

## Supplementary Digital Content

Appendix 1: The finalized Healthcare Distance Simulation Educator Competencies version 3.0 for both basic and advanced level distance simulation educators or simulation faculty

Competency	Basic (x.1.)	Advanced (x.2.)
<b>Domain 1: Professional Values and Capabilities</b>		
1. Demonstrate characteristics of a champion in Distance Simulation	1.1.1. Review the latest distance simulation science by subscriptions to peer-reviewed journals, attendance at conferences, and participation in other scholarly activities	1.2.1. Provide institutional leadership for the entire life cycle (planning, designing, conducting, and evaluating) of a distance simulation program
	1.1.2. Provide site leadership in distance simulation-based learning	1.2.2. Develop faculty in the design and implementation of distance simulation
	1.1.3. Demonstrate basic interpersonal skills in online and virtual platforms	1.2.3. Function as a change agent in distance simulation by utilizing theoretical framework or model
	1.1.4. Determine faculty readiness to participate in distance simulation	1.2.4. Develop and implement a strategic plan to align resources of distance simulation to achieve its goals
	1.1.5. Assist in developing strategic planning in implementation of distance simulation	1.2.5. Manage the financial resources to support stability, sustainability, and growth of the distance simulation program's goals and outcomes
	1.1.6. Implement operational planning in the execution of distance simulation	1.2.6. Articulate the value proposition or return on investment of the distance simulation program to the learners, faculty and organizational leadership
	1.1.7. Assess the benefits and barriers of in-person and distance simulation to identify the most appropriate modality for transfer of learning	1.2.7. Disseminate distance simulation project findings through scholarly journal articles, briefs, and presentations to a variety of audiences
		1.2.8. Mentor other distance simulation educators and programs
		1.2.9. Develop or adapt a database solution for collecting, accessing, and reporting performance data for distance simulation-based education programs

		1.2.10. Establish and maintain local, regional, national and international connections to support the strategic goals of distance simulation technology, curriculum, and instruction programs
2. Recognize opportunities to advocate for distance simulation	2.1.1. Disseminate distance simulation knowledge (e.g., social media, conversations with colleagues, and presentations)	2.2.1. Recognize and participate in local, national, and international opportunities to advocate for distance simulation
	2.1.2. Inspire, encourage, and engage internal stakeholders and potential supporting service departments (curriculum design, Information technology, online learning, educational technology, etc.) for implementation and growth of distance simulation programs	2.2.2. Collaborate with other distance simulation educators to help policymakers recognize the significance of this modality
	2.1.3. Incorporate new distance simulation technologies that enhance or improve learning objectives and outcomes	2.2.3. Act as a local distance simulation advocate by assisting in developing organizational initiatives for distance simulation
	2.1.4. Develop a plan to elicit buy-in and support from external stakeholders (e.g., community partners etc.)	
	2.1.5. Advocate for the integration of distance simulation methodology into the curriculum where appropriate	
	2.1.6. Guide the faculty towards best practices and standardization in distance simulation	
3. Demonstrate and cultivate respect in relationships with participants, faculty, and the community of distance simulation	3.1.1. Demonstrate and foster respect for individuals' personal environments that appear in the distance simulation	3.2.1. Disseminate knowledge and research around considerations and techniques in maintaining respectful relationships in the distance simulation environment
	3.1.2. Recognize learners' concern for their psychological safety in the distance simulation environment	3.2.2. Innovate and advocate for respectful approaches towards learners, faculty, and staff in distance simulation environments
	3.1.3. Support the public relations activities of distance simulation program (e.g., virtual tours, community outreach)	3.2.3. Promote a culture of mutual respect in distance simulation by sharing experiences and best practices of respectful behavior in

		distance simulation with similar programs
	3.1.4. Provide resources to support staff and students in the adoption and maintenance of knowledge, skills, and abilities in distance simulation according to the learner level and intended objectives	
4. Demonstrate characteristics of teamwork in distance simulation	4.1.1. Demonstrate team building approach in distance simulation	4.2.1. Demonstrate a team-building approach to distance simulation through the engagement of health professionals in interprofessional education settings
	4.1.2. Integrate basic seminal concepts in online education	
	4.1.3. Demonstrate outreach to online or instructional developers and technologists	
5. Recognize ethical principles and personal responsibilities as they apply to distance simulation	5.1.1. Apply the Healthcare Simulationist Code of Ethics in distance simulation	5.2.1. Advocate for ethical principles identified/applicable in distance simulation
	5.1.2. Understand the value of ethical, intercultural, and agency/client/stakeholder relationships as it relates to distance simulation	5.2.2. Explore ethical challenges that apply distinctly to distance simulation in healthcare
	5.1.3. Establish appropriate and ethical assessment and information collection methods	5.2.3. Adapt and implement any changes of the general ethical codes of conduct to the distance simulation environment
6. Distinguish among the various roles of personnel involved in distance simulation	6.1.1. Recognize and advocate for various and evolving professional roles in distance simulation	6.2.1. Collaborate with other distance simulation professionals to create a network of resources to support various roles in distance simulation education
	6.1.2. Provide personnel with appropriate expertise to support and sustain their role in distance simulation	6.2.2. Engage in the ongoing development and evaluation in the personnel needs of the field of distance simulation
7. Demonstrate compliance with regulatory requirements related to distance simulation	7.1.1. Obtain a thorough knowledge of relevant and most updated policies and regulatory requirements for distance education including cybersecurity	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
	7.1.2. Assure compliance with the current government and regulatory requirements for delivery of distance simulation, including, but not limited to, accessibility and disability considerations (e.g., ADA, HIPAA, FERPA, HITECH, GDPR, etc.)	7.2.2. Create or adapt policies and procedures to support and sustain distance simulation including audiovisual capture, retention, use, privacy, and confidentiality
	7.1.3. Demonstrate adherence to copyright, usability, and accessibility requirements and standards related to distance simulation	7.2.3. Support institutions that are early in the process of incorporating distance simulation into their practice
	7.1.4. Adhere to all policies and practices of distance simulation to maintain students' rights as outlined by the institute including protection from vendors who can have access to students' information	
	7.1.5. Seek to protect patient and students' privacy and confidentiality during and after distance simulation including data storage and accessibility	
8. Evaluate the credibility of resources in distance simulation education (e.g., websites, listservs, literature)	8.1.1. Review content provided by external training vendors to ensure alignment with learning objectives	8.2.1. Collaborate with medical illustrators and designers to develop effective distance simulation resources
	8.1.2. Review best practices to develop and maintain distance simulation resources	8.2.2. Demonstrate feedback loops for software designers and staff
	8.1.3. Assign a point person on the distance simulation team to manage the technologies internally (recorded data, reference materials, equipment specifications, maintenance agreements, warranties, or any other aspect of equipment &/or technology)	8.2.3. Recommend or assess credible distance simulation resources (e.g., social media, blogs, communities of practice, committees, research, publications, products) to meet the learning objectives
	8.1.4. Serve or appoint a liaison between distance simulation vendors and organizations with a deep knowledge of distance simulation methodology	8.2.4. Disseminate credible distance simulation resources to meet the learning objectives

	8.1.5. Manage external vendor relationships to ensure graphic, animation, and remote simulation products are accurate and up to acceptable standards	
9. Utilize credible resources to inform distance simulation practices	9.1.1. Apply current practices of distance simulation education	None
10. Explore the elements of research in distance simulation	10.1.1. Understand basic research design to develop and implement best practices regarding assessment and evaluation in distance simulation	10.2.1. Engage in distance simulation research; improvement and implementation research, health-related program policy development and evaluation and educational scholarship
	10.1.2. Explore the comparability of distance simulation with other types of simulation	10.2.2. Conduct sound, high-quality research to inform the construction, interpretation, and validation of distance simulation practices
	10.1.3. Develop, manage, and monitor research, evaluation plans, and timelines related to distance simulation	10.2.3. Conduct research on activities for distance simulation and assist with dissemination of research findings
	10.1.4. Assist in writing technical reports, manuscripts, and other dissemination products, e.g., research briefs related to distance simulation	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
	10.1.5. Understand basic methodological concepts associated with research and their potential applications in distance simulation	10.2.5. Collaborate with other researchers in distance simulation through all phases of study design
	10.1.6. Conduct and develop literature reviews related to educational research, evaluation, and assessment to inform distance simulation practices	10.2.6. Create and/or help in creating distance simulation platforms
		10.2.7. Consult in the development of new innovative platforms for distance simulation
		10.2.8. Identify important areas of future research in distance simulation

11. Define elements of quality management related to distance simulation	11.1.1. Conduct ongoing systematic and programmatic improvement processes for the distance simulation programs	11.2.1. Demonstrate knowledge of principles and methods for data reporting, analyses, and other program metric measurements for distance simulation
	11.1.2. Develop or adapt Quality Assurance (QA) testing process of distance simulation prior to use	11.2.2. Develop and implement novel methods to continuously plan, conduct, assess and improve distance simulation
	11.1.3. Evaluate and report the effectiveness of the distance simulation educational project as continuous quality improvement	11.2.3. Develop and implement practical strategies to plan, conduct, and evaluate distance educational experiences
		11.2.4. Identify opportunities for QA data research regarding distance simulation in clinical education and curriculum
12. Engage in professional development in distance simulation	12.1.1. Recognize opportunities for professional development in distance simulation (e.g., conferences, webinars)	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
	12.1.2. Provide coaching and feedback to team members, facilitators, instructors, standardized patients, simulated participants, surrogates, and learners as appropriate regarding distance simulation	12.2.2. Engage in regional, national, or international groups focused on improving distance simulation
	12.1.3. Create and implement educational programs for new simulation faculty including prebriefing, simulation and debriefing focused on distance simulation	
13. Establish diversity and inclusivity in distance simulation	13.1.1. Recognize the role of culture during all phases of distance simulation (prebriefing, scenario execution, tele-debriefing, and distance feedback)	13.2.1. Recruit diverse faculty in distance simulation
	13.1.2. Work respectfully with all learners regardless of background in distance simulation	13.2.2. Create programs to enhance digital literacy for diverse groups of learners and educators in distance simulation

	13.1.3. Build a culture of empathy and compassion towards and amongst diverse learners, faculty and staff in distance simulation	13.2.3. Create distance simulations to reflect a diverse society that will best prepare learners to deal with a diverse population
	13.1.4. Establish and support a climate that fosters belonging in distance simulation eliminating systemic racism and bias	13.2.4. Offer distance simulation in native language when feasible
	13.1.5. Create learning objectives which are locally applicable to the learners practice context	13.2.5. Apply socio-culturally sensitive practices during the design of media elements
	13.1.6. Foster equitable participation in distance simulation	13.2.6. Offer resources and training to the faculty and team members in social justice, equality, diversity and inclusion
	13.1.7. Set explicit student expectations in distance simulation by using inclusive language, setting expectations for valuing diverse viewpoints	13.2.7. Research limitations and preferences of distance simulation from diversity, equity and inclusion perspective
	13.1.8. Design course elements to be accessible to and accommodate all learner populations	
	13.1.9. Practice self-awareness and commitment to inclusion by reflecting upon it with the learners and the team during distance simulation sessions	
	13.1.10. Apply distance simulation solutions to overcome geographical barriers and to increase accessibility	
<b>Domain 2: Healthcare and Simulation Knowledge and Principles</b>		
14. Leverage knowledge of the factors affecting participant engagement within a distance simulation activity (e.g., learner level, realism, suspension of disbelief)	14.1.1. Apply the principles of realism and fidelity to specific learner level, environment and technology used in the distance simulation to enhance learner experience	14.2.1 Develop learning solutions in distance simulation that are engaging, creative, and maintain instructional integrity
	14.1.2. Use various types of fidelity to create and balance the required perception of realism pertinent to the environment or technology being used in distance simulation	14.2.2 Develop or adapt instructional approaches to enhance learner engagement in distance simulation activities

	14.1.3. Utilize strategies that engage distance learners and mitigate frustration during distance simulation	14.2.3 Research techniques in distance simulation that promote engagement
15. Examine opportunities to integrate distance simulation into education, research, and practice	15.1.1. Collaborate with organizational educators and leadership to integrate distance simulation into the curriculum	15.2.1. Develop technological solutions and opportunities to create effective instructional pathways with other institutions
	15.1.2. Identify appropriate resources, internally and externally, to provide needed distance simulation technology and training	15.2.2. Create a learner-centric experience by leveraging innovative distance simulation solutions to discover and fill knowledge and performance gaps for learners
	15.1.3. Assist in implementing a strategic plan for distance simulation	15.2.3. Provide faculty orientation and continuing education opportunities around distance simulation based on evidence-based practices
	15.1.4. Review emerging distance simulation educational methods including underlying educational principles and technologies	15.2.4. Communicate with stakeholders periodically about distance simulation programming and its impact on improving health care education and ultimately health care delivery
	15.1.5. Facilitate the adult learning using distance simulation modalities to create a safe non-threatening climate for learning	15.2.5. Research appropriate principal theories, conceptual frameworks and models to disseminate scholarly work in distance simulation
	15.1.6. Utilize existing frameworks and theories from health professions education literature and clinical practice to guide distance simulations	
	15.1.7. Identify the educational concepts and theories related to distance learning (e.g., online simulation, virtual simulation, synchronous and asynchronous simulation, telesimulation, basic knowledge of eLearning and adult learning, etc.)	
16. Differentiate the phases of a distance simulation activity (briefing/ prebriefing, simulation activity, debriefing)	16.1.1. Articulate the phases of distance simulation, debriefing, teaching strategies, curriculum theory and design, and evaluation in the educator role	16.2.1. Compare and contrast the phases of distance simulation with hybrid and in-person simulation



17. Align feedback methods with distance learning type	17.1.1. Identify feedback methods appropriate for various distance learning modalities	17.2.1. Compare and contrast feedback methods among distance, hybrid, and in-person simulation
18. Differentiate elements of debriefing in distance simulation (Reflection, Facilitation, Phases)	18.1.1. Identify debriefing techniques, strategies and technologies which can be adapted and employed in the distance simulation and virtual learning environments	18.2.1. Develop concepts of debriefing online education and virtual strategies
	18.1.2. Employ concepts of online conversation strategies	18.2.2. Develop or adapt innovative approaches to distance debriefing that leverages best practices
	18.1.3. Utilize a conceptual framework for distance debriefing purposefully structured for the online environment	
	18.1.4. Demonstrate the appropriate use of different strategies for the debriefing process in the distance simulation setting	
19. Differentiate among distance simulation modalities	19.1.1. Gain knowledge of emerging technologies in distance simulation	19.2.1. Compare and contrast distance, hybrid, and in-person modalities for the same learning objectives
	19.1.2. Select modalities for distance simulation in alignment with the learning objectives	19.2.2. Explore new distance simulation modalities to integrate them into distance simulation education
		19.2.3. Establish an action plan on how to investigate and integrate new simulation modalities into the curriculum
		19.2.4. Recognize and address the barriers in utilizing various distance simulation modalities such as physical, social, fiscal or regulatory implications
20. Distinguish among applications of distance simulation for individual(s), team(s), and system(s)	20.1.1. Assess applicability of distance simulation technologies for individual(s), team(s), and system(s) for teaching, assessment and feedback	20.2.1. Train faculty and simulation team to select distance simulation technologies for individuals, teams and systems
21. Differentiate elements of realism for distance simulation	21.1.1. Explain the constructs of realism and fidelity in distance simulation	21.2.1. Collaborate with distance simulation designers in constructing features for more realistic healthcare experiences

22. Recognize stressors contributing to individual and team performance (e.g., cognitive, affective/emotional, psychomotor) when using distance simulation	22.1.1. Acknowledge increase in cognitive load and its impact during distance simulation sessions	22.2.1. Design/redesign scenarios to minimize stressors, disengagements, and negative emotional impact during distance simulation sessions
	22.1.2. Utilize mitigation strategies to lessen stressors in distance simulation	22.2.2. Disseminate strategies to participants of distance simulation to manage appropriate cognitive load in all stages / phases of activity including distance prebriefing and debriefing
23. Describe the concept of human factors as it applies to distance simulation	23.1.1. Identify human factors which may impact the effectiveness, satisfaction and usability of distance simulation activities	23.2.1. Translate and adapt existing knowledge of human factors from in-person simulation activities to distance simulation
		23.2.2. Develop conceptual frameworks for how to optimize the teacher-learner-technology experience
24. Identify roles for distance simulation to improve patient safety	24.1.1. Identify opportunities for distance simulation focused on patient safety and quality improvement	24.2.1. 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
	24.1.2. Implement established patient safety simulations in the distance simulation environment	24.2.2. Engage in regional, national, or international groups focused on improving distance simulation
		24.2.3. Identify distance simulation assessment methods and metrics to establish performance improvement related to identified patient safety goals
		24.2.4. Evaluate the effectiveness of the simulations on improvement of health care delivery systems
<b>Domain 3: Educational Principles Applied to Distance Simulation</b>		
25. Distinguish principles of utilizing distance simulation as an educational tool (e.g., learning and digital	25.1.1. Implement a variety of learning environments and pathways including blended, online, in-person and virtual	25.2.1. Develop and promote expertise in theories, principles, and processes of distance simulation

taxonomies, assessment, learning theories)		
	25.1.2. Apply current educational theories/ frameworks/ models and principles of the involved technologies and modalities in distance simulation	25.2.2. Develop and implement methods of critique and critical-reflective applications related to distance simulation
	25.1.3. Utilize cognitive aspect of distance simulation i.e., creating shared meaning through reflection and discourse	25.2.3. Teach principles of utilizing distance simulation as an educational tool
	25.1.4. Apply social construct of distance simulation including personal, affective relationships, open and trusting communication	25.2.4. Demonstrate knowledge of updated resources, work, collaborations, and techniques of distance simulation
	25.1.5. Implement teaching principles of distance simulation as it relates to engagement, for example the influence of the educator's online presence	
26. Integrate instructional design concepts into distance simulation activities	26.1.1. Demonstrate foundational knowledge of learning science and instructional design to assist faculty in the design and development of teaching and learning efforts for distance simulation programs	26.2.1. Teach or present instructional design concepts as it relates to distance simulation
	26.1.2. Apply relevant theories/ framework/ models/ principles for eLearning and instructional design as well as Universal Design to ensure a robust design approach for distance simulation to meet the objectives	26.2.2. Develop new principles of instructional design specific for distance simulation
	26.1.3. Plan and design the structural format of distance simulation activities based on the purpose, theory, and modality to meet the identified outcomes and objectives	26.2.3. Partner with internal and external training experts to utilize learning management processes and systems to develop and manage distance simulation sessions and courses according to organizational needs (e.g., construct course shells, create enrollment rules and reports, build surveys, and configure automated notifications)
	26.1.4. Use appropriate instructional methods in distance simulation including individual and	26.2.4. Act as an internal consultant by utilizing current and emerging online learning

	group learning, distance learning, online education (synchronous and asynchronous), e-learning, tutorials and seminars, written program units, supervision, mentoring, blended learning and independent learning	methodologies (e.g., complete online, blended, hybrid, Hyflex etc.) to implement distance simulation
	26.1.5. Utilize instructional methods in collaborative educational models, small and large group teaching, team-based, interactive and experiential case-based learning in distance simulation setting	
27. Incorporate needs assessment into distance simulation activities to meet the learners' and organizational needs (consider psychomotor, technical, behavioral and cognitive aspects)	27.1.1. Perform needs assessments to provide foundational evidence that will direct the distance simulation program trajectory	27.2.1. Perform targeted needs assessments with key stakeholders to provide data to support creation of distance simulation educational experiences (including but not limited to interprofessional education or team training as needed)
		27.2.2. Collaborate with subject matter experts to integrate curriculum and learner needs assessment data (e.g., psychomotor behavior, technical, behavioral, cognitive) into distance simulation activities
28. Define goals of distance simulation activities	28.1.1. Use the results of the needs assessment to guide the development of an overarching goal for distance simulation	28.2.1. Determine goals for distance simulation activities which could be achieved in a particular digital environment or as it applies to distance simulation
	28.1.2. Determine goals according to the learning level of the learner (e.g., zone of proximal development) for distance simulation activities which are achievable in a particular digital environment and timeframe as it applies to distance simulation	28.2.2. Confirm goals are within the learners' zone of proximal development
29. Create measurable learning objectives of distance simulation activities	29.1.1. Construct specific, measurable, achievable, realistic, and time-phased (SMART) objectives based on expected outcomes suitable for distance simulation	29.2.1. Determine whether objectives are sufficiently specific, measurable, achievable, realistic, and time-bound

30. Identify and integrate assessment methods pertinent to distance simulation	30.1.1. Distinguish between formative, summative and high-stakes assessments, depending on the learning outcomes using distance simulation	30.2.1. Explore the intricacies and implications of formative, summative and high-stakes assessments in the distance simulation environment
	30.1.2. Determine the method of participant evaluation prior to the simulation-based experience considering the limitations of the distance simulation environment	30.2.2. Create or adopt a pre-existing evaluation tool (with evidence of psychometric validity and reliability) appropriate for measuring the planned outcomes of a distance simulation activity
	30.1.3. Establish adequate learner familiarity to the modality and expectations prior to assessment, utilizing multiple instructional methods	30.2.3. Collect and analyze the evaluation data for trends and areas for quality improvement.
		30.2.4. Evaluate the facilitators of distance simulation using evidence-based practices
31. Prepare orientation and prebriefing/briefing for participants and simulation team for distance simulation	31.1.1. Provide orientation for learners to simulation platforms, equipment, and virtual spaces for the distance simulation-based experience	31.2.1. Develop effective strategies to train facilitators for prebriefing/briefing practices in distance simulation addressing concerns ethics, all-inclusiveness, mutual respect, and psychological safety.
	31.1.2. Provide orientation for learners to simulation principles including ethics, all-inclusiveness, mutual respect, confidentiality, and professionalism among all participants in the distance simulation experience	31.2.2. Explore innovative materials or resources to orient participants in distance simulation for new technologies and teaching strategies.
	31.1.3. Provide preparatory activities and materials to promote participants' ability to meet identified objectives and achieve expected outcomes of the distance simulation-based experience	
	31.1.4. Include specific instructions to successfully navigate the technical platform or environment to perform that specific distance simulation experience	
	31.1.5. Begin distance simulation-based experiences with a prebriefing including an	

	introduction to the modality to prepare participants for the distance simulation-based experience	
32. Plan logistics for distance simulation activities (e.g., people, supplies, timing)	32.1.1. Attend to distance simulation logistical details	32.2.1. Advocate for logistics that promote inclusivity in distance simulation
	32.1.2. Plan end-to-end logistics of distance simulation projects for students, faculty and staff including the design and development of remote simulation programs, supply line, and timing	32.2.2. Facilitate logistics for complex or multi-modal forms of distance simulation
		32.2.3. Develop logistics checklist or template to ensure system readiness for distance simulation activities
		32.2.4 Construct and deliver training sessions on the logistics for personnel involved in distance simulation prior to implementation.
33. Balance risks and outcomes in distance simulation (e.g., real vs simulated equipment / supplies / hardware / software)	33.1.1. Employ strategies to balance risks and planned outcomes in distance simulation (e.g., real vs simulated equipment / supplies / hardware / software	33.2.1. Advocate for distance simulation strategies that are inclusive and equitable for stakeholders, community, faculty and students
		33.2.2. Collaborate with stakeholders to address the risks and outcomes of using distance simulation
34. Design the case/scenario applicable to distance simulation	34.1.1. Design or curate a scenario or case for distance simulation-based experience which is deliverable within the limitations of that particular technology or learning environment (e.g., XR) and given timeframe and intended outcomes or objectives	34.2.1. Maintain and ensure cases in repository are current to standards and practices and supported by available technology
35. Select distance simulation modality/modalities appropriate for the learning objectives and the learners	35.1.1. Select the appropriate modality to be used in distance simulation based on the learning objectives, characteristics of learners, and context of the case	35.2.1. Secure and ensure the maintenance of adequate infrastructure that supports available modalities
	35.1.2. Acquire or maintain proficiency in facilitation of simulation-based experience	35.2.2. Research and recommend updated and improved distance

	including extended realities, screen simulations and virtual patients in various media	simulation technological modalities
	35.1.3. Investigate the technology to be used in distance simulation experience according to the type and level of learners and their familiarity with that particular technology in order to meet the learning objectives optimally	35.2.3. Develop staff and faculty in the appropriate use of available distance simulation modalities
		35.2.4. Evaluate the effectiveness of distance simulation modalities
36. Select the virtual or digital locations to conduct the distance simulation activity	36.1.1. Select the virtual or digital locations to conduct the distance simulation activity, e.g., escape room, breakout sessions, virtual spaces or environments	36.2.1. Research and recommend updated and improved distance simulation digital locations
	36.1.2. Obtain and maintain updated knowledge regarding emerging digital locations for distance simulation	36.2.2. Develop staff, faculty and the learners in the appropriate use of available distance simulation digital locations
		36.2.3. Evaluate the effectiveness of distance simulation digital location
37. Identify required resources in distance simulation (e.g., personnel, equipment, supplies, etc.) according to the overarching goals of the intended simulation	37.1.1. Identify digital and online technologies to support distance simulation logistics, fidelity and data capture	37.2.1. Plan with design researchers in conducting user discovery, concept validation, and usability testing for distance simulation
	37.1.2. Arrange the needed technologies and personnel for distance simulation sessions in a timely manner	37.2.2. Collaborate with support user interface (UI) designers to establish reusable functionality as a part of the design system for distance simulation
	37.1.3. Develop competency in distance simulation technologies being used for distance simulation sessions	37.2.3. Develop faculty competency and proficiency training in distance simulation technology
38. Collaborate within and across the teams to coordinate distance simulation in the light of educational theories, framework and principles	38.1.1. Collaborate with the simulation team in the design, development and maintenance of online and hybrid teaching and learning efforts following best practices.	38.2.1. Collaborate with stakeholders and subject matter experts to design, develop and deploy interactive distance simulation learning solutions

	38.1.2. Work collaboratively with simulation operations specialists, faculty, staff and others to ensure proper planning and design of distance simulation activities	38.2.2. Exchange experiences with other programs sharing solutions for common challenges in distance simulation
	38.1.3. Participate in faculty and department meetings to assist with development and implementation of distance simulation experiences	38.2.3. Establish research collaborations in distance simulation scholarship
	38.1.4. Collaborate with other health professions to create distance simulation sessions grounded in theory, models, frameworks and best practices	
39. Assemble distance simulation specific resources (e.g., scenario, SP case, teaching script, programming list, any modality-specific requirements)	39.1.1. 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	39.2.1. Develop all supporting multimedia assets needed for the distance simulation-based learning.
	39.1.2. Utilize the knowledge of adult learning and authoring tools such as Articulate 360/Storyline®, Adobe Creative Cloud® (Photoshop, InDesign), Camtasia®, and Microsoft Office®	39.2.2. Uses a standardized process to the development and early stages of the production of distance simulation specific resources.
		39.2.3. Develop the team for creating and evaluating the assets in alternative formats for delivering distance simulation
40. Conduct pilot activity for distance simulations (i.e., dress rehearsal, field test, run-through)	40.1.1. Conduct pilot activity for distance simulations (i.e., technical rehearsal, virtual test, run-through)	40.2.1. Perform in-depth analysis of pilot study data (e.g., audio-visual recordings, surveys, etc.) to weigh the benefits of using distance modalities as compared to other modalities.
	40.1.2. Troubleshoot a new technology or modality after introducing it into distance simulation	40.2.2. Modify distance simulation activities based on pilot activities
	40.1.3. Analyzes the pilot activity or functionality of new technologies/modalities and suggests ways to improve or solve identified issues	40.2.3. Document processes and evaluation of pilot activities for distance simulation



	40.1.4. Improve future iterations of the simulation on the bases of pilot study	40.2.4. Manage the record of all pilot studies along with their iterations
41. Plan for evaluation of the distance simulation activity	41.1.1. Design an evaluation that meets the stakeholder needs established in the comprehensive assessment of distance simulation	41.2.1. Design, plan, and implement research on distance simulation evaluation projects with diverse purposes, audiences, and modalities
	41.1.2. 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	41.2.2. Design and implement best practices of various evaluation methodologies and survey techniques in formal and informal distance simulation education settings
	41.1.3. Understand the principles behind choosing appropriate assessment methods (how to administer, score, and interpret assessments) for the evaluation of distance simulation	41.2.3. Disseminate knowledge about evaluation in distance simulation (e.g., formal or informal publications, presentations)
	41.1.4. Develop evaluation plans for completing formative and summative program evaluations of distance simulation	41.2.4. Obtain consensus within the program on methods to measure transfer of learning in distance simulation
		41.2.5 Plan and analyze the evaluation data collected for impact, trends, and effectiveness for all aspects of the simulation activity: learner(s), facilitator(s), the distance simulation-based experience, and the support team
42. Create and maintain a psychologically safe distance simulation environment	42.1.1. Describe practices associated with establishing psychological safety in distance simulation	42.2.1. Develop a culture of psychological safety to promote respect, diversity, inclusion and professionalism
	42.1.2. Create and maintain a psychologically safe distance environment for learning	42.2.2. Develop tools to evaluate participant psychological safety and effectiveness of prebriefing in distance simulation
	42.1.3. Construct and maintain learner-centered environment during distance simulation activity	42.2.3 Modify the distance simulation program through planned evaluations to promote psychological safety, respect, DEI, and confidentiality
	42.1.4. Protect the privacy of the personal information of all	

	stakeholders, including that which may be revealed within a distance simulation activity	
	42.1.5. Maintain 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)	
43. Perform distance simulation debriefing	43.1.1. Develop as adaptive experts in distance simulation debriefing	43.2.1. Critique and provide feedback to peers' approaches to debriefing, including assessment and feedback to improve their performance in distance simulation settings
	43.1.2. Conduct online debriefing that is conducive to distance simulation and supports online confidentiality, trust, open communication, self-analysis, feedback, and reflection	43.2.2. Compare and contrast immersive, procedural, and clinical event distance simulation debriefing
	43.1.3. Devote enough concentrated attention during the distance simulation to effectively debrief	43.2.3. Develop advanced approaches that improve the effectiveness of debriefing in distance simulation
	43.1.4. Develop appropriate questioning techniques and styles for distance debriefings	43.2.4. Modify advanced debriefing techniques to distance simulation context
	43.1.5. Provide constructive distance simulation debriefing including aspects of human factors and crisis resource management (CRM)	43.2.5. Provide support to debriefers and staff to further develop distance debriefing skills
	43.1.6. Debrief according to the predefined objectives and outcomes of the distance simulation-based experience	43.2.6. Participate, collaborate, and present in professional development activities (courses, conferences, scholarly work, etc.) for continued skill development as a distance simulation debriefer
	43.1.7. 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	

	43.1.8. Incorporate different distance debriefing styles into individual practice	
	43.1.9. Facilitate web technology-based discussion through verbal and non-verbal techniques	
	43.1.10. Investigate the use of video, replay, and review devices when available for the distance simulation debrief	
44. Manage evolving simulation needs during the simulation session	44.1.1. 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	44.2.1. Develop and implement an action plan that addresses issues identified during previous distance simulation experiences to support achieving optimal outcomes
45. Manage physical and psychological risks during distance simulation	45.1.1. Manage difficult and/or emotional distance learning conversations	45.2.1. Coach, develop and support facilitators, faculty and staff by providing "peer feedback" and exploring actions/frames/pathways for debriefer and facilitator development and improvement for quality in simulation programming
	45.1.2. Recognize and manage the participant's inherent challenges during distance simulation	
	45.1.3. Be familiar with organizational resources for counseling and support in order to guide the learners in need	
46. Participate in distance simulation team debriefing and feedback	46.1.1. Evaluate distance simulation experience through team debriefing at the conclusion of the activity	46.2.1. Evaluate distance simulation program through team debriefing regularly
	46.1.2. Improve program design of distance simulation using self-reflection, feedback, and team discussions	46.2.2. Provide timely and actionable feedback to team members involved in distance simulation program
		46.2.3. Plan and implement future distance simulation program modifications based on team debriefings
		46.2.4. Develop or adopt a preexisting feedback tool to be

		used in the distance simulation environment
47. Analyze distance simulation activity evaluations	47.1.1. Understand and effectively use a variety of data collection and analysis methods that are associated with evaluation/assessment, measurement, qualitative, and/or statistical research related to distance simulation	47.2.1. Engage in distance simulation research; improvement and implementation research; health-related program policy development and evaluation; and educational scholarship
	47.1.2. Collect and report on key metrics related to distance simulation	47.2.2. Conduct sound, high-quality research to inform the construction, interpretation, and validation of distance simulation practices
	47.1.3. Support and report on the student and staff development of simulation, technology, and distance simulation key performance indicators, interests, and trends of students and staff	
48. Modify future distance simulation activities based on analyzed evaluations	48.1.1. Understand how to use assessment results to make decisions about students, curricula, or instruction in the context of distance simulation	48.2.1. Understand how knowledge of assessment can be used to inform policy related to distance simulation
	48.1.2. Communicate assessment results and interpretation related to distanced simulation to a broad audience	48.2.2. 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
		48.2.3. Identify strategies to address the gaps from the evaluation data to better meet the outcomes and objectives of the simulation program
49. Apply reliability and validity in distance simulation	49.1.1. Apply basic concepts of reliability and validity to distance simulation educational assessments	49.2.1. Design and implement studies to measure the reliability and validity of assessment tools related to distance simulation
	49.1.2. Utilize appropriate principles of reliability and validity in designing distance simulation activities	49.2.2. Utilize evidence-based theory to develop and test distance simulation educational assessments, recognizing the impact of the modality and

		technology being used in the reliability and validity of that assessment
	49.1.3. Recognize and analyze the impact of changes in the modality and technology being used in distance simulation design on the assessments' reliability and validity	49.2.3. Critique and select assessment tools, considering the reliability and validity of the tool, as well as its ability to produce optimal psychometric value while meeting the learning outcomes for distance simulation
50. Recognize the unique criteria for developing and implementing distance simulation in interprofessional education (Sim-IPE) activities	50.1.1. Conduct distance Sim-IPE based on a theoretical or a conceptual framework	50.2.1. Develop strategies to enhance interdisciplinary distance learning experiences
	50.1.2. Utilize best practices in the design, development and implementation of distance Sim-IPE	50.2.2. Collaborate with stakeholders within and across agencies to develop and integrate distance Sim-IPE in the curriculum
	50.1.3. Recognize and address potential barriers to distance Sim-IPE	50.2.3. Develop and implement a comprehensive evaluation plan for all Sim-IPE activities in the curriculum
	50.1.4. Facilitates appropriate team-based distance debriefing strategies and feedback following distance Sim-IPE based experiences	
	50.1.5. Include an appropriate evaluation plan for that particular modality being used for distance Sim-IPE	
	50.1.6. Include representation of individual disciplines during planning, implementation and evaluation of Sim-IPE activities	
<b>Domain 4: Simulation Resources and Environments</b>		
51. Identify and employ appropriate technologies (technological architecture) in distance simulation	51.1.1. Identify and acquire basic knowledge of the elements of distance simulation technologies according to organizational needs (e.g., application software, operating systems, learning management systems, devices, audiovisual components, virtual environment technologies, 2D and 3D applications, etc.)	51.2.1. Provide technical oversight, support, feedback and training to faculty, technicians and staff for distance simulation regarding operations of technological systems and documentation of relevant data according to organizational needs

	51.1.2. Employ various technologies to design and conduct distance simulation sessions according to the learning objectives and learners needs (e.g., web-based teaching environments, content management systems, collaborative project development, and interactive media)	51.2.2. Provide education and technical assistance to faculty/healthcare institution representatives in understanding and coaching distance simulation
	51.1.3. Identify institutional information systems guidelines that supports integration of distance simulation into the curricula	51.2.3. Collaborate with operational staff to support the technological infrastructure and computer system/networking necessary in a digital and/or virtual environment for the creation, storage, analysis and distribution of interactive distance simulation experiences in compliance with local regulations
	51.1.4. Anticipate and provide the training resources and supplies needed for distance simulation (e.g., computer, microphone, camera, internet, props, moulage, videos, task trainers, other emerging technologies for telesimulation or remote patient monitoring devices consistent with scenario)	51.2.4. Explore existing and evolving technologies and technical trends in distance simulation
	51.1.5. Establish and maintain connectivity and compatibility among individual pieces of technology prioritizing the privacy and confidentiality of all parties involved in distance simulation	
52. Work with Standardized Participants (SPs) in distance simulation	52.1.1. Recruit or assist in recruiting SPs with the training or ability to utilize distance simulation technology and software	52.2.1. Develop and promote expertise in knowledge, skills, and attitudes related to SP-based distance simulation
	52.1.2. Provide SPs with strategies and technical support to deal with unanticipated learner questions and behaviors in the digital environment and extended realities	52.2.2. Collaborate on the development and design of scenarios for distance simulation teaching and assessment activities involving SPs, with consideration of their appropriate use in distance simulation

	52.1.3. Develop learner materials preparation of SP encounters in distance simulation	52.2.3. Develop training and certification programs for SPs in distance simulation environments/cases
	52.1.4. Develop SP materials use for both teaching and assessment of learners in distance simulation	52.2.4. Collaborate with subject matter experts to design SP cases, training, and assessment materials for distance simulation
	52.1.5. Create a training, supervising and screening plan for SPs that is responsive to the context and format of distance simulation activities ensuring the appropriateness of SPs for that particular role in distance modality (no conflict of interest, no compromising of their psychological or physical safety)	52.2.5. Define the expected scope of SP involvement in work assignments for a distance simulation activity
	52.1.6. Attend and participate in appropriate organizational workshops to keep current on educational theory and practice in the use of SPs in distance simulation	
53. Establish relationships with distance simulation technology stakeholders	53.1.1. Collaborate with internal and external partners in bidirectional initiatives to implement distance simulation	53.2.1. Collaborate with colleagues to develop proposals for externally funded initiatives in distance simulation aligned with institutional priorities such as grants, research etc.,
	53.1.2. Formulate plans with stakeholders for distance simulation program sustainability (e.g., simulator purchase, technology services, IT support)	53.2.2. Create partnership with other facilities and industries in relation to distance simulation education and technology
		53.2.3. Conduct frequent program evaluations (with feedback loops) to assess implementation, program impact (including desired and unexpected outcomes), and attainment of program strategic goals
54. Acquire skills in multimedia in distance simulation in accordance with localized and institutional needs and desires	54.1.1. Gain and apply functional knowledge of terminology for the utilization of multimedia in distance simulation	54.2.1. Devise, create, activate and integrate virtual and augmented-reality spaces, characters and objects for distance simulation-based learning experiences

	54.1.2. Evaluate, select, and effectively apply various tools and technologies to the design, development, and dissemination of aesthetically pleasing, usable interfaces, graphic and media works in distance simulation	54.2.2. Promote complex and innovative distance simulation projects in new media and deliver them efficiently
	54.1.3. Conceptualize and create media assets for eLearning such as infographics, edited videos, animations, and various assessment types in the context of distance simulation	54.2.3. Integrate knowledge of design, language and photographic and audiovisual techniques to bring meaning to different types of content in distance simulation
		54.2.4. 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
		54.2.5. Utilize available illustration design software to produce and edit graphics and digitized photographs for integration into distance simulation learning experiences
		54.2.6. Demonstrate basic programing and web designing skills (for example, HTML5, CSS, or JavaScript), and skills with authoring tools and gamification programs (Captivate, Articulate/Storyline360, Microsoft Office Suite®)
55. Recommend modifications to distance simulation facility/program to improve outcomes	55.1.1. Apply functional knowledge and terminology for the utilization of network hardware that fixes, supports, and develops distance simulation products and programs	55.2.1. Improve distance simulation program outcomes by using clear communication (communicating within and across teams, documenting processes)
		55.2.2. 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



		55.2.3. Evaluate the effectiveness of complex and innovative distance simulation projects in new media or technologies
56. Manage distance simulation technical and material problems (e.g., connectivity, video capture, simulator failures, supplies, technical requirements)	56.1.1. Apply problem-solving skills to assist learners by resolving issues in the distance simulation setting	56.2.1. Update the functional knowledge and terminology for the utilization of equipment, software, and other products that support and develop distance simulation products and programs
	56.1.2. Acquire knowledge of distance simulation modalities and technologies (e.g., equipment, distance simulation settings, software or platform configuration, technical or technological components for user interactions, types of movements and tracking, etc.) to develop and support distance simulation sessions	
	56.1.3. Anticipate and identify technical problems/errors to initiate corrective actions by modifying distance simulation equipment and technologies	
	56.1.4. Manage technology systems' security (e.g., physical, network, data, storage) for developing, supporting, reported, and maintaining distance simulation by closely working with applicable organizational entities	
57. Recognize and report gaps, needs, and/or opportunities for a distance simulation program (e.g., equipment, staffing, policies)	57.1.1. 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	57.2.1. Apply principles of strategic planning to create policies to perform preventive/regular maintenance of distance simulation equipment and technologies to avoid disruptions in training
	57.1.2. Identify and explore performance gaps in the distance simulation setting	57.2.2. Develop infrastructure for revision of the policies at the introduction of new technologies and modalities

58. Identify how specific factors impact operational changes in distance simulation (e.g., purchases, staffing, logistics, policies)	58.1.1. Distinguish between different industries/products that support distance simulation and healthcare equipment, supplies, and environments	58.2.1. Consult with the experts in relevant fields (distance teaching, use of media in education, evaluations in distance setting, test construction and evaluations, etc.) to keep distance simulation practices updated
	58.1.2. 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/AR/MR	58.2.2. Assess and integrate the emerging trends in distance simulation and the impact of ever-changing technologies and taxonomies
59. Utilize distance simulation resources effectively and efficiently (e.g., money, people, space)	59.1.2. Establish an inventory of physical and digital resources with accessible as well as intended list of supplies, equipment, and personnel required to support the distance simulation	59.2.1. Research, evaluate, or create and curate new distance simulation technology resources for students and staff
	59.1.3. Maintain a competency-based training program for personnel to operate applicable equipment and programs relevant to distance simulation	59.2.2. Develop or assist in updating the existing business plan to serve distance simulation initiatives
	59.1.4. Communicate and practice safe/recommended use of distance simulation equipment and environment	59.2.3. 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
	59.1.5. Collaborate with the distance simulation team to manage roles, schedule requests, supply needs, and participant feedback to maximize the productivity	

### Abbreviations

**ADA:** Americans with Disabilities Act of 1990 ([https://www.ada.gov/ada\\_intro.htm](https://www.ada.gov/ada_intro.htm))

**HIPAA:** The Health Insurance Portability and Accountability Act of 1996 (<https://www.hhs.gov/hipaa/index.html>)

**FERPA:** The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) (<https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html>)

**HITECH:** The Health Information Technology for Economic and Clinical Health (HITECH) Act (<https://www.hhs.gov/hipaa/for-professionals/special-topics/hitech-act-enforcement-interim-final-rule/index.html>)

**GDPR:** General Data Protection Regulation (<https://gdpr-info.eu/>)

**Hyflex:** A Hybrid-Flexible or HyFlex is a student-centered model of instructional delivery

**SMART:** Specific, measurable, achievable, realistic, and time-phased

**XR:** Extended reality

**UI:** User interface

**DEI:** Diversity, equity and inclusion

**CRM:** Crisis resource management

**Sim-IPE:** Simulation in interprofessional education

**2D and 3D:** Two dimensional and three dimensional

**SP(s):** Standardized participants

**IT:** Information technology

**HTML5:** Hypertext markup language version 5; A set of modern web technologies

**CSS:** Cascading Style Sheets: style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML

**VR:** Virtual reality

**AV:** Audiovisual

**VR/AR/MR:** Virtual reality/ Augmented reality/Mixed reality