experts revealed several qualities needed to become a distance simulation educator such as:
 - familiarity with the terminology used in simulation, healthcare and technology in general
 - Ability to translate the simulation standards to the newest technologies
 - Competency in using software and hardware, as well as in the modality of extended reality
 - Mastery in video conferencing, and major media categories to competently use during and after simulation
 - right mindset to embrace the change and technology
 - Flexibility and passion
 - Strong communication skill

Additional References Used:

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- von Lubitz D, Carrasco B, Gabbrielli F, & Ludwig T. Transatlantic medical education: preliminary data on distance-based high fidelity human patient simulation training. *Medicine Meets Virtual Reality (J. Westwood et al., EDs)* 2003.
- Okraïneç, A., Henao, O., & Azzie, G. (2010). Telesimulation: an effective method for teaching the fundamentals of laparoscopic surgery in resource-restricted countries. *Surgical endoscopy*, 24(2), 417–422. <https://doi.org/10.1007/s00464-009-0572-6>
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- Spencer, K. 2020. What is digital fluency? *Digital learning collaborative*. (Original work published 2015). Retrieved on 8/23/21 from <https://www.digitallearningcollab.com/blog/what-is-digital-fluency> ; <http://blog.core-ed.org/blog/2015/10/what-is-digital-fluency.html>

STRENGTHS & LIMITATIONS OF THE EVIDENCE

Strengths:

One of the biggest strengths of this research is the exploration of a wide variety of resources before the rubric was synthesized from the data collected to determine the competencies and the characteristics of an ideal distance simulation educator. If present, these characteristics will enable the simulation educator to synthesize, facilitate and evaluate a simulation session according to the research based guidelines in simulation performed at a distance or in alternate environments, media and extended realities.

Another potential strength of this research was its ability to point out gaps in technical and technological knowledge and skills for distance simulation educators which might lead to future research in the use of technologies for distance simulation.

Limitations:

One of the big limitations or barriers was unfamiliarity with the digital world and the technologies needed for distance simulation on behalf of the researchers. To mitigate this deficit, an attempt was made to do extensive online research to learn more about the technology in general and for distance simulation in particular. This attempt was supplemented by repeated conversations with technical experts, producers and distributors of commercial products for distance simulation.

Another big limitation of this research stemmed from the lack of published literature in distance simulation education and the role of technology in it. A comprehensive guideline cannot be made without knowing the depth and breadth of the field and what has been researched. Additionally, the researchers were hard-pressed for time for this project considering the amount of resources and information needed to be explored. If possible for future iterations of this project, the researcher would like to include other available resources in terms of more courses, educational programs and contact various higher education institutes, or HEI, for the current job descriptions of simulation technologies they are employing or training their simulation educators to use. Additional expert consultation and interviews would also be helpful in this regard.

FORMULATION OF RECOMMENDATIONS

Introducing distance and intricate technology into the mix of simulation leads to several expected as well as unexpected complexities. To mitigate these complexities, there is a need to:

1. **Define and establish the elements of technologies needed for distance simulation education.** Considering the fact that use of distance simulation and its related technology is highly institution specific, the need to establish the criteria for a competent (a beginning) and an expert (an advanced) level is even more important. One possibility is to follow the education model of other health professions in which the basic knowledge and skills are obtained to become competent to enter into the workforce and further advancements in career are based on professional needs, desires and circumstances to become expert in certain healthcare fields.
2. **Implore the ethical implications for utilizing technologies for learners as well as facilitators.** The need to acknowledge that there are ethical ramifications for having more technologies in an alternate learning environment, media and extended realities, and to uncover these unknown ethical implications is an obligation which resides with all current and future consumers of distance simulation. Among the known ethical implications of distance simulation are the inequitable use, inaccessibility to all learners, potential threat to psychological safety for all participants, cybersecurity issues with online presence, financial restraints and the impact on the educators with the lack of institutional support. . The consumers of distance simulation need to recognize that increasing use of technology can adversely affect minorities and can negatively affect diversity, inclusion and equity among the participants.
3. **Establish training courses to make distance simulation educators digitally fluent** (Spencer, 2020). They could be offered through the simulation society, independent distance simulation educators, or even degree programs. Considering the busy schedules of healthcare simulation

educators, micro-credentials or nano courses would be a better fit considering a vast majority of the simulation educators need to be grandfathered into the distance simulation technology.

CONSIDERATION OF BENEFITS AND HARMS

Benefits:

Benefits include a thorough analysis of current status of almost non-existent instructional and technological competencies for distance simulation and opportunities for future research for a thorough analysis of such competencies.

Harms:

Possible harms and potentially negative effects include inability to achieve learning objectives due to inability to correctly match the appropriate modality and required technology to meet that particular intended outcome, psychological safety issues for the learners and facilitators, ethical issues arising due to breach of ethical principles of equity and diversity, and inherent risk of increased technical and technological challenges. Another drawback would be financial burden for the consumers of distance learning technologies such as learners, educators, higher educational institutes, and healthcare facilities using simulation.

SUMMARY OF DISCUSSION

Certified Healthcare Simulation Educator or CHSE blueprints and INACSL Standards of Best Practice touched upon some of the technical qualities needed to be a distance simulation educator. However, it did not quite fulfill what is needed in this day and age regarding technology for distance simulation whether digitally delivered or utilizing any other media. No current standards, matriculated and non-matriculated education or online courses, and even competencies in a job description were reflective of what was needed to enable a simulation educator to instruct successfully in distance simulation modalities.

Instructional Designer

DESCRIPTION

Instructional design is the creation of learning experiences and materials in a manner that results in the acquisition and application of knowledge and skills.

In the context of workplace learning, Instructional Design provides a practical and systematic process for effectively designing effective curricula.

The role of instructional design is important to distance simulation educators because the individual who fills this role is involved in the educational process from beginning to end, supporting collaboration between stakeholders, designing the materials, and evaluation of efficacy. The instructional designer will need to stay abreast of emerging technologies in order to support distance simulation.

SEARCH METHODS & DATA SOURCES

To investigate the role of Instructional Design, an instructional designer was interviewed to get a better understanding of the current role and the growth potential for this role. certification exams were looked for which currently do not exist. Degree programs were searched and found no Bachelor of Science in Instructional Design programs; therefore, programs that offer Master of Science in Instructional Design were evaluated. Educator Training Programs for instructional design were also reviewed.

The International Board of Standards for Training, Performance and Instruction (IBSTPI) competencies for instructional design were reviewed. The IBSTPI standards were combined with the descriptions of 6 job posting found on Glassdoor.

Search terms include: Instructional design, instructional design models, degree programs for instructional design, educator training, training design, performance analyst, project manager, and strategic and learning consultant.

EVIDENCE SELECTION CRITERIA

The role was discussed with an individual who currently holds the title of instructional designer in order to gain a perspective to identify needed attributes, degree programs and potential search criteria. The IBSTPI instructional design standards were included as they are an established set of criteria for this role. Due to the fact that there are many different skills associated with this role, job descriptions for the role of instructional design were investigated. Combining established standards with current job postings and a conversation with an individual who holds this title gives the role description more depth than using any one of these sources.

STRENGTHS & LIMITATIONS OF THE EVIDENCE

The strength of the evidence for the study of the role of instructional design is the multiple angles from which the role was examined. The role is diverse with many requirements so using job descriptions from prospective employers makes the identified criteria current.

One limitation is that there were no Bachelor's Degree programs identified for this role, but many job postings require a Bachelor's Degree in instructional design. The major limitation is the short time frame in which this role was examined. Given the broad range of skills needed for this role, more detailed criteria may have been identified if more time was devoted to the search.

To further investigate this role, research into the backgrounds of multiple instructional designers to identify a meaningful path to attainment of the multiple skills required to fulfill this complex role is recommended. Ideally inquiry at the university level to identify existing plans to establish undergraduate degree programs. Lastly, the investigation of training programs to identify how these programs have incorporated lessons learned from the abrupt move to distance learning into their courses.

FORMULATION OF RECOMMENDATIONS

The top 3 broad recommendations for incorporating the instructional designer role into distance simulation education are:

The instructional designer will synthesize learning theories with emerging technologies that are required for success in distance education while maintaining excellence, assuring quality and keeping institutional integrity.

The instructional designer will act as liaison between all stakeholders in the end-to-end processes that are required to develop, support, maintain and evaluate distance simulation.

The instructional designer will keep current with training and learning industry trends, best practices, new technologies, and emerging innovations in the field of distance simulation education in order to support learners, educators, and all other stakeholders. The knowledge of current trends will inform the process of evaluation of existing programs, implementation of improvement plans, and the development of new educational opportunities.

CONSIDERATION OF BENEFITS AND HARMS

The benefit of incorporation of the role of instructional design is the comprehensive scope that the instructional designer will bring to a distance simulation program. Instructional designers touch all aspects of an educational offering and have the knowledge and skills to design, implement and evaluate the programs they are involved with. Potential harm is that there may be more distance simulation programs than there are instructional designers, which could create unrealistic expectations for individuals and for programs. The potential increased cost of adding an instructional designer is a factor; however, it may be that having an individual who can be involved in all aspects of the process may decrease costs in the long run by saving time and ensuring all stakeholders are brought into the discussions.

SUMMARY OF DISCUSSION

For the role of Distance Instructional Designer, a conceptual framework will need to be developed that should include how to set up the distance simulation environment. The roles of instructional designer and instructional technologist are very similar and in many centers the role is filled by the same person. The development of this role will require looking at how to implement LMS and design pieces into future distance simulation. Instructional designers are not leveraged at many centers and some simulation educators are not familiar with the role. Faculty who are not comfortable with the role of the instructional designer have had a more difficult time incorporating this role into distance learning. Creating formal recommendations for the role of distance instructional designer may cause undue stress for simulation centers and their staff if they are unable to bring on additional staff to fill this role.

Instructional Technologist

ROLE DESCRIPTION

The Instructional Technologist (IT) typically works in collaboration with the instructional design team to support the development of online, hybrid, remote, and face-to-face courses and possesses expertise in the area of accessibility compliance of course materials.

The IT researches technology and digital resources that support the teaching methodologies, learning and pedagogy. The IT ensures educators and students are proficient in the use of the technology.

Significance of Instructional Technology Role for Distance Simulation Educators

The IT role is an important aspect of the distance simulation role as the expert in educational technology and digital resources. The distance simulation educator will need to have fundamental knowledge of these resources as well as accessibility compliance, user experience and educator/student proficiency.

SEARCH METHODS AND DATA SOURCES

Search Strategy

Questions Explored:

- What are the responsibilities of the Instructional Technologist?
- How can the instructional technologist role translate to the role of the distance simulation educator?
- If an organization was seeking to hire an instructional technologist, what would be the ideal degree or certification this person would need?
- If an organization was seeking to hire an instructional technologist, what would the job description/requirements entail?

Search Terms

Instructional Technologist AND	Degree Program AND	Job Description AND	Certification AND	User Experience AND
Simulation Education	Instructional Technologist	Instructional Technologist	Instructional Technologist	Research
Distance learning support	User experience	User experience	User experience	Design
Distance Simulation	User Design	User Design	User Design	Distance Simulation
Technical Support	Education Technology Specialist	Distance learning support	Distance learning support	Distance learning support

Data Sources for certifications

- International Society for Technology Educators

Data Sources for Job Descriptions

- Indeed
- Glassdoor
- Zip Recruiter

Fields Explored

- Instructional Technologist
- Learning/Education Technology Specialist
- User Experience Design/Research
- Technical Support
- Distance Learning Support

EVIDENCE SELECTION CRITERIA

Degree Programs

Drexel University (Instructional Technology Specialist Certificate) and (MS in Learning Technologies) were selected for their focus on educational technology.

Certifications

- ISTE Certification for Educators was selected because it is the only non-vendor certification for educators and is recognized internationally.
- Penn State (Post Baccalaureate Certificate in Educational Technology Integration) was selected because it is an educational certificate, which is faster to obtain and specifically focuses on educational technology integration and development.

Job Descriptions

Indeed:

- Education Technology Specialist
- Instructional Technology Coach
- Learning Technology Specialist

Glassdoor:

- UX designer
- UX Researcher
- Learning Technology Specialist

STRENGTHS AND LIMITATIONS OF EVIDENCE

Strengths

The strength of this study was the ability to integrate multiple roles to provide roles, responsibilities, and desired education for the distance simulation educator.

Limitations

Lack of time was a limitation. This search was performed over a month's time, which allowed the researcher to provide a brief overview. More time would allow for interviewing current instructional technologists and user experience designers to get a more comprehensive idea of the essential component from those jobs needed for the distance simulation educator. More intimate knowledge of training programs, job descriptions, and degree programs would provide a more comprehensive overview of the role.

Another limitation is that this research was done amidst a pandemic in which many educational programs were forced into distance simulation and the roles were not clearly defined up to this point. As time passes, and more research is done, there will be more research and literature to support best practices.

Suggestions for Future Research

A scoping review to include gray literature, workshops, and conferences to further explore the role would give a more in-depth view. More time would allow the researcher to find and include other available resources such as more educational programs, certifications, and job descriptions.

FORMULATION OF RECOMMENDATIONS

Top 3 recommendations for how this role can inform the distance simulation educator:

- The development of a fundamental educational technology course that will combine technology support, digital resources and user experience that could be condensed to a short certification course or blueprinted for a certification exam.
- An overview of different technologies, including learning management systems and simulation platforms.
- An overview of how to provide support for learners and educators on different technology platforms.

CONSIDERATION OF BENEFITS AND HARM

This role is very broad, which means the additional training may be long and expensive. It may be better to have someone with this job description on staff. However, that may not be realistic for smaller facilities. The benefits would be that the simulation educator with a foundational understanding would have the ability to locate resources and support.

SUMMARY OF DISCUSSION

The user experience designer/researcher and instructional technologist is a broad role that will need to be simplified by identifying the critical aspects needed for the distance simulation educator. These include accessibility, digital resources, and obtaining, maintaining and supporting technology for the learner and for the educator who are delivering the educational technology in distance simulation.

Production Roles

DESCRIPTION

Role Description

Production roles are a broad category of roles including titles such as multimedia developer and graphic designer. Generally, these roles include the planning and creation of audio-visual content, production of digital web content, and visual concept creation.

Importance of Role for Distanced Simulation Educators

Production roles are important to the role of the simulation educator because of their contribution to the quality of learning experiences in the distanced simulation environment. The creation of high-quality audio-visual content can impact engagement, understanding, and digestibility of a learning experience. Additionally, design consideration and a critical eye contribute to the successful navigation of cultural and other learner considerations.

SEARCH METHODS AND DATA SOURCES

Search Strategy

The broad scope of production roles presented a challenge to search direction and scope. Search strategy began with a search for industry certification. When no role-specific standard certifications were found, job postings for various titles were searched and listed qualifications were used to direct a degree program search and further job title searches. Graphic design and multimedia development roles emerged as stand-out titles. Various media developer titles were searched but found to be interchangeable with multimedia development roles. Media and video production job descriptions and qualifications also overlapped with multimedia development roles. Educational developer jobs were searched and found to fall under instructional technologist roles, which were outside of the scope of production roles.

List of Sources

Degree Programs

Bachelor's in Graphic Design and Media Arts: Southern New Hampshire University

- <https://www.snhu.edu/admission/academic-catalogs/coce-catalog#/programs/N1-oQ4LKe/VJGdQLNqg>

Bachelor's in Interactive Communication: Universitat Autònoma de Barcelona

- <https://www.uab.cat/web/estudiar/ehea-degrees/study-plan/skills/interactive-communicati-on-1345467897139.html?param1=1345780069247>

Job Description

SENIOR GRAPHIC/ MULTIMEDIA DESIGNER (UNIVERSITY OF MINNESOTA)

- https://hr.myu.umn.edu/psc/hrprd/EMPLOYEE/HRMS/c/HRS_HRAM_FL.HRS_CG_SEA_RCH_FL.GBL?Page=HRS_APP_JBPST_FL&Action=U&SiteId=1&FOCUS=Applicant&JobOpeningId=341784&PostingSeq=1&

GLASSDOOR: COURSEWARE DEVELOPER MULTIMEDIA PROGRAMMER (CAE)

- https://www.glassdoor.com/job-listing/courseware-developer-multimedia-programmer-cae-JV_IC1136760_KO0.42_KE43.46.htm?jl=4108216375

INDEED: MULTIMEDIA AND ELEARNING DEVELOPER (PEARSON)

- <https://www.indeed.com/q-Multimedia-Elearning-Developer-jobs.html?vjk=9f6b52e9392d06ab>

Search Terms

Jobs AND	Degree programs AND	Certifications AND
graphic design	graphic design	graphic design
multimedia developer	multimedia development	multimedia development
various media developer	various media development	various media development
video producer	video production	video production
media producer	media production	media production
	computer science	
	computer programming	

EVIDENCE SELECTION CRITERIA

Degree Programs

Bachelor's in Graphic Design and Media Arts: Southern New Hampshire University

- This degree program was chosen for its detailed program outcomes and focus on graphic design and familiarization with the latest technologies.

Bachelor's in Interactive Communication: Universitat Autònoma de Barcelona

- This degree program was selected for its breadth of focus in production, including preparation for a variety of multimedia development career paths.

Career outlook and degree objectives for researched computer science and programming degrees were less relevant to production roles and distanced sim educators.

Job Descriptions

SENIOR GRAPHIC/ MULTIMEDIA DESIGNER (UNIVERSITY OF MINNESOTA)

- This job posting was chosen for its university setting and combined scope of graphic and multimedia design, demonstrating the overlap of production role expertise.

COURSEWARE DEVELOPER MULTIMEDIA PROGRAMMER (CAE)

- This job posting was chosen for its simulation-based education setting and its focus on multimedia development.

INDEED: MULTIMEDIA AND ELEARNING DEVELOPER (PEARSON)

- This job posting was chosen for its e-learning setting and its demonstration of scope overlap with instructional technology.

STRENGTHS AND LIMITATIONS

Strengths

This study has strength in its exploration of a variety of production roles in various educational contexts. It is also supplemented by the demonstration of overlap and hybridization of roles within the broader category of production roles.

Limitations

The study was conducted in a short period of time and variation in production roles and applications is vast. The focus was also narrowed to the exploration of these roles in educational environments only.

Future Study

Recommendations for the future study of this role includes identifying individuals in graphic design, multimedia development, and other similar positions from a variety of institutions (e.g. university setting, health system continuing education setting, non-educational settings, etc.). Holding interviews to obtain more insight into their duties, education, and career path would be helpful for further investigation and understanding of the role. A prioritization of deeper exploration for the multimedia development role is recommended as it emerged as the most posted role in the educational context with relevance to the distanced simulation educator role.

CONSIDERATIONS OF BENEFITS AND HARMS

The benefits of incorporating production role expertise into the distanced simulation educator include improved creation and delivery of high-quality audio-visual content to supplement the delivery of distanced simulations. The scope of these roles and skill sets are broad. Without narrowing scope and focus when applying them to distanced simulation educator development, training could be costly in time and resources and overwhelming to the educators

FORMULATION OF RECOMMENDATIONS

1. Focus on multimedia development role as it has demonstrated the most applicability to a distanced simulation educator role.
2. Aim for a familiarization with common platforms for each component of media production (e.g. Zoom for web-conferencing, YouTube for video-sharing, etc.) to provide foundational knowledge and reference point for educators, knowing that new technologies will continue to emerge.
3. Consider inclusion or further investigation of design-thinking as it emerged in both degree programs and job descriptions.

SUMMARY OF DISCUSSION

Overall, production roles are broad and cover a variety of skills with multimedia developer roles having emerged as the most relevant to the distanced simulation educator role. Expertise in these roles directly contributes to the delivery of high-quality audio-visual components of distanced simulations. Aiming for acquisition of baseline knowledge for each component of multimedia production may be most practical for faculty development.

Production in XR

DESCRIPTION

The production XR role provides support and designs for augmented, virtual reality, and gaming. This role is significant as we see these technologies used increasingly for health profession education live in person and for simulation at a distance.

Definitions for this review

- Augmented reality is a technology that overlays digital computer-generated information onto objects or places in the real world.
- Virtual reality requires a head-mounted display unit that immerses the wearer in a three-dimensional computer-generated environment.
- Mixed reality (MR), also known as XR, is a hybrid of VR and AR and blends what is physically present to that which is 100% computer-generated.
- Serious Games are games designed explicitly and carefully to rehearse and train for actual world events or processes.

SEARCH METHODS AND DATA SOURCES

Search Strategy

Based on the question, “*what are the competencies of the CHSE of the future?*” a search was initiated to identify knowledge and skills related to the various technologies current and future simulation educators will need familiarity with for delivering healthcare simulation programming. The search was begun by looking at job descriptions. From terms found in the job descriptions, other search words were identified. Degree programs were explored, followed by a short search for certifications and certificates. As this is an emerging area for simulation and simulation at a distance, the identified exemplars are from various academic and other areas related to simulation at a distance.

Search terms

Jobs AND	Degree program AND	Certification AND
Simulation	Simulation	Simulation
Simulationist	Simulation Educator	Gaming
Simulation Educator	Simulation Science	Digital Technology
Simulation Developer	Gaming	XR: AR, MR, VR
Simulation Specialist	Digital Technology and Education	
Simulation Technologist	Game Design	
	Game Programming	
	Gaming and Instructional Design	
	Extended Reality	

EVIDENCE SELECTION CRITERIA

Sources

Job Descriptions

Current job descriptions for simulation roles in academic institutions were reviewed and chosen as examples of the growing knowledge required for the simulation educator role. These descriptions provided direction for further search terms, degrees, and certification (selected qualifications and job duties are shown below).

Stanford Simulation Specialist 2 job description: Glassdoor
<https://www.glassdoor.com/member/home/index.htm>

- Engineering degree or expertise with computers, AV systems, and other technologies.
- Experience with video post-production software (FinalCut Pro or similar program) and ability to edit simulation videos for educational use.

West Coast University: Simulation Center Specialist: Glassdoor

<https://www.glassdoor.com/member/home/index.htm>

- Education requirement:
Associate degree or equivalent experience in Information Systems, Computer Science, Education, Film Making/Production Design, Biology, Chemistry, or a related field required.

University of Miami: Simulation Technologist - Harvey Development Technician

<https://www.glassdoor.com/member/home/index.htm>

- The technician may be involved in engineering or educational course development or research support and coordination of web-based training.
- Have a working knowledge of web-based applications and information systems.

Degree Programs

University of Michigan: School of Information:

Graduate Certificate in Extended reality (XR) (only open to U-M graduate students).

Metropolia University of Applied Sciences

Helsinki XR Center is the study facility of Metropolia University of Applied Sciences XR Design education program.

4-year Bachelor of Design Degree

Coursera

Offered by the University of Michigan

Extended reality for Everybody Specialization

- A Coursera Specialization is a series of courses that helps you master a skill.
- Every Specialization includes a hands-on project. You'll need to successfully finish the project(s) to complete the Specialization and earn your certificate. If the Specialization includes a separate course for the hands-on project, you'll need to finish each of the other courses before you can start it.

Course 1: Intro to AR/VR/MR/XR: Technologies, Applications & Issues

Course 2: User Experience & Interaction Design for AR/VR/MR/XR

Course 3: Developing AR/VR/MR/XR Apps with WebXR, Unity & unreal

Coursera

Introduction to XR: VR, AR, and MR Foundation

- This is the first of three planned courses in Unity's XR Specialization, which include the Mobile VR App Development with Unity course and a future course focused on developing Augmented Reality (AR) applications with Unity.

Certification

No certifications were identified. Further exploration may yield more information and resources.

- *University of Washington: Certificate in game design:*
- *NYU: Tandon School of Engineering: Professional Certificate in AR/VR development and 3D graphics*

STRENGTHS AND LIMITATIONS OF THE EVIDENCE

Strengths

Strengths of this overview include identifying skills and knowledge and expanded job duties emerging to be included in the role of the simulation educator that applies to simulation at a distance. The evidence supports that simulation educators will need to be aware of the trajectory of technologies that may be utilized for healthcare simulation.

Limitations

This was not a comprehensive overview and was completed as the landscape is changing related to technology, health profession education, pedagogy, and simulation. While some new skills were found related to the XR production role of a simulation educator, this overview lacks depth and breadth. Further inquiry into the XR production role in simulation and simulation at a distance is recommended.

Future Study

It is recommended that further exploration be conducted to identify in greater depth the skills required to deliver healthcare simulation programming at a distance and in person. Further research is warranted to uncover the utility of AR, VR, and MR, where it fits into health professional training, best practices for developing platforms, and implementation and assessment of its effectiveness. Cost-benefit analysis research and studies to determine infrastructure and equipment requirements, and updates to define qualifications, expectations, and realistic simulationist workloads should be considered.

FORMULATION OF RECOMMENDATIONS

- Research cost and benefits of utilizing AR, VR, and MR for healthcare simulation education and training.
- Identify knowledge and skills related to AR, VR, MR, and healthcare simulation in the current and fast-changing landscape.
- Focus on the development of standardized language and baseline education necessary for entry into healthcare simulation education.

CONSIDERATION OF BENEFITS AND HARMS

The benefits of the simulationist with knowledge of AR, VR, and MR technologies in distance simulation allow for quality health profession education programming aligned to evidence-based best practices.

Distance simulation benefits from a simulation educator designing and implementing healthcare simulations that are meaningful, purposeful, and ultimately lead to safe patient care.

AR, VE, and MR technologies can mitigate logistical and capacity concerns and may assist in meeting stakeholder and community advances in healthcare. However, these technologies do not come without ethical concerns and risks. Without clearly identifying expectations and required knowledge, resources may be misallocated, expectations of simulation experiences and objectives may not be met.

Ethical concerns regarding the psychological safety of students and facilitators must be taken into consideration. The simulation educator must know how, why, and when technologies are appropriate and what data the platform collects, who has access to it and how it is used. There is also a concern about equitable access to infrastructure and equipment for all who will access and use these technologies for distance simulation activities. Being aware of the trajectory of these technologies as they intersect with healthcare simulation is paramount.

SUMMARY OF DISCUSSION

The Production XR role is significant as we see AR, VR, MR technologies increasingly utilized for health profession education at a distance and in person. For high-quality, meaningful, and purposeful simulation experiences, the simulation educator needs to be knowledgeable of the credibility of and how the technologies fit into healthcare education simulation. Furthermore, healthcare simulation educators will need to stay abreast of changes in AR, VR, and MR technologies and be a part of the development of the tech as it relates to producing and supporting health education programming.

Phase I Draft Guidelines

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Outline:

1. Definitions in distance simulation
2. Characterizations of distance simulation
 - a. Methods
 - b. Modality
 - c. Purpose
3. General guidelines for the distance simulation educator:
 - a. The current CHSE Rubric was formulated from a job analysis that examined these particular roles as they relate to the average simulation educator. We will be considering these roles:
 - i. Simulation Educator
 - ii. Simulation Facilitator
 - iii. Standardized Patient Educator
 - iv. Simulation Administrator
 - b. In the areas where technology knowledge and skills are mentioned in the CHSE rubric, we will add guidelines for technology to be used in distance simulation, particularly: methods, modality, purpose.

- c. In the areas where teaching philosophy is mentioned:
 - i. Diversity in distance simulation
 - ii. Ethics in distance simulation
- d. Research and limitations in distance simulation
- e. We will be including a third column for future directions in distance simulation education and competencies for the ideal distance sim educator.

Steps: (FOLLOWING [NICE GUIDELINES](#)):

DEFINITION

For the purposes of the study, healthcare distance simulation can include any number of different modalities, commonly referred to as remote simulation, telesimulation, telepresence, and virtual simulation that are geographically separated and/or facilitated at a distance.

DISTANCE SIMULATION TAXONOMY:

Modality (Platform requirement, Simulators)

- i. Learning management systems (LMS)
 - 1. Physical simulators (Task trainers connected with LMS)
- ii. Simulation management systems
- iii. Web-based conferencing
- iv. Web-based conferencing + Apps
 - 1. Screen-based team modalities (e.g. powerpoint, whiteboards, collaborative software)
 - 2. Escape Room (with web conferencing)
- v. Web-based conferencing + Simulation
 - 1. Simulated Participants (embedded simulated providers, family, or standardized patients)
 - 2. Broadcasting of Simulation (manikins)
 - 3. Telesimulation (use of telehealth technologies for simulation)
 - 4. Task trainer (e.g., models sent home, 3D printed, ETeams)
 - 5. Table-top Games
- vi. Screen-based simulation (2D)
 - 1. Avatars
 - a. Case-based
 - b. Digital worlds (e.g. Second Life) -asynchronous abilities
 - c. Escape Rooms (with avatars)

- d. MUVE multi-user virtual environments -synchronous
 - 2. Case-based
- vii. Extended Reality (XR)
 - 1. Virtual Reality (VR)
 - 2. Augmented Reality (AR)
 - 3. Mixed Reality (MR)
 - a. With physical artifact model with NFC tags
 - b. With physical task trainer sensors

Methods

- i. Asynchronous
- ii. Synchronous
- iii. Hybrid Synchronous Distance Simulation (use of multiple methods & Modalities)

Purpose

- viii. Team Training
- ix. Procedural Training
- x. Clinical Skills/Behaviors
- xi. Event Training
- xii. Communication
- xiii. Assessment (individual, teams, systems)
- xiv. Research
 - 1. Method Evaluation
 - 2. Modality Evaluation
 - 3. Program Evaluation
 - 4. Limitations of environments or modalities

Added new sections to CHSE blueprint namely:

- 1. Professional Development
- 2. Diversity and Inclusion
- 3. Standardized Participants (SP)
- 4. Technology

Domain/Item	Basic Guidelines Basic guidelines are healthcare simulation educator requirements for <i>competency</i> to develop, conduct, and assess distance simulation.	Advanced Guidelines Advanced guidelines are <i>pioneering</i> requirements for distance simulation educators who have proven themselves to be forward thinkers and early adopters (trailblazers) in their practice and serve as mentors and exemplars to others in the field.
DOMAIN I: PROFESSIONAL VALUES AND CAPABILITIES		
1. Demonstrate characteristics of a champion in distance simulation	1.1. Basic guidelines: 1.1.1. Exhibit experience in distance simulation 1.1.2. Show authentic enthusiasm for distance simulation 1.1.3. Provide site leadership in distance simulation based learning 1.1.4. Demonstrate strong interpersonal skills in online platforms 1.1.5. Support the work of others in the distance simulation setting 1.1.6. Assist in developing strategic planning in implementation of distance simulation 1.1.7. Implement operational planning in execution of distance simulation 1.1.8. Define the pros and cons of both in-person and distance simulation	1.2. Advanced guidelines: 1.2.1. Develop and implement a strategic plan that coordinates and aligns resources of distance simulation to achieve its goals 1.2.2. Engage in scholarship, service and leadership roles in distance simulation 1.2.3. Function as a change agent and leader in distance simulation in educator and team training governed by a theoretical framework 1.2.4. Provide leadership and assistance in planning, designing and conducting distance simulation program evaluation activities 1.2.5. Articulate the value proposition or return on investment of the distance simulation program to the learners, educators and organizational leadership in the light of its technological and educational needs, capabilities and limitations 1.2.6. Disseminate distance simulation project findings through scholarly journal articles, briefs, and other products for a variety of audiences, along with presentations to external groups 1.2.7. Mentor educators in the design and implementation of distance simulation 1.2.8. Provide expert advice and guidance on evaluation of distance simulation to other educators, program managers, and leadership 1.2.9. Lead the development, implementation, and customization of a database solution for collecting, accessing, and reporting

		<p>performance data for distance simulation-based education programs</p> <p>1.2.10. Establish and maintain regional, national and international connections to support the strategic goals of distance simulation technology, curriculum, and instruction programs</p> <p>1.2.11. Maintain and manage the financial resources to support stability, sustainability, and growth of the distance simulation program's goals and outcomes</p>
<p>2. Recognize opportunities to advocate for distance simulation</p>	<p>2.1. Basic guidelines:</p> <p>2.1.1. Disseminate and promote distance simulation knowledge (e.g. social media, conversations with colleagues, and presentations)</p> <p>2.1.2. Work with stakeholders and various departments to establish trust and build excitement for leveraging human capital (curriculum designers, IT support, educational technologists, etc.) and technology in the curriculum related to distance simulation</p> <p>2.1.3. Recognize opportunities to advocate for distance simulation through the use of new technologies</p> <p>2.1.4. Develop a plan to elicit buy-in, support and make an impact with distance simulation</p> <p>2.1.5. Advocate for the integration of distance SP simulation methodology into the curriculum where appropriate</p> <p>2.1.6. Advise department/program educator/ stakeholders in distance simulation methodology, technology, and best practices with a focus on standardization and efficiencies across the healthcare continuum</p>	<p>2.2. Advanced guidelines:</p> <p>2.2.1. Recognize national opportunities to advocate for distance simulation through developing new technologies</p> <p>2.2.2. Improve the strategy, implementation, management, monitoring, and evaluation of distance simulation projects using a conceptual framework</p> <p>2.2.3. Act as an advocacy member to develop comprehensive system wide learning strategies, ensuring distance simulation is represented in the direction and priorities of healthcare simulation</p> <p>2.2.4. Develop organizational plans strategically for distance educational innovations in your institution or national organizations</p>

	2.1.7. Develop a basic strategic plan to elicit buy-in, support and make an impact with distance simulation debriefing	
3. Demonstrate and cultivate respect in relationships with participants, educators, and the community of distance simulation	<p>3.1. Basic guidelines:</p> <p>3.1.1. Demonstrate respect in relationship to individual personal environments, physical assets, family, and pets that appear in the distance simulation environment</p> <p>3.1.2. Convey respect for learners, understanding their perspective and concern for their psychological safety in the distance simulation environment</p> <p>3.1.3. Support the public relations activities of distance simulation program (e.g. virtual tours, community outreach)</p> <p>3.1.4. Maintain a facilitative approach in distance simulation that is participant-centered and driven by the objectives, participant’s knowledge or level of experience, and the expected outcomes</p>	<p>3.2. Advanced guidelines:</p> <p>3.2.1. Disseminate knowledge and research around considerations and techniques in maintaining respectful relationships in the distance simulation environment</p> <p>3.2.2. Develop and collaborate with internal resources to integrate techniques that demonstrate and maintain respect with individuals, educators, staff and community members in respectful distance simulation development and programming</p>
4. Demonstrate characteristics of teamwork in distance simulation	<p>4.1. Basic guidelines:</p> <p>4.1.1. Demonstrate team building approach in distance simulation</p> <p>4.1.2. Integrate basic seminal concepts in online education</p> <p>4.1.3. Engage and work collegially with distance simulation educators, staff, students and administration</p> <p>4.1.4. Demonstrate outreach to online or instructional developers and technologists</p>	<p>4.2. Advanced guidelines:</p> <p>4.2.1. Demonstrate team building approach to distance simulation through engagement of health professionals in interprofessional education within various areas of the medical setting</p> <p>4.2.2. Demonstrate integration of knowledge from online education content experts</p>

<p>5. Recognize ethical principles and personal responsibilities as they apply to distance simulation</p>	<p>5.1. Basic guidelines:</p> <p>5.1.1. Apply The Healthcare Simulationist Code of Ethics in distance simulation</p> <p>5.1.2. Understand the value of ethical, intercultural, and agency / client / stakeholder relationships as it relates to distance simulation</p> <p>5.1.3. Recognize unethical, illegal, and inappropriate assessment methods and use of assessment information related to distance simulation</p>	<p>5.2. Advanced guidelines:</p> <p>5.2.1. Advocate for ethical principles identified in distance simulation</p> <p>5.2.2. Explore ethical challenges that apply distinctly to distance simulation in healthcare</p>
<p>6. Distinguish among the various roles of personnel involved in distance simulation</p>	<p>6.1. Basic guidelines:</p> <p>6.1.1. Recognize subject matter experts in distance simulation</p> <p>6.1.2. Provide personnel with appropriate expertise to support and sustain distance simulation</p> <p>6.1.3. Identify resources for instructional design, online education, and distance simulation technologies</p>	<p>6.2. Advanced guidelines:</p> <p>6.2.1. Demonstrate a network of resources specific to technology, instructional design, and online education</p> <p>6.2.2. Explore new roles and methods in distance simulation as the field develops</p>
<p>7. Demonstrate compliance with regulatory requirements related to distance simulation</p>	<p>7.1. Basic guidelines:</p> <p>7.1.1. Maintain thorough knowledge of relevant and most updated policies and regulatory requirements for distance education including cybersecurity</p> <p>7.1.2. Assure compliance with current government, regulatory and contract requirements for delivery of distance simulation, including but not limited to accessibility consideration (e.g. ADA, HIPAA, FERPA, HITECH, etc)</p> <p>7.1.3. Demonstrate compliance with regulatory requirements related to the disability requirement applicable to distance simulation</p>	<p>7.2. Advanced guidelines:</p> <p>7.2.1. Maintain compliance with regulations governing healthcare facilities, simulation centers, distance simulation, and the rules of accrediting bodies by monitoring operations and initiating changes where required</p> <p>7.2.2. Create policies and procedures to support and sustain distance simulation including audiovisual capture, retention, use, privacy and confidentiality</p> <p>7.2.3. Support institutions that are early in the process of incorporating distance simulation into their practice</p>

	<p>7.1.4. Maintain a constant focus on copyright, usability, and accessibility requirements and standards related to distance simulation</p> <p>7.1.5. Adhere to all policies and practices of distance simulation to maintain students rights including protection from vendors who can have access to students' information</p> <p>7.1.6. Seek to protect patient and students' privacy and confidentiality during and after distance simulation including data storage and accessibility</p>	
<p>8. Evaluate credibility of resources in distance simulation education (e.g. websites, listservs, literature)</p>	<p>8.1. Basic guidelines:</p> <p>8.1.1. Review content provided by external training vendors to ensure alignment with learning objectives and to further develop and maintain distance simulation</p> <p>8.1.2. Be familiar with recorded data, reference materials, equipment specifications, maintenance agreements, and warranties for all equipment &/or technology needed for distance simulation</p> <p>8.1.3. Manage external vendor relationships to ensure graphic, animation, and remote simulation products are accurate and up to acceptable standards</p>	<p>8.2. Advanced guidelines:</p> <p>8.2.1. Serve as a liaison between distance simulation vendors and organizational affiliation</p> <p>8.2.2. Collaborate with medical illustrators and designers to develop effective distance simulation resources</p> <p>8.2.3. Demonstrate feedback loops for software designers and staff</p> <p>8.2.4. Recommend credible distance simulation resources (e.g. social media, blogs, communities of practice, committees, research, publications)</p>
<p>9. Utilize credible resources to inform distance simulation practices</p>	<p>9.1. Basic guidelines:</p> <p>9.1.1. Keep up-to-date with current practices of distance simulation education through the review of relevant journals, abstracts, and scientific literature</p>	<p>9.2. Advanced guidelines:</p> <p>9.2.1. Identify resources for both team and organization, needed to facilitate excellence in distance teaching such as conferences, grey literature, concept papers, and membership in related professional organizations</p>

<p>10. Differentiate among the elements of research in distance simulation</p>	<p>10.1. Basic guidelines:</p> <p>10.1.1. Understand basic research design issues which effectively support development and implementation of evaluation/assessment, measurement, qualitative, and/or statistical study related to distance simulation</p> <p>10.1.2. Demonstrate critical and analytical thinking skills about research and practices in educational applications in distance simulation</p> <p>10.1.3. Study the comparability of distance simulation achievement measures, including concordance or linking studies</p> <p>10.1.4. Develop and manage research and evaluation plans and timelines, and monitor integrity of data collection and use of protocols and procedures related to distanced simulation</p> <p>10.1.5. Assist in writing technical reports, manuscripts, and other dissemination products, e.g., research briefs related to distance simulation</p> <p>10.1.6. Understand basic methodological concepts associated with research and their potential applications in distance simulation</p> <p>10.1.7. Seek to understand research methods used in quantitative research in distance simulation-based education</p> <p>10.1.8. Conduct and develop literature reviews related to educational research, evaluation, and assessment to inform distance simulation practices</p>	<p>10.2. Advanced guidelines:</p> <p>10.2.1. Engage in distance simulation research, improvement and implementation research, health-related program policy development and evaluation, and educational scholarship</p> <p>10.2.2. Conduct sound, high-quality research to inform the construction, interpretation, and validation of distance simulation practices</p> <p>10.2.3. Conduct research on innovation activities for distance simulation and assist with dissemination of research findings</p> <p>10.2.4. Use appropriate criteria to effectively evaluate the quality of research proposals and research reports for evaluation/assessment, measurement, qualitative, and/or statistical research related to distance simulation</p> <p>10.2.5. Consult with other simulation and program staff on research and evaluation design, instruments, and data collection and analysis for a range of projects related to distance simulation</p> <p>10.2.6. Create and/or help in creating distance simulation platforms</p> <p>10.2.7. Consult in the development of new innovative platforms for distance simulation</p> <p>10.2.8. Identify important areas of future research in distance simulation</p> <p>10.2.9. Collaborate with other researchers in distance simulation research</p>
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<p>11. Define elements of quality management related to distance simulation</p>	<p>11.1. Basic guidelines:</p> <p>11.1.1. Ensure ongoing systematic and programmatic improvement processes for the distance simulation programs</p> <p>11.1.2. Develop Quality Assurance (QA) testing process of distance simulation prior to use</p> <p>11.1.3. Evaluate and report the effectiveness and success of the distance simulation educational project as continuous quality improvement</p>	<p>11.2. Advanced guidelines:</p> <p>11.2.1. Demonstrate knowledge of principles and methods for data reporting, analyses and other program metric measurements for distance simulation</p> <p>11.2.2. Develop and implement novel methods to continuously plan, conduct, assess and improve distance simulation</p> <p>11.2.3. Develop and implement practical strategies to plan, conduct, and evaluate distance educational experiences</p> <p>11.2.4. Identify opportunities for quality assurance (QA) data research regarding distance simulation in clinical education and curriculum</p>
<p>12. Engage in professional development in distance simulation</p>	<p>12.1. Basic guidelines:</p> <p>12.1.1. Recognize opportunities for professional development in distance simulation (e.g. conferences, webinars)</p> <p>12.1.2. Provide coaching and feedback to team members, facilitators, instructors, standardized patients, simulated participants, surrogates and learners as appropriate regarding distance simulation</p> <p>12.1.3. Create and implement educational programs for new simulation educators including prebriefing, simulation and debriefing focused on distance simulation</p> <p>12.1.4. Engage in key educator/faculty development strategies in distance simulation such as distance peer coaching</p>	<p>12.2. Advanced guidelines:</p> <p>12.2.1. Identify distance simulation training needs based on current strategic organizational and departmental goals in collaboration with organizational leaders, unit-based/ facility educators, and other content experts</p> <p>12.2.2. Engage in regional, national, or international groups focused on improving distance simulation</p>

<p>13. Establish diversity and inclusivity in distance simulation</p>	<p>13.1. Basic guidelines:</p> <p>13.1.1. Understand the role of culture in distance simulation during scenario execution, task training, tele-debriefing, and distance feedback</p> <p>13.1.2. Aim to work in distance simulation productively with anyone regardless of background</p> <p>13.1.3. Empathy and awareness of impact on others in distance simulation</p> <p>13.1.4. Establish and support a climate that fosters belonging in distance simulation through initiatives of eliminating systemic racism and bias</p> <p>13.1.5. Create options for engagement and foster equitable participation in distance simulation</p> <p>13.1.6. Set explicit student expectations in distance simulation by using inclusive language, setting expectations for valuing diverse viewpoints</p> <p>13.1.7. Consider designing all course elements for accessibility (e.g., visual or hearing impairments) for perceptual disabilities as well as low resource organizations and communities.</p> <p>13.1.8. Ensure that distanced simulation objective items address ethnic and cultural diversity as represented in student populations</p> <p>13.1.9. Reflect on one’s beliefs about distance simulation teaching to maximize self-awareness and commitment to inclusion</p> <p>13.1.10. Use distance simulation approach to overcome geographical barriers and to increase accessibility to education</p>	<p>13.2. Advanced guidelines:</p> <p>13.2.1. Recruit diverse faculty in distance simulation</p> <p>13.2.2. Consider the inequities of digital fluency during distance simulation</p> <p>13.2.3. Assist in ensuring that each course reflects a diverse society and world</p> <p>13.2.4. Offer distance simulation in native language when feasible</p> <p>13.2.5. Encourage diverse distance simulation programs and offer distance simulation in native languages when feasible</p> <p>13.2.6. Apply professional, ethical, and socially and culturally sensitive practices to the design and development of any media elements</p> <p>13.2.7. Offer resources and training to the educators and team members in justice, equality, diversity and inclusion</p> <p>13.2.8. Explore and share limitations and preferences of distance simulation considering diversity, equity and inclusion</p> <p>13.2.9. Reflect continuously on what inclusivity means in distance simulation and how it can be improved beyond the traditionally considered areas</p>
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DOMAIN II: HEALTHCARE AND SIMULATION KNOWLEDGE AND PRINCIPLES

<p>14. Describe the factors affecting participant engagement within a distance simulation activity (e.g. learner level, realism, suspension of disbelief)</p>	<p>14.1. Basic guidelines:</p> <p>14.1.1. Utilize principles of realism including leverage storytelling to enhance the learner experience during distance simulation</p> <p>14.1.2. Use various types of fidelity to create the required perception of realism pertinent to the environment or technology being used in distance simulation</p> <p>14.1.3. Integrate instructional techniques to engage distance learners and mitigate frustration during distance simulation and debriefing.</p>	<p>14.2. Advanced guidelines:</p> <p>14.2.1. Develop and maintain learning solutions in distance simulation which are engaging and creative, while maintaining the instructional integrity and validity of the solutions</p> <p>14.2.2. Develop and maintain innovative instructional approaches in distance simulation learning solutions to enhance participant engagement</p> <p>14.2.3. Innovate and research engagement techniques in distance simulation</p>
<p>15. Examine opportunities to integrate distance simulation into education, research, and practice</p>	<p>15.1. Basic guidelines:</p> <p>15.1.1. Integrate distance simulation into education, research, and practice using the available technologies</p> <p>15.1.2. Bring together internal and external resources to provide needed technology for distance simulation training</p> <p>15.1.3. Assist in a strategic plan implementation that coordinates and aligns resources of the distance SBE program to achieve its goals</p> <p>15.1.4. Maintain awareness in distance simulation education integration through the review of emerging simulation technologies, include underlying educational principles</p> <p>15.1.5. Facilitate the adult learning process using distance simulation modalities that creates a safe non-threatening climate which supports learning across the healthcare system</p>	<p>15.2. Advanced guidelines:</p> <p>15.2.1. Develop and align tech solutions and opportunities that assist in developing instructional pathways, socio-emotional supports, and technology-integrated, distance simulation curriculum</p> <p>15.2.2. Synthesize information from a variety of sources and create a learner centric experience that leverages innovative distance simulation solutions and analyzes and documents learner skill gaps to determine the best learning format</p> <p>15.2.3. Provide educator orientation and continuing education opportunities around distance simulation based on evidence-based practices</p> <p>15.2.4. Communicate with stakeholders about how the distance simulation program’s mission, vision, and goals align with the overall improvement of health care education and eventually health care delivery</p> <p>15.2.5. Be familiar with theories related to distance learning e.g. online simulation, virtual simulation, synchronous and asynchronous simulation and telesimulation</p>

	15.1.6. Utilize existing frameworks and theories that leverage both health professions education literature and clinical practice in distance simulation	15.2.6. Distinguish between and apply the principal theories, conceptual frameworks and approaches regulating interactive communication for the enhancement of distance simulation experiences
16. Differentiate the phases of a distance simulation activity	16.1. Basic guidelines: 16.1.1. Apply concepts of distance simulation and debriefing teaching strategies, distance curriculum theory and design and distance evaluation in the educator role	16.2. Advanced guidelines: 16.2.1. Distinguish the differences in phases between distance simulation, hybrid, and in-person simulation activity
17. Differentiate among the methods of feedback suitable for the distance learning modality being used	17.1. Basic guidelines: 17.1.1. Differentiate among the methods of feedback suitable for the distance learning modality being used	17.2. Advanced guidelines: 17.2.1. Distinguish the differences in feedback considerations between distance simulation, hybrid, and in-person simulation activity
18. Differentiate elements of debriefing in distance simulation (Reflection, Facilitation, Phases)	18.1. Basic guidelines: 18.1.1. Apply concepts of distance simulation and debriefing teaching strategies in the educator role 18.1.2. Employ concepts of online conversation strategies 18.1.3. Construct the distance debriefing on the basis of a conceptual framework structured purposefully for online/distance/virtual environments. 18.1.4. Demonstrate specific skills and knowledge in simulation pedagogy and current distance simulation technologies	18.2. Advanced guidelines: 18.2.1. Develop concepts of online education and virtual strategies 18.2.2. Develop innovative approaches to distance debriefing that leverages best practices 18.2.3. Facilitate the execution of effective interprofessional educators debriefing interprofessional learners.

<p>19. Differentiate among distance simulation modalities</p>	<p>19.1. Basic guidelines: 19.1.1. Differentiate among distance simulation modalities 19.1.2. Choose appropriate distance simulation modality for teaching context</p>	<p>19.2. Advanced guidelines: 19.2.1. Assist modality creators in creating features for distance simulation 19.2.2. Explore new distance simulation modalities</p>
<p>20. Distinguish among various distance simulation activity settings (e.g. 2D, 3D, XR-based, telesimulation, mobile etc)</p>	<p>20.1. Basic guidelines: 20.1.1. Construct the format of distance simulation based on the purpose, theory, and modality for the simulation-based experience 20.1.2. Consider the implications of hybrid distance simulation and in-person</p>	<p>20.2. Advanced guidelines: 20.2.1. Understand XR, telehealth, and 2D technologies</p>
<p>21. Distinguish among various distance simulation activity settings (e.g. 2D, 3D, XR-based, telesimulation, mobile etc)</p>	<p>21.1. Basic guidelines: 21.1.1. Maintain a facilitative approach that is learner-centered and driven by the objectives, learners’ knowledge or level of experience, and the expected outcomes 21.1.2. Assess usability of applications</p>	<p>21.2. Advanced guidelines: 21.2.1. Use distance simulation learning methods that stimulate, prepare and support students to take responsibility for their own future professional development and learning 21.2.2. Conduct usability assessment studies</p>
<p>22. Differentiate elements of realism for distance simulation</p>	<p>22.1. Basic guidelines: 22.1.1. Establish a “fiction contract” with learners in the distance setting 22.1.2. Balance technology and fidelity to achieve desired distance simulation learning outcome</p>	<p>22.2. Advanced guidelines: 22.2.1. Assist modality creators in creating features more realistic for healthcare experiences</p>

<p>23. Recognize stressors contributing to individual and team performance (e.g. cognitive, affective/emotional, psychomotor) when using distance simulation</p>	<p>23.1. Basic guidelines: 23.1.1. Understand the increase in cognitive load and its impact when using distance simulation including debriefing 23.1.2. Adapt mitigation strategies to lessen stressors in distance simulation 23.1.3. Utilize strategies to minimize disengagement in distance simulation</p>	<p>23.2. Advanced guidelines: 23.2.1. Share the strategies to manage cognitive load during distance debriefing 23.2.2. Develop strategies to optimize the affective/emotional impact of distance simulation</p>
<p>24. Define elements of human factors in distance simulation</p>	<p>24.1. Basic guidelines: 24.1.1. Apply knowledge in simulation-based education during distance simulation exercises to practice technical and non-technical simulation skills 24.1.2. Recognize concepts that impact distance simulation (e.g. human factors, patient safety, modeling, connectivity issues, web conferencing platforms, IT issues)</p>	<p>24.2. Advanced guidelines: 24.2.1. Distinguish human factors from online platform artifacts 24.2.2. Optimize human social environment in distance simulation</p>
<p>25. Identify roles for distance simulation to improve patient safety</p>	<p>25.1. Basic guidelines: 25.1.1. Identify roles for distance simulation to improve patient safety using distance simulation technologies 25.1.2. Implement established patient safety simulations in the distance simulation environment</p>	<p>25.2. Advanced guidelines: 25.2.1. Utilize distance simulation for effective systems integration 25.2.2. Implement distance simulation to assess and improve health delivery systems (i.e., translational research)</p>
<p>26. Recognize concepts of modeling in</p>	<p>26.1. Basic guidelines 26.1.1. Recognize concepts of modeling in distance simulation</p>	<p>26.2. Advanced guidelines: 26.2.1. Apply concepts of modeling in distance simulation educators development</p>

distance simulation		
DOMAIN III: EDUCATIONAL PRINCIPLES APPLIED TO DISTANCE SIMULATION		
27. Distinguish principles of utilizing distance simulation as an educational tool (e.g. learning and digital taxonomies, assessment, learning theories)	<p>27.1. Basic guidelines:</p> <p>27.1.1. Implement a variety of learning environments and pathways including blended, online, in-person, and virtual</p> <p>27.1.2. Apply most current educational theories and principles of the involved technologies and modalities in distance simulation</p> <p>27.1.3. Understand cognitive concepts of distance simulation similar to those in distance learning i.e. creating shared meaning through reflection and discourse</p> <p>27.1.4. Recognize social concepts of distance simulation including personal, affective relationships, open and trusting communication</p> <p>27.1.5. Implement teaching concepts of distance simulation as it relates to engagement, for example the influence of the educator’s online presence</p> <p>27.1.6. Apply shared mental model concepts in distance simulation</p>	<p>27.2. Advanced guidelines:</p> <p>27.2.1. Develop and promote expertise in theories, principles, and processes of distance simulation</p> <p>27.2.2. Develop and implement methods of critique and critical-reflective applications related to distance simulation</p> <p>27.2.3. Teach principles of utilizing distance simulation as an educational tool</p> <p>27.2.4. Demonstrate knowledge of state-of-the-art resources, work, collaborations, and techniques of distance simulation</p>
28. Integrate instructional design concepts into distance simulation activities	<p>28.1. Basic guidelines:</p> <p>28.1.1. Possess foundational knowledge of learning science and instructional design to assist educators in the design and development of teaching and learning efforts for distance simulation programs</p> <p>28.1.2. Apply relevant learning design and instructional design theory, and universal design principles to</p>	<p>28.2. Advanced guidelines:</p> <p>28.2.1. Teach or present instructional design concepts as it relates to distance simulation</p> <p>28.2.2. Develop new principles of instructional design specific for distance simulation</p> <p>28.2.3. Partner with internal and external trainers to develop distance simulation courses within the Learning Management System (</p>

	<p>ensure a robust design approach for distance simulation</p> <p>28.1.3. Plan and design the structural format of distance simulation activities based on the purpose, theory, and modality</p> <p>28.1.4. Use specific instructional methods in distance simulation including individual and group learning, distance learning, online education (synchronous and asynchronous), e-learning, tutorials and seminars, written programme units, supervision, mentoring, blended learning and independent learning</p> <p>28.1.5. Utilize instructional methods in collaborative educational models, small and large group teaching, team-based, interactive and experiential case-based learning in distance simulation setting</p>	<p>LMS): construct course shells, create enrollment rules and reports, design distance simulation and build surveys, and configure automated notifications.</p> <p>28.2.4. Act as an internal consultant utilizing current and emerging software and training authoring tools to implement advanced online and blended or hyflex learning solutions for remote simulation</p>
<p>29. Integrate needs assessment data into distance simulation activities (e.g. psychomotor behavior, technical, behavioral, cognitive)</p>	<p>29.1. Basic guidelines:</p> <p>29.1.1. Integrate needs assessment data into distance simulation activities as identified by simulation team</p>	<p>29.2. Advanced guidelines:</p> <p>29.2.1. Perform needs assessment to provide the foundational evidence of the need for a well-designed distance simulation experience</p>

<p>30. Define goals of distance simulation activities</p>	<p>30.1. Basic guidelines:</p> <p>30.1.1. Use the results of the needs assessment to guide the development of an overarching goal or broad objective for the distance simulation</p> <p>30.1.2. Ensure goals and objectives are within the learners zone of proximal development</p>	<p>30.2. Advanced guidelines:</p> <p>30.2.1. Determine goals for distance simulation activities which could be achieved in a particular digital environment or as it applies to distance simulation</p>
<p>31. Create measurable learning objectives of distance simulation activities</p>	<p>31.1. Basic guidelines:</p> <p>31.1.1. Construct specific, measurable, achievable, realistic, and time-phased (SMART) objectives based on expected outcomes suitable for distance simulation</p>	<p>31.2. Advanced guidelines:</p> <p>31.2.1. Distinguish whether objectives are sufficiently specific, measurable, achievable, realistic, and time-bound</p>
<p>32. Identify and integrate assessment methods pertinent to distance simulation</p>	<p>32.1. Basic guidelines:</p> <p>32.1.1. Identify whether the assessment of the distance simulation is for formative, summative or high-stakes evaluation</p> <p>32.1.2. Determine the method of participant evaluation prior to the simulation-based experience considering the limitations of the distance simulation environment</p>	<p>32.2. Advanced guidelines:</p> <p>32.2.1. Understand the implications of summative or high-stakes assessment in the distance simulation environment</p> <p>32.2.2. Create or adopt an evaluation framework to guide selection and/or development of a valid and reliable tool to measure expected outcomes of distance simulation activity</p> <p>32.2.3. Include psychometric properties in the evaluation tool for distance simulation</p>
<p>33. Prepare orientation and prebriefing/briefing for participants and simulation team for distance simulation</p>	<p>33.1. Basic guidelines:</p> <p>33.1.1. Provide orientation for stakeholders to simulation principles, equipment, and virtual spaces for the distance simulation-based experience</p> <p>33.1.2. Incorporate distance preparatory activities and distance prebriefing/briefing to prepare learners for the distance simulation-based experience</p>	<p>33.2. Advanced guidelines:</p> <p>33.2.1. Create effective prebriefing/briefing practices including addressing concerns</p> <p>33.2.2. Explore special considerations in debriefing practice including psychological safety</p>

<p>34. Plan logistics for distance simulation activities (e.g. people, supplies, timing)</p>	<p>34.1. Basic guidelines: 34.1.1. Attend to distance simulation logistical details 34.1.2. Plan end-to-end logistics of distance simulation projects for students, educators and staff including designing and development of remote simulation programs, supply line, and timing</p>	<p>34.2. Advanced guidelines: 34.2.1. Advocate for logistics that promote inclusivity in distance simulation 34.2.2. Facilitate logistics for complex or multi-modal forms of distance simulation 34.2.3. Develop logistics checklist or template to ensure system readiness for distance simulation activities</p>
<p>35. Employ strategies to balance risks and outcomes in distance simulation (e.g. real vs simulated equipment / supplies / hardware / software)</p>	<p>35.1. Basic guidelines: 35.1.1. Employ strategies to balance risks and outcomes in distance simulation (e.g. real vs simulated equipment / supplies / hardware / software)</p>	<p>35.2. Advanced guidelines: 35.2.1. Advocate for distance simulation strategies that are inclusive and equitable for stakeholders, community, educators and students</p>
<p>36. Design the case/scenario applicable to distance simulation</p>	<p>36.1. Basic guidelines: 36.1.1. Design a scenario or case to provide the experiential learning and the context for the distance simulation-based experience which is deliverable within the limitations of that particular technology or learning environment (e.g. XR)</p>	<p>36.2. Advanced guidelines: 36.2.1. Maintain and ensure cases in repository are current to standards and practices and supported by available technology</p>
<p>37. Select distance simulation modality/ modalities</p>	<p>37.1. Basic guidelines: 37.1.1. Select the appropriate modality to be used in distance simulation based on the learning objectives, characteristics of learners, and context of the case</p>	<p>37.2. Advanced guidelines: 37.2.1. Secure and ensure the maintenance of adequate infrastructure that supports available modalities 37.2.2. Research and recommend updated and improved distance simulation technological modalities</p>

	<p>37.1.2. Facilitate all distance simulation-based experiences including modalities used in traditionally practiced simulations (mannequin-based, multi-manikin sessions, multi station-task training, and standardized participant (SP)) as well as extended realities, screen simulations and virtual patients in several forms</p> <p>37.1.3. Consider involving the learners in selecting technology for distance simulation when appropriate</p>	<p>37.2.3. Develop staff and educators in the appropriate use of available distance simulation modalities</p> <p>37.2.4. Evaluate the effectiveness of distance simulation modalities</p>
38. Select the virtual or digital locations to conduct the distance simulation activity	<p>38.1. Basic guidelines:</p> <p>38.1.1. Select the virtual or digital locations to conduct the distance simulation activity, e.g. escape room, breakout sessions, virtual spaces or environments</p>	<p>38.2. Advanced guidelines:</p> <p>38.2.1. Remain current regarding emerging digital locations for distance simulation</p> <p>38.2.2. Research and recommend updated and improved distance simulation digital locations</p> <p>38.2.3. Develop staff and educators in the appropriate use of available distance simulation digital locations</p> <p>38.2.4. Evaluate the effectiveness of distance simulation digital locations</p>
39. Identify required resources in distance simulation (e.g. personnel, equipment, supplies)	<p>39.1. Basic guidelines:</p> <p>39.1.1. Identify digital and online technologies and organizational resources to support distance simulation logistics, fidelity and data capture</p> <p>39.1.2. Develop proficiency in distance simulation technology in accordance with the organizational needs and capabilities.</p>	<p>39.2. Advanced guidelines:</p> <p>39.2.1. Partner with and support design researchers in conducting user discovery, concept validation, and usability testing for distance simulation</p> <p>39.2.2. Partner with and support user interface (UI) designers to establish reusable functionality as a part of the design system for distance simulation</p>
40. Collaborate in the coordination of the distance simulation team	<p>40.1. Basic guidelines:</p> <p>40.1.1. Collaborate with the simulation team in the design, development and maintenance of teaching and learning efforts, designing online and hybrid courses for distance simulation activities</p>	<p>40.2. Advanced guidelines:</p> <p>40.2.1. Collaborate with stakeholders and subject matter experts to design, develop and deploy interactive distance simulation learning solutions</p>

	<p>40.1.2. Work collaboratively with simulation operations specialists, educators, staff and others to ensure proper planning and design of distance simulation activities</p> <p>40.1.3. Participate in educators and department meetings to assist with development and implementation of distance simulation experiences</p>	<p>40.2.2. Exchange experiences with other programs sharing solutions for common challenges in distance simulation</p> <p>40.2.3. Establish research collaborations in distance simulation research</p>
<p>41. Prepare materials for participants and the simulation team for the distance simulation activity (instructions, equipment and supplies)</p>	<p>41.1. Basic guidelines:</p> <p>41.1.1. Provide online preparation materials and resources to promote participants’ ability to meet identified objectives and achieve expected outcomes of the distance simulation-based experience</p> <p>41.1.2. Include specific instructions to successfully navigate the technical platform or environment to perform that specific distance simulation-based experience</p>	<p>41.2. Advanced guidelines:</p> <p>41.2.1. Explore innovative materials or resources in distance simulation used in other institutions or disciplines</p>
<p>42. Assemble distance simulation specific resources (e.g. scenario, SP case, teaching script, programming list, any modality-specific requirements)</p>	<p>42.1. Basic guidelines:</p> <p>42.1.1. Assist in creating basic supporting multimedia assets needed for the distance simulation, including but not limited to: audio, video, live and remote simulations, role plays, games, exams, assessments, podcasts, job aids, and reference materials</p> <p>42.1.2. Utilize the knowledge of adult learning and authoring tools such as Articulate 360/Storyline®, Adobe Creative Cloud® (Photoshop, InDesign), Camtasia®, and Microsoft Office®</p>	<p>42.2. Advanced guidelines:</p> <p>42.2.1. Create all supporting multimedia assets needed for the distance simulation-based learning.</p> <p>42.2.2. Integrate the knowledge of adult learning and authoring tools products in development and early stages of production</p> <p>42.2.3. Develop the team for creating and evaluating the assets in alternative formats for delivering distance simulation</p>

<p>43. Conduct pilot activity for distance simulations (i.e. dress rehearsal, field test, run-through)</p>	<p>43.1. Basic guidelines:</p> <p>43.1.1. Conduct pilot activity for distance simulations (i.e. technical rehearsal, virtual test, run-through)</p> <p>43.1.2. Troubleshoot after introducing new technology or modality into distance simulation</p>	<p>43.2. Advanced guidelines:</p> <p>43.2.1. Conduct audio/visual recording and transfer to archival format for analysis, and manage communication tools, data collection and collation in order to improve the future iterations of that particular distance simulation</p>
<p>44. Plan for evaluation of the distance simulation activity</p>	<p>44.1. Basic guidelines:</p> <p>44.1.1. Design an evaluation that meets the stakeholder needs established in the comprehensive assessment of distance simulation</p> <p>44.1.2. Include an evaluation of the learner(s), facilitator(s), the distance simulation-based experience, and the support team considering the nuances of the modality and the technology used to ensure performance meets educational needs and goals</p> <p>44.1.3. Understand the principles behind choosing appropriate assessment methods (how to administer, score, and interpret assessments) for the evaluation of distance simulation</p> <p>44.1.4. Develop evaluation plans for completing formative and summative program evaluations of distance simulation</p>	<p>44.2. Advanced guidelines:</p> <p>44.2.1. Design, plan, and implement research on distance simulation evaluation projects with diverse purposes, audiences, and modalities</p> <p>44.2.2. Design and implement best practices of various evaluation methodologies and survey techniques in formal and informal distance simulation education settings</p> <p>44.2.3. Disseminate knowledge about evaluation in distance simulation (e.g. formal or informal publications, presentations)</p> <p>44.2.4. Obtain consensus within the program on methods to measure transfer of learning in distance simulation</p> <p>44.2.5. Minimize negative learning in distance simulation</p>
<p>45. Modify distance simulation activities based on pilot activities</p>	<p>45.1. Basic guidelines:</p> <p>45.1.1. Modify distance simulation activities based on pilot activities</p>	<p>45.2. Advanced guidelines:</p> <p>45.2.1. Document processes and evaluation of pilot activities for distance simulation.</p>

<p>46. Conduct prebriefing/briefing/ orientation of distance simulation</p>	<p>46.1. Basic guidelines: 46.1.1. Begin distance simulation-based experiences with a prebriefing including the introduction to the modality to prepare participants for the distance simulation-based experience</p>	<p>46.2. Advanced guidelines:</p>
<p>47. Create and maintain a psychologically-safe distance simulation environment</p>	<p>47.1. Basic guidelines: 47.1.1. Describe practices associated with establishing psychological safety in distance simulation 47.1.2. Create and maintain a psychologically-safe distance environment for learning 47.1.3. Nurture a learner-centered environment during distance debriefing 47.1.4. Protect the privacy of the personal information of all stakeholders, including that which may be revealed within a distance simulation activity 47.1.5. Ensure safe working conditions in the design of the distance simulation activity (e.g., number of rotations, number of breaks, physical, cognitive, and psychological challenges in the role portrayal) 47.1.6. Understand and ensure the application of the principles of confidentiality to all participants and aspects of each distance simulation event (e.g. video &/or sound recording, private space)</p>	<p>47.2. Advanced guidelines: 47.2.1. Develop tools to evaluate participant psychological safety and effectiveness of prebriefing in distance simulation</p>
<p>48. Perform distance simulation debriefing</p>	<p>48.1. Basic guidelines: 48.1.1. Become adaptive experts in distance simulation debriefing 48.1.2. Conduct online debriefing that is conducive to distance simulation and supports online</p>	<p>48.2. Advanced guidelines: 48.2.1. Critique approaches to assessment and feedback in health profession distance simulation settings 48.2.2. Compare and contrast immersive, procedural, and clinical event distance simulation debriefing</p>

	<p>confidentiality, trust, open communication, self-analysis, feedback, and reflection</p> <p>48.1.3. Devote enough concentrated attention during the distance simulation to effectively debrief</p> <p>48.1.4. Develop appropriate questioning techniques and styles for distance debriefings</p> <p>48.1.5. Provide constructive distance simulation debriefing including aspects of human factors and crisis resource management (CRM)</p> <p>48.1.6. Debrief according to the predefined objectives and outcomes of the distance simulation-based experience</p> <p>48.1.7. Explain the importance of the analysis/understanding phase and the application/generalization phase that can be found in several models of debriefing and how they may differ in a distance environment</p> <p>48.1.8. Incorporate different distance debriefing styles into individual practice</p> <p>48.1.9. Facilitate web technology-based discussion through verbal and non-verbal techniques</p> <p>48.1.10. Consider the use of video, replay, and review devices when available for the distance simulation debrief</p>	<p>48.2.3. Develop advanced approaches that improve the effectiveness of debriefing in distance simulation</p> <p>48.2.4. Tailor advanced debriefing techniques to distance simulation context</p>
<p>49. Facilitate reflective thinking and development of action plans in distance simulation</p>	<p>49.1. Basic guidelines:</p> <p>49.1.1. Facilitate a distance simulation-based experience by using methods that involve the delivery of cues (predetermined and/or unplanned) aimed to assist participants in achieving expected outcomes</p>	<p>49.2. Advanced guidelines:</p>

	49.1.2. Facilitate the development of action plan after the distance simulation experience to support participants in achieving expected outcomes	
50. Manage physical and psychological risks in distance simulation	50.1. Basic guidelines: 50.1.1. Manage difficult and/or emotional distance learning conversations 50.1.2. Recognize and manage the upset distance participant(s) 50.1.3. Be familiar with counseling resources such as Employee Assistance Program (EAP®) or campus counseling	50.2. Advanced guidelines: 50.2.1. Coach, develop and support facilitators, educators and staff by providing "peer feedback" and exploring actions/frames/pathways for debriefer and facilitator development and improvement for quality in simulation programming
51. Participate in distance simulation educators debriefing and feedback	51.1. Basic guidelines: 51.1.1. Evaluate distance debriefing using peer feedback and self evaluation 51.1.2. Develop and apply key skills for reflective distance simulation program design and distance evaluation	51.2. Advanced guidelines: 51.2.1. Evaluate distance debriefing and provide feedback to other educators 51.2.2. Appraise effectiveness of healthcare simulation distance debriefing session 51.2.3. Develop innovative simulation debriefing and feedback tools catered to the distance environment
52. Analyze distance simulation activity evaluations	52.1. Basic guidelines: 52.1.1. Understand and effectively use a variety of data collection and analysis methods and techniques that are associated with evaluation/assessment, measurement, qualitative, and/or statistical research related to distance simulation 52.1.2. Collect and report on key metrics related to distance simulation 52.1.3. Support and report on the student and staff development of simulation, technology, and distance	52.2. Advanced guidelines: 52.2.1. Evaluate relevant distance simulation project data using qualitative and quantitative evaluation tools as part of program evaluations and develop reports, including program recommendations 52.2.2. Strengthen the knowledge base in psychometrics, research methodology, evaluation, and data science as they apply to distance simulation

	simulation key performance indicators, interests, and trends of students and staff	
53. Modify future distance simulation activities based on analyzed evaluations.	<p>53.1. Basic guidelines:</p> <p>53.1.1. Understand how to use assessment results to make decisions about students, curricula, or instruction in the context of distance simulation</p> <p>53.1.2. Communicate assessment results and interpretation related to distanced simulation to a broad audience</p>	<p>53.2. Advanced guidelines:</p> <p>53.2.1. Understand how knowledge of assessment can be used to inform policy related to distance simulation</p> <p>53.2.2. Communicate the knowledge translation skills required to disseminate high-quality research outcomes through impactful peer-reviewed publications, technical reports, and presentations related to distance simulation</p>
54. Apply reliability and validity in distance simulation	<p>54.1. Basic guidelines:</p> <p>54.1.1. Apply basic concepts of reliability and validity to distance simulation educational assessments</p> <p>54.1.2. Differentiate the concepts of reliability and validity in designing distance simulation activities</p> <p>54.1.3. Recognize and analyze the impact of changes in the modality and technology being used in distance simulation design on the assessment's reliability and validity</p>	<p>54.2. Advanced guidelines:</p> <p>54.2.1. Design and implement studies to measure the reliability and validity of assessment tests related to distance simulation</p> <p>54.2.2. Develop an experienced approach in the development and testing of distance simulation educational assessments and the impact of the modality and technology being used in the reliability and validity of that assessment</p> <p>54.2.3. Seek and opt for a better psychometric values of validity and reliability if more than one modality and/or technology in distance simulation could be employed to meet the learning outcomes</p>
55. Recognize the unique criteria for developing and implementing distance simulation in interprofessional education	<p>55.1. Basic guidelines:</p> <p>55.1.1. Conduct distance Sim-IPE based on a theoretical or a conceptual framework</p> <p>55.1.2. Utilize best practices in the design and development of distance Sim-IPE</p> <p>55.1.3. Recognize and address potential barriers to distance Sim-IPE</p>	<p>55.2. Advanced guidelines:</p> <p>55.2.1. Develop strategies to enhance interdisciplinary distance learning experiences</p> <p>55.2.2. Seek alliances within and among the agencies to develop and integrate distance Sim-IPE in the curriculum</p>

<p>(Sim-IPE) activities</p>	<p>55.1.4. Facilitate appropriate team-based distance debriefing strategies and feedback following distance Sim-IPE based experiences</p> <p>55.1.5. Include an appropriate evaluation plan for that particular modality being used for distance Sim-IPE</p>	
<p>DOMAIN IV: SIMULATION RESOURCES AND ENVIRONMENTS</p>		
<p>56. Use appropriate technologies in distance simulation</p>	<p>56.1. Basic guidelines:</p> <p>56.1.1. Identify the elements of the distance simulation technologies and acquire their basic knowledge (e.g. application software, operating systems, learning management systems, technology devices, audiovisual components, virtual environment technologies, 2D and 3D applications, etc)</p> <p>56.1.2. Integrate and apply various technologies into distance instruction, including web-based teaching environments, content management systems, collaborative project development, and interactive media</p> <p>56.1.3. Identify the characteristics of information systems from both a conceptual and a practical perspective from the distance simulation perspective</p> <p>56.1.4. Stay abreast of the knowledge in existing and emerging technologies and trends related to simulation at a distance</p> <p>56.1.5. Anticipate and arrange the training resources needed for distance simulation (e.g., computer, microphone, camera, internet, props, moulage, videos, task trainers, other unspecified telemedicine remote patient monitoring devices consistent with scenario)</p>	<p>56.2. Advanced guidelines:</p> <p>56.2.1. Provide technical assistance, support, feedback, and training to educators, instructors and staff in the use of distance simulation software systems, reports, data entry and documentation for all types of distance simulation</p> <p>56.2.2. Oversee and assist technicians as necessary to maintain operational functionality of distance simulation by keeping an oversight and management of the IT infrastructure and computer system/network in a digital or virtual environment</p> <p>56.2.3. Differentiate among operating systems and associated compatibilities that support and develop distance simulation (knowledge of current and emerging products)</p> <p>56.2.4. Provide education and technical assistance to educators/healthcare institution representatives in understanding and coaching distance simulation</p> <p>56.2.5. Determine and plan the technological infrastructure necessary for the creation, storage, analysis and distribution of interactive distance simulation experiences</p>

	56.1.6. Ensure connectivity and test the connections, microphones, cameras and evaluate spaces for privacy for all parties involved in distance simulation	
57. Utilize telemedicine technology in distance simulation	<p>57.1. Basic guidelines:</p> <p>57.1.1. Plan, prepare and utilize the technology needed for simulation using telemedicine technology including selection and use of hardware, software and internet variables</p> <p>57.1.2. Define the elements of virtual environment and virtual simulation, technologies, existing models</p> <p>57.1.3. Understand the logistics of delivering telesimulation for supporting feedback processes intended to support learning</p> <p>57.1.4. Acquire safe and effective ways to handle telesimulation emergencies in case of system failure</p> <p>57.1.5. Become proficient in engaging standardized participants and simulated participants virtually, training and writing, curating and modifying the scenarios for distance simulation</p>	<p>57.2. Advanced guidelines:</p> <p>57.2.1. Understand the importance of interprofessional collaboration and advocacy for the implementation and advancement of telesimulation</p> <p>57.2.2. Find trends in telesimulation leadership, management, delivery and ethical issues</p>
58. Work with Standardized Participants (SPs) in distance simulation	<p>58.1. Basic guidelines:</p> <p>58.1.1. Collaborate on the development and design of scenarios for distance simulation teaching and assessment activities involving SPs</p> <p>58.1.2. Recruit SPs with the training or ability to utilize distance simulation technology and software</p> <p>58.1.3. Provide SPs with strategies to deal with unanticipated learner questions and behaviors in the digital environment and technology support</p>	<p>58.2. Advanced guidelines:</p> <p>58.2.1. Develop and promote expertise in knowledge, skills, and attitudes related to SP-based distance simulation</p> <p>58.2.2. Attend and participate in appropriate organizational workshops to keep current on educational theory and practice in the use of SPs in distance simulation</p> <p>58.2.3. Develop training and certification programs for SPs in distance simulation environments/cases</p>

	<p>58.1.4. Design distance simulation that meets the purpose to teach participants, recruit, train, and supervise the performance of SPs as well as to develop cases and assessment materials for use in both teaching and assessment</p> <p>58.1.5. Create a training plan for SPs that is responsive to the context and format of distance simulation activities</p> <p>58.1.6. Screen SPs to ensure that they are appropriate for the distance simulation role (e.g. no conflict of interest, no compromising of their psychological or physical safety)</p> <p>58.1.7. Manage SP's possibilities and limitations for a distance simulation</p>	<p>58.2.4. Collaborate with subject matter experts to design SP cases, training, and assessment materials for distance simulation</p> <p>58.2.5. Define the expected scope of SP involvement in work assignments for a distance simulation activity</p>
<p>59. Establish relationships with distance simulation technology stakeholders</p>	<p>59.1. Basic guidelines:</p> <p>59.1.1. Participate actively and collaborate in bidirectional initiatives across organizations, contributing to the improvement in distance simulation</p> <p>59.1.2. Collaborate to support distance simulation program sustainability and/or growth (e.g. strategic plan, simulator purchase, technology services, IT support)</p>	<p>59.2. Advanced guidelines:</p> <p>59.2.1. Collaborate with colleagues to develop proposals for externally funded initiatives in distance simulation aligned with institutional priorities</p> <p>59.2.2. Create partnership with other facilities and industries in relation to distance simulation education and technology</p>
<p>60. Acquire skills in multimedia in distance simulation</p>	<p>60.1. Basic guidelines:</p> <p>60.1.1. Gain and apply functional knowledge of terminology for the utilization of multimedia in distance simulation</p> <p>60.1.2. Evaluate, select, and effectively apply various tools and technology to the design, development, and dissemination of aesthetically pleasing, usable</p>	<p>60.2. Advanced guidelines:</p> <p>60.2.1. Devise, create, activate and integrate virtual and augmented-reality spaces, characters and objects for distance simulation-based learning experiences</p> <p>60.2.2. Promote complex and innovative distance simulation projects in new media and deliver them efficiently</p>

	<p>interfaces, graphic and media works in distance simulation</p> <p>60.1.3. Conceptualize and create media assets for eLearning like infographics, edited videos, animations, and various assessment types in the context of distance simulation</p> <p>60.1.4. Utilize common illustration design software to produce and edit graphics and digitized photographs for integration into distance simulation learning experiences</p>	<p>60.2.3. Integrate knowledge of design, language and photographic and audiovisual techniques to bring meaning to different types of content in distance simulation</p> <p>60.2.4. Evaluate and respond to complex problems associated with the design, development, and delivery of graphic and visual media in distance simulation through critical and creative thinking and collaboration with an interdisciplinary team of specialists and stakeholders</p> <p>60.2.5. Design, develop (create storyboards) and implement (build in authoring tools) eLearning of all types (micro-learning, modules, courses, programs) as they relate to distance simulation experiences</p> <p>60.2.6. Demonstrate a beginner to intermediate level of proficiency in HTML5, CSS, JavaScript and web design</p> <p>60.2.7. Demonstrate proficiency with learning management systems, authoring tools and gamification programs like Captivate, Articulate/Storyline360, Microsoft Office Suite®</p>
<p>61. Recommend modifications to distance simulation facility/program to improve outcomes</p>	<p>61.1. Basic guidelines:</p> <p>61.1.1. Apply functional knowledge and terminology for the utilization of network hardware that fixes, supports, and develops distance simulation products and programs</p>	<p>61.2. Advanced guidelines:</p> <p>61.2.1. Communicate effectively, document the processes, create written and digital training materials, provide support, and deliver training to improve distance simulation program outcomes</p> <p>61.2.2. Apply the design thinking process to address various physical, cognitive, cultural, and social aspects and to recommend creative solutions to mitigate challenges in the distance simulation environment</p> <p>61.2.3. Evaluate the effectiveness of complex and innovative distance simulation projects in new media</p>

<p>62. Manage distance simulation technical and material problems (e.g. connectivity, video capture, simulator failures, supplies, technical requirements)</p>	<p>62.1. Basic guidelines:</p> <p>62.1.1. Apply strong problem solving skills to assist learners and resolve issues in the distance simulation setting</p> <p>62.1.2. Acquire knowledge on distance simulation modality development and support</p> <p>62.1.3. Configure distance simulation settings according to software or platform requirements</p> <p>62.1.4. Determine the components needed for a user to physically interact or manipulate objects in the software or online environment</p> <p>62.1.5. Understand types of physical movements and tracking for physical equipment</p> <p>62.1.6. Apply principles and procedures to identify technical problems/errors and initiate corrective action of distance simulation equipment and the technologies used for support of distance simulation</p>	<p>62.2. Advanced guidelines:</p> <p>62.2.1. Update the functional knowledge and terminology for the utilization of equipment, software, and other products that support and develop distance simulation products and programs</p> <p>62.2.2. Manage technology systems' security (e.g. physical, network, data, storage) for supporting and developing and maintaining distance simulation</p> <p>62.2.3. Serve as primary point of contact for all installations, repairs, diagnosis and troubleshooting of software systems, computer equipment and simulators</p>
<p>63. Recognize and report gaps, needs, and/or opportunities for a distance simulation program (e.g. equipment, staffing, policies)</p>	<p>63.1. Basic guidelines:</p> <p>63.1.1. Apply knowledge required to function in different distance simulation platforms (e.g. equipment limitations, connectivity, air supply, web conferencing platforms, VR equipment) in order to mitigate the technical problem arising with intermingling the different technologies</p> <p>63.1.2. Identify and explore performance gaps in the distance simulation setting</p>	<p>63.2. Advanced guidelines:</p> <p>63.2.1. Apply principles and procedures to create policy and perform preventive/regular maintenance of distance simulation equipment and technologies to avoid the performance gap observed with existing technology</p> <p>63.2.2. Develop infrastructure for revision of the policies at the introduction of new technologies and modalities</p>
<p>64. Identify how specific factors impact operational</p>	<p>64.1. Basic guidelines:</p>	<p>64.2. Advanced guidelines:</p> <p>64.2.1. Consult with the experts in innovative distance teaching techniques, use of media, distance evaluation techniques, and</p>

<p>changes in distance simulation (e.g. purchases, staffing, logistics, policies)</p>	<p>64.1.1. Distinguish between different industries/products that support distance simulation and healthcare equipment, supplies, and environments</p> <p>64.1.2. Describe the functionalities and interdependence of equipment and technical platforms used in distance simulation such as: AV equipment, healthcare equipment, distance simulation specific equipment, web-based conferencing platforms, VR/AI/Mixed reality</p>	<p>distance test construction/evaluation to keep the distance simulation updates and concerns current.</p> <p>64.2.2. Assess emerging trends in distance simulation and the impact of ever-changing technologies and taxonomies</p>
<p>65. Apply strategies for managing risks in distance simulation program</p>	<p>65.1. Basic guidelines:</p> <p>65.1.1. Employ strategies to balance risks and outcomes of utilizing technologies for simulation at a distance</p>	<p>65.2. Advanced guidelines:</p>
<p>66. Utilize distance simulation resources effectively and efficiently in accordance with the organizational resources (e.g. money, people, space)</p>	<p>66.1. Basic guidelines:</p> <p>66.1.1. Develop a comprehensive business plan relevant to distance simulation programs</p> <p>66.1.2. Establish an inventory of physical and digital resources, and a plan addressing the educational objective(s) /purpose(s) with an accessible as well as intended list of supplies, equipment, and personnel required to support the distance simulation</p> <p>66.1.3. Maintain a competency-based training program for personnel to operate applicable equipment and programs relevant to distance simulation</p> <p>66.1.4. Communicate and practice safe/recommended use of distance simulation equipment and environment</p>	<p>66.2. Advanced guidelines:</p> <p>66.2.1. Research, evaluate, or create and curate new distance simulation technology resources for students and staff</p> <p>66.2.2. Develop distance simulation specific equipment and products</p> <p>66.2.3. Perform a periodic review process to ensure all distance simulation-based activities are feasible, appropriately designed based on programmatic resources, are in compliance with the current standards and updated with the current technologies being harnessed</p>

	66.1.5. Collaborate with the distance simulation team to manage roles, schedule requests, supply needs, and participant feedback to maximize the productivity	
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RESEARCHERS

Project Experts



Janice C. Palaganas, PhD, APRN, ANEF, FNAP, FAAN, FSSH
Principal Investigator
Professor of Interprofessional Studies
MGH Institute of Health Professions

Dr. Janice Palaganas is a Professor of Interprofessional Studies at Massachusetts General Hospital Institute of Health Professions and Lecturer at Harvard Medical School, Department of Anesthesia. She is co-founder of the Healthcare Distance Simulation Collaboration with Dr. Isabel Gross. As a behavioral scientist and former clinician and administrator, Dr. Palaganas' passion is in using healthcare simulation as a platform for interprofessional education (IPE). She is co-podcaster on "DJ Simulationistas...sup?" and "SimFails." Dr. Palaganas has been an invited keynote speaker and visiting professor in 30 countries. She works as a consultant for distance simulation and teaches the Distance Simulation Course at the Institute for Interprofessional Innovations.



Rami Ahmed, DO, MHPE, FACEP
Principal Investigator
Professor of Emergency Medicine
Indiana University School of Medicine

Dr. Ahmed has served as an attending physician in emergency medicine at three level 1 trauma centers over 12 years. Dr. Ahmed has published over 80 peer-reviewed manuscripts focused on the advancement of medical simulation. His research focus has centered around simulation fellowship curriculum development, distance simulation, and simulation-based curriculum development. He has 26 current simulation-based research studies in various stages of completion at the current time, working with scholars around the world. He is the current Division Chief and Simulation Fellowship Director at Indiana University. He started the first Medical Simulation Fellowship in the State of Ohio and the first Medical Simulation Fellowship in the State of Indiana, training over 20 fellows to date. Dr. Ahmed has won several local and national teaching awards.



Isabel Gross, MD, PhD, MPH

Senior Researcher

Assistant Professor of Pediatrics and Pediatric Emergency Medicine

Yale University School of Medicine

Dr. Isabel Theresia Gross is an Assistant Professor of Pediatrics and Pediatric Emergency Medicine Physician at Yale University School of Medicine. She is the Chair of the Scientific Review Committee of the International Network for Simulation-based Pediatric Innovation, Research, & Education (INSPIRE), is on the executive board of INSPIRE, and she serves on the Board of Directors for the International Pediatric Simulation Society (IPSS). Dr. Gross is an established simulation-based researcher and research mentor for her international colleagues. Her simulation-based research focus is on distance simulation, international outreach simulations, and the explorations of new methods and technologies in simulation-based education.



Anthony Sindelar, BS, MEd, EdS

Senior Instructional Designer and Teaching Consultant

MGH Institute of Health Professions

As Senior Instructional Designer and Teaching Consultant, Tony Sindelar provides instructional support to faculty. On the staff of the Office of the Provost, he collaborates with faculty and staff to design, develop, implement and improve instructional material and communication strategies. He is a lecturer in the Master of Science in Health Professions Education (MS-HPEd) and the Post-Professional Doctor of Occupational Therapy (PP-OTD) programs.

Tony has over fifteen years of teaching experience in higher education, both in the classroom and online. He had assisted hundreds of instructors with improving their face-to-face, hybrid, and fully-online courses. He has conducted and team-led workshops on educational technology for faculty, staff, and students.

PhD Students



Maria Bajwa, MBBS, MSMS, RHIT
Lead Student Researcher
Healthcare Simulation Educator
SUNY Broome Community College
New York

Maria Bajwa, a healthcare simulation educator & clinical instructor at SUNY Broome Community College NY, works in the nursing program overseeing simulation-based education (SBE). She has successfully guided the nursing program through the pandemic to pivot from in-person instruction to all online with a robust SBE program. She spearheaded the project of construction and successful implementation of a simulated EHR, SEHRA, an internal collaborative multi-professional initiative with other programs. She has presented at various conferences including OADN Convention 2019; SEENY 2020; IMSH 2021, and INACSL 2021. Trained as a physician in Pakistan, she obtained Master of Science in Medical Simulation from Drexel University, College of Medicine and is currently pursuing a PHD in Health Professions Education in interprofessional education and simulation from MGH IHP. She is following her dream of safer healthcare through one student at a time.



Hani Lababidi, MD, FCCP, FSSH
MGH IHP PhD Student
Consultant, Pulmonary & Critical Care Medicine
King Fahad Medical City, Riyadh, Saudi Arabia
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Dr. Lababidi is a Senior Consultant in Pulmonary and Critical Care Medicine at King Fahad Medical City (KFMC) in Riyadh, Saudi Arabia and Sanford Health in Fargo, ND, USA. He is American Board certified in Pulmonary and Critical Care Medicine. Dr. Lababidi has special expertise in simulation-based education. He established and directed The Center for Research, Education and Simulation Enhanced Training (CRESENT) at KFMC. He is the co-founder and vice-president of the Saudi Society for Simulation in Healthcare, and a member and reviewer of the Accreditation Committee at the Society for Simulation in Healthcare (SSH). Dr. Lababidi is an editorial board member and reviewer of many scientific journals. He is completing his Ph.D. in Health Professions Education at MGH Institute of Health Professions in Boston. His research interests include severe asthma, simulation skills acquisition and maintenance. Dr. Lababidi has written three book chapters on simulation, has more than 50 publications in peer review journals, and more than 500 presentations in national, regional and international conferences.



Melissa Morris, MSN, RN, CPN, CHSE

MGH IHP PhD Student

Director of Simulation and Innovative Technology

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Nova Southeastern University

Melissa Morris is a doctoral student in Health Professions Education at Massachusetts General Hospital Institute of Health Professions. Her research interests include simulation, and virtual reality for health profession education, and telepresence. Morris is a registered nurse and is certified in pediatric nursing and healthcare simulation education. She earned her M.S.N from Nova Southeastern University. Currently, Morris is the Director of Simulation and Innovative Technology at the Dr. Pallavi Patel College of Health Care Sciences and an adjunct faculty member teaching Telepresence in the Doctor of Health Care Sciences program, and Healthcare Theatre in the Halmos College of Arts and Sciences at Nova Southeastern University.



Alex Morton, MSHS, RN

MGH IHP PhD Student

Educational Specialist

Oxford Medication Simulation

Alex Morton is an Educational Specialist with Oxford Medication Simulation. She received her Bachelor of Science in Nursing from the University of South Alabama in 2014, her Master of Science in Healthcare Simulation from the University of Alabama at Birmingham in 2020 and is currently enrolled in the PhD in Health Professions Education at MGH Institute of Health Professions. Her PhD research is focused on factors of engagement in healthcare simulation online distanced debriefings. Alex is also a TeamSTEPPS® Master Trainer and has been a Registered Nurse since 2014. Her clinical experience includes pediatric emergency and intensive care nursing, and neonatal intensive care nursing. In healthcare simulation, her experience includes operational, administrative, and programmatic simulation support for diverse learner groups in both university and health system settings.



Cynthia Mosher, MD, MSHS
MGH IHP PhD Student
Associate Director of Clinical Skills
Alfaisal University College of Medicine

Cynthia Mosher is a primary care physician and the Associate Director of Clinical Skills at Alfaisal University College of Medicine in Riyadh, Saudi Arabia. She holds a Master of Science in Healthcare Simulation from the University of Alabama at Birmingham and is currently a PhD student in Health Professions Education - Simulation at MGH Institute of Health Professions. Her PhD research is focused on the unique topic of factors of engagement in healthcare simulation online distance debriefing. As a faculty member of the Department of Clinical Skills she supervises a team of teaching assistants and is responsible for design, facilitation and supervision of clinical skills simulation courses for preclinical and clinical clerkship students in medicine and pharmacy. She is also actively involved in the department's standardized patient program and is spearheading teaching assistant and faculty development in simulation.



Dawn Wawersik, MSN, RN
MGH IHP PhD Student
Simulation Faculty and Technology Instructor
Henry Ford College

Dawn Wawersik is the Simulation Faculty and Technology Instructor at Henry Ford College. She received her Bachelor of Science in Nursing at Eastern Michigan University, her Master of Science in Nursing Education at South University, and is currently enrolled in the PhD in Health Professions Education at MGH Institute of Health Professions. Her PhD research is focused on improving healthcare error reporting through the development of educational interventions to include simulation in pre- and post-licensure healthcare professionals. Dawn is a Registered Nurse and is a Certified Healthcare Simulation Educator (CHSE) and Certified Academic Clinical Nurse Educator (CNE-cl). Her healthcare simulation experience is operational, administrative, and programmatic simulation support to include the development of simulation programs and faculty development, for diverse learner groups in both academic and hospital settings. Her clinical experience includes Medical Surgical nursing, step down and critical care, hospital nurse educator, ACLS faculty trainer and instructor, BLS faculty trainer and instructor, and clinical nurse educator.



Anne Herx-Weaver, RN, MSN, CHSE, CCRN-K

Director of Simulation Laboratory

Fitchburg State University School of Nursing

Education Specialist III

UMass Chan Medical School

Interprofessional Center for Experiential Learning and Simulation (iCELS)

Anne Herx-Weaver is a doctoral student in Health Professions Education at Massachusetts General Hospital Institute of Health Professions. Her research interests include combining simulation and interprofessional education and ethics. Herx-Weaver is a registered nurse, certified as a critical care registered nurse in pediatrics as well as a healthcare simulation educator. She earned her BSN from Creighton University and her MSN from Worcester State University. Currently Herx-Weaver is the Director of the Nursing Simulation Laboratory at Fitchburg State University and a Simulation Educator at UMass Chan Medical School and a bedside nurse in the Pediatric ICU at UMass Memorial Medical Center.

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Addendum

Updated: January 10, 2022

Phase 2 Nominal Group Technique Studies

Status: Being prepared for journal submission

Phase 2 was completed, data analyzed, and will be submitted for journal publication.

Phase 3 Delphi Study

Status: First round conducted and analyzed. Second round to be held in-person at IMSH 2022 on January 15, 2022.

Phase 3 round one was completed. Round two is scheduled to be conducted at IMSH 2022. Phase 3 will also be analyzed and submitted for journal publication.