

Simulation Accreditation Manual for Clinical Training Sites



Government of Nepal
Ministry of Health and Food Safety
National Health Training Centre
Teku, Kathmandu

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Foreword



One of the key functions of the National Health Training Center (NHTC) is to ensure the quality, standardization, and accreditation of clinical training sites across Nepal. It is guided by the National Health Policy 2019 and Nepal Health Sector Strategy 2022–2030. NHTC prioritizes strengthening health workforce competencies and ensuring quality health services through improved training systems, accreditation, and quality assurance mechanisms.

In the health training arena, simulation-based education has emerged as a globally recognized approach to enhance competency-based training, skills practice, performance assessment, and continuous quality improvement across clinical training sites and healthcare facilities in a safe learning environment.

In collaboration with the Ministry of Health and Food Safety, Department of Health Services, National Health Training Centre, Medical Education Commission, Program Divisions, provincial authorities, and partners including GIZ, WHO, UNICEF, UNFPA, NSI, OHW, Laerdal Global Health and Simulation Society of Nepal, various simulation set-ups have been established, supporting simulation-based training and mentoring across Nepal. NHTC has integrated it into the National Health Training Strategy, clinical training packages, and as an important aspect in accreditation of clinical training sites. With the growing demand of simulation training, it was necessary to define the simulation related requirements. Hence, NHTC developed the Simulation Accreditation Manual for Clinical Training Sites to establish national standards for simulation related requirements for the Minimum Training Site Standards (MTSS).

The manual provides a framework for assessing and accrediting simulation aspects in the clinical training sites, ensuring quality, consistency, effectiveness, and sustainability across institutions. It is intended to guide public, private, academic, and non-governmental organizations in developing and maintaining high-quality simulation in the clinical training sites focusing comprehensively on different aspects like set-up & environment, equipment, quality delivery of simulation, human resources, governance & monitoring while promoting continuous improvement in healthcare training.

I extend my sincere appreciation to the Training Accreditation and Regulation Section, Medical Education Commission, Nepal Medical Council, Nepal Nursing Council, simulation experts, healthcare trainers, healthcare institutions, development partners, and all stakeholders who contributed to the development of this manual. We extend our heartfelt gratitude to Laerdal Global Health and the Simulation Society of Nepal for its continuous technical support in the process. I am confident that this resource will serve as an important milestone in advancing simulation-based education and strengthening healthcare services for the people of Nepal.


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Preface

The National Health Training Center (NHTC) is committed to strengthening health workforce competencies in Nepal. Simulation-based education supports national efforts to develop a competent health workforce capable of delivering high-quality, safe, and patient-centered care which is guided by the National Health Policy 2019 and National Health Sector Strategy. In line with this, NHTC has led integration of simulation into national training system and key programs, including SHP/SBA training. In the context of federalization, standardized accreditation is essential for strengthening and quality assurance of clinical training sites. Hence, NHTC has set Minimum Training Site Standards for accreditation of the Clinical Training sites. In this regard, simulation set-up requirements are key aspects of the standards.

Recognizing the need for national guidance, NHTC developed this **Simulation Accreditation Manual for Clinical Training Sites** to define simulation standards within clinical training site accreditation. This manual provides a framework for assessment, accreditation, and continuous improvement of simulation training sites, ensuring quality and alignment with National Health Training Strategy. It covers key domains including infrastructure, equipment, human resources, training delivery, monitoring, quality improvement, and governance. The manual consists of two parts:

Part 1: Minimum Simulation Accreditation Standards (Checklist for Accreditation of Simulation in Clinical Training Sites). It outlines the tiered accreditation framework and assessment matrix for clinical training sites, aligned with national standards. The framework includes four tiers: Skills/Simulation Corner, Simulation Room, Simulation Lab, and Centre of Excellence, and defines requirements across key domains.

Part 2: Basic Concepts of Simulation and its Operational Guidance: This section provides guidance on simulation-based methodology, including the Circle of Learning, simulation types and benefits, facilitation techniques, scenario development, and integration into healthcare training. It also covers simulation lab design, setup, operations, participant load planning, resource management, inventory and scheduling systems, and quality assurance mechanisms.

I would like to sincerely thank Ministry of Health and Food Safety, directors and officials of NHTC, the core writing group, government stakeholders, simulation experts, academic institutions, professional councils, and development partners for their valuable contributions, feedback in developing this practical and nationally relevant simulation accreditation framework. Since, this is a dynamic document, NHTC welcomes feedback and recommendations from stakeholders to further strengthening future editions of this manual and to advance simulation-based methodology as an integral component of national health training system.

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June 2026

Acronyms

ANM	Auxiliary Nurse Midwife
BEmONC	Basic Emergency Obstetric and Newborn Care
BEC	Basic Emergency Care
BLS	Basic Life support
CEONC	Comprehensive Emergency Obstetric and Newborn Care
CHU	Community Health Unit
CPR	Cardiopulmonary Resuscitation
CTS	Clinical Training Skills
DoHS	Department of Health Services
FP	Family Planning
HCWM	Health Care Waste Management
INACSL	International Nursing Association for Clinical Simulation and Learning
IOM	Institute of Medicine, Tribhuvan University
IUCD	Intra Uterine Contraceptive Device
LDHF	Low-Dose, High-Frequency
MEC	Medical Education Commission
MNH	Maternal and Newborn Health
MoHFS	Ministry of Health and Food Safety
MTSS	Minimum Training Site Standards
NASG	Non-pneumatic Anti Shock Garment
NMC	Nepal Medical Council
NHPC	Nepal Health Professionals Council
NHTC	National Health Training Centre
NNC	Nepal Nursing Council
OSCE	Objective Structured Clinical Examination
PEARLS	Promoting Excellence and Reflective Learning in Simulation
PEC	Primary Emergency Care
PHCC	Primary Health Care Centre
PHD	Provincial Health Directorate
QA	Quality Assurance
QI	Quality Improvement
ROUSG	Rural Obstetric Ultrasound
SAS	Safe Abortion Services
SBA	Skilled Birth Attendant
SBM	Simulation-based methodology
SCORS	Simulation Culture Organizational Readiness Survey
SHP	Skilled Health Provider
SNCU	Special Newborn Care Unit
SOP	Standard Operating Procedure
SP	Standardized Patient
SSH	Society for Simulation in Healthcare
ToT	Training of Trainers
VR	Virtual Reality

Glossary

Assessment is the process that provides feedback about performance to a learner or group of learners. Assessment can be summative or formative.

Briefing is a conversation held preceding the start of a simulation activity where essential information is shared about the activity.

Debriefing is a semi-structured process in which the learner is encouraged to reflect on the events of the simulation with the aim of improving future performance.

Facilitator is an individual who provides guidance and support during simulation-based learning experiences.

Fidelity refers to the degree to which a simulated experience approaches reality. It is also referred to as authenticity and is influenced by the environment, equipment and resources used to develop the programme.

In-situ simulation means simulation activities which take place in the actual clinical environment ideally with the interprofessional teams that work together.

Objective is a statement of a specific result that the learner of a simulation activity is expected to achieve by the end of the activity. Observer is a person observing a simulation scenario, who might be faculty or learners themselves.

Participant is a person who engages in a simulation activity for the purpose of gaining or demonstrating mastery of knowledge, skills, and/or attitudes of professional practice.

Simulated practice is the array of structured activities that represent actual or potential situations in education and practice which allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyse and respond to realistic situations in a simulated environment.

Psychological safety is shared belief among participants that it is safe to take risks, ask questions, and admit mistakes without fear of negative consequences.

Simulation is the artificial representation of a complex real-world process with sufficient fidelity with the aim of facilitating learning through immersion, reflection, feedback, and practice minus the risks inherent in a similar real-life experience.

Tier is level of simulation facility complexity and capability under this national manual (Tiers 1–4).

Skills corner is a dedicated, low-resource learning space within a health facility or training site where learners practice specific clinical skills using task trainers, models, or basic simulation equipment in a structured and repetitive manner. It typically uses low- to medium-fidelity simulation tools such as anatomical models, part-task trainers, or basic manikins. The emphasis is on skill acquisition, repetition, and mastery, often supported by checklists, job aids, and peer or facilitator guidance. Unlike full simulation settings, skills corners generally do not involve complex scenario-based team simulations, but they form a foundational step within the broader simulation-based education framework.

Simulation facilitator is a trainer/ mentor/ health care professional who is trained or capable of implementing simulation methods: briefing, simulation scenario and debriefing through some training or a simulation facilitator course. They are directly guiding learners during the simulation with focus on active teaching and supporting learning outcomes.

Simulation faculty are educators/trainers who are trained or certified to develop simulation facilitators, curriculum design, integration, development of scenarios and materials, training, mentoring, evaluation and research. They hold higher level of simulation courses and have expertise in different simulation modalities.

Simulation corner is a designated space within a health facility or training centre equipped to conduct basic, scenario-based simulation training, where learners practice both individual skills and simple team-based clinical situations using low- to medium-fidelity simulation tools. It typically uses low- to medium-fidelity manikins, essential equipment, and job aids to recreate realistic care situations. Unlike a skills corner, it enables clinical decision-making, communication, and teamwork practice, often facilitated by a trainer and followed by brief debriefing or feedback sessions. A simulation corner serves as a bridge between basic skills practice and advanced simulation labs, supporting regular, on-site training and quality improvement within routine health service settings.

Simulation utility refers to the extent to which simulation is useful, valuable, and effective in achieving its intended educational, clinical, quality improvement, research, or systems objectives.

Simulation utilization refers to the extent, frequency, and manner in which simulation resources, programs, facilities, and activities are actually used by learners, faculty, healthcare workers, or organizations.

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1. Background

Simulation-based methodology is now a recognized core approach in health professions education and training worldwide — enabling safe, structured, and repetitive practice of clinical skills before exposure to real patients. It strengthens clinical competence, teamwork, communication, and decision-making while protecting patient safety during training.^{1,2}

Internationally, simulation has progressed from being an adjunct skills-training method to a core component of competency-based education, integrated into curricula, continuing professional development, and quality improvement systems. Global standards emphasize that effective simulation programs require more than equipment alone; they depend on structured educational design, trained faculty, debriefing quality, governance systems, and continuous quality improvement processes.¹

In Nepal, simulation is increasingly used across health professions education, including nursing, medicine, midwifery, emergency care, anaesthesia, and newborn health, to strengthen competency-based training. Its expansion is driven by gaps in clinical learning opportunities, uneven case exposure, and the need for safe practice environments to rehearse procedures. Under the leadership of National Health Training Centre, various training packages like SHP/ SBA training package have incorporated simulation as a training methodology, incorporated simulation in the training strategy. Ministry of Health and

Food Safety, National Health Training Centre, Program divisions under the Department of Health Services have set-up and supported provincial level as well as simulation labs, rooms and corners in many health institutions and academic and implemented simulation-based training, mentoring programs in collaboration with partners like GIZ, WHO, UNICEF, UNFPA, NSI, OHW, Laerdal Global Health, Simulation Society of Nepal among others.

Despite this growth, simulation implementation requires standardization in clinical training sites, with variation in infrastructure, trainers' capacity, integration in training curriculum, functionality of simulation set-up, and quality assurance systems. This variability highlights the need for a national document to guide quality assurance and development of simulation-based methodology, training across diverse level of training sites and could be referred by various institution. A nationally standardized accreditation system is needed to: define minimum quality standards at each clinical training site level; promote progressive improvement rather than compliance alone; ensure equitable quality of simulation training across Nepal's diverse geography; link simulation quality to health outcome improvements; and guide national investment and partner support in simulation infrastructure and faculty development. A guiding document is required to help guide the critical aspect of simulation during the accreditation of clinical training sites.¹

2. Purpose of the manual

This manual serves as supporting document for simulation accreditation in Nepal as part of the accreditation process of clinical training sites and as a reference document for simulation in health service delivery sites and institutions, academies, for using simulation methodology for competency building and quality improvement.

The primary purpose of this document is to define and guide the simulation related requirements for the Minimum Training Site Standards (MTSS) and establish clear, transparent, and contextually appropriate standards for assessing the quality, readiness, and implementation of simulation-based approach in clinical training sites in Nepal. Specifically, the manual aims to:

- Standardize quality of simulation-based methodology: Establish agreed benchmarks for simulation-based methodology ensuring consistency in educational quality, governance, and practice in clinical training sites.
- Strengthen institutional readiness: Support clinical training sites to assess organizational readiness, identify gaps in infrastructure, faculty, and curriculum, and develop plans to strengthen systems.

- Promote continuous quality improvement: Support Clinical training sites to use accreditation as a cyclical quality improvement process — not a one-time compliance check.
- Enable tier-appropriate standards: Provide a context-sensitive framework that accommodates the full range of Nepal's clinical training site capacities, from basic hospital, health posts to national level simulation centers.

With the implementation of simulation accreditation through the manual, the aim is to ensure high quality simulation and achieving outcomes of competent health care workforce, patient safety and improved patient care outcomes across Nepal. This will also help inform national planning for policymakers, regulators, and partners with a framework for prioritizing investments in simulation infrastructure and faculty development.

3. Users of the manual

This manual is designed for practical use by National Health Training Centre and clinical training sites of different levels of Nepal's health training system for guidance and accreditation mechanism of simulation in clinical training sites.

National Health Training Centre (NHTC) is the primary accrediting authority in coordination and

collaboration with: regulatory and government bodies like Provincial Health Training Centre, provincial ministries overseeing health, Provincial Health Directorate and health offices for accreditation of clinical training sites is presented in Table 1.

Table 1. Regulatory and government bodies for accreditation of clinical training sites

Health System Level	Types of Clinical Training Sites	Applicable Simulation Tier(s)
Community Level	Health posts, Birthing centers, CHUs, Urban Health Center	Tier 1-2
District/ Local Level	Municipal/ Basic hospitals	Tier 1–2
Provincial Level	Provincial hospitals, academia under provincial government	Tier 2–4
Federal Level	Federal hospitals, Teaching hospitals, NHTC, Academia, National referral centers, Specialized hospitals	Tier 3–4

This can also be used as a reference document to:

- Medical Education Commission (MEC), Nepal Medical Council (NMC), Nepal Nursing Council (NNC), Nepal Health Professionals Council (NHPC)
- Simulation educators and facilitators (at all tiers)

- Simulation lab focal persons and coordinators
- Simulation associates and lab technicians
- Health facilities which are service delivery sites but not necessarily training sites or potentially be in the future.

4. Process of the manual development

This manual was developed as part of NHTC's annual workplan (2081/82) through a consultative, evidence-informed, and contextually grounded process to define and guide the requirements for simulation as per the Minimum Training Site Standards. A Core Writing Group (CWG) and expert team led by Accreditation and Quality Regulation Section of National Health Training Centre for development of this manual.

This is guided by and aims to contribute to the National Health Policy 2076, Policy 6.18, which outlines the need for competent health care workforce and ensure quality services. Furthermore, as per the Nepal Health Sector Strategy, this manual aims to contribute to the development of standardized training approach and use of innovative simulation approach to ensure competent health care professionals.

4.1 Literature and standards review

A review of national and international simulation and health care training accreditation systems, standards, and best practices was undertaken to inform the development of nationally relevant accreditation standards. This included review of:

- Minimum training site standards (Checklist for accreditation of clinical training site) ³
- Clinical Training Skills package
- INACSL Healthcare Simulation Standards of Best Practice ¹
- SSH Accreditation Standards ⁴
- Evidence on simulation effectiveness and quality assurance ⁵
- Organizational readiness approaches, including the Simulation Culture Organizational Readiness Survey (SCORS) ⁶
- Global guidance on competency-based health professions education

- ASPIH accreditation standards ⁷

4.2 Contextual assessment and stakeholder consultation

Consultations were undertaken with key stakeholders involved in simulation-based approach across Nepal to understand the diversity of institutional contexts, existing simulation capacities, operational realities, and accreditation needs.

Consideration was given to:

- Variability in clinical training site resources
- Different training programs and services offered at the clinical training sites and service delivery sites
- Different levels of simulation facilities
- Faculty capacity in facilitating simulation
- Health workforce education priorities: formal and informal skills building activities
- Feasibility and sustainability of standards implementation.

4.3 Technical Working Group review

The draft manual underwent iterative review by technical experts, simulation experts and educators, facilitators of clinical training sites, regulatory representatives, and relevant stakeholders on one-to-one basis and in group to ensure technical validity, contextual appropriateness, and usability.

4.4 Finalization of the manual

The manual was refined through consensus-building to ensure that criteria are achievable, transparent, equitable, and supportive of continuous quality improvement across clinical training sites with differing levels of simulation maturity.

5. Overview of the accreditation process

The simulation accreditation process is a structured, multi-phase quality assurance pathway that will support the accreditation of simulation in the clinical training sites aligning with the accreditation cycle and process. It is designed not only to assess compliance with standards but also to promote and guide institutional readiness, continuous capacity building/ skills update, quality improvement, and sustainability of simulation program across diverse national health training systems.

The accreditation process shall consist of the following sequential steps:

Step 1: Fill the simulation accreditation application form

The clinical training sites should conduct internal meetings regarding simulation accreditation and proceed for the next steps. New clinical training sites seeking accreditation for the training site shall formally express interest for simulation accreditation together with the submission of an application to the National Health Training Centre. Clinical training site shall fill an application and compile the necessary documents and details of the existing training activities and resources. Please go through the Application format for new sites in Annex I.

Clinical training sites that are already accredited will periodically fulfil the requirements during the revision of the learning resource packages and based on the annual self-assessment conducted. The application format for the already accredited sites is attached in Annex II.

Step 2: Self-Assessment by the clinical training sites

The clinical training site shall undertake a structured self-assessment (according to proposed tier of clinical training site) based on the self-assessment scoring tool annexed in this manual (Annex III) to evaluate readiness, identify strengths and gaps, and determine preparedness for accreditation.

Self-Assessment activities:

During the self-assessment phase, clinical training sites shall:

- Form a self-assessment team with minimum of 3 representatives and assign a focal person/ coordinator for assessment
- Self-assessment team composition can be: Focal person eg: training coordinator, Nursing Chief, Head of the Hospital, as per the area of the training, additional members can be included.
- Conduct a standards-based internal review using the accreditation tool specific to the tier
- Compile documentary evidence and supporting materials
- Identify strengths, gaps, and areas requiring improvement

The self-assessment form is attached in the Annex III.

Step 3: Submission of application with self-assessment forms

Clinical training site should submit the application letter to National Health Training Centre along with following documents:

- a. Simulation accreditation application form
- b. Related meeting minutes
- c. Self-assessment form
- d. List of training conducted
- e. List of equipment, simulation materials, learning resources in training site.
- f. List of human resources involved in training site and training
- g. List of guideline, manuals, and standard operating procedures used in training

Step 4: Desk review and plan for external assessment

- The training accreditation and regulation section of NHTC will review all the application and documents to plan and decide for the external assessment if they meet the criteria as per the self-assessment scores (more than equal to 60%). The non-qualifying sites need to meet the criteria and re-submit the documents again.
- The decision of the external assessment is to be made within one month of the receipt of the application from the clinical training sites.
- Prepare monitoring plan for external assessment
- Inform to Accreditation Section for external assessment and take approval.
- Prepare external assessment team including a team lead with three members for Tier 1 and 2 and five members for Tier 3 and 4.

The assessment team for Tiers 1 and 2 should comprise of following:

- a) Representative from NHTC/ PHTC- 1 as Team lead

- b) Health office, respective program division or PHD- 1 as Member
- c) Simulation expert (related professional society, organization or institution) selected by NHTC -1 as Member

The assessment team for Tiers 3 and 4 should comprise of following:

- a) Section chief & Representative, Training Accreditation and Regulation Section-1 as Team lead
- b) PHTC Representative for training site under province-1 as Member
- c) Representative from respective program division (federal/ province)-1 as Member
- d) Representative from Simulation related professional societies in Nepal-1 as Member
- e) Expert undertaking simulation training from other training site/Academia/University/ organization selected by NHTC-1 as Member

All the external assessment team should receive detailed orientation about the tools, method of assessment and monitoring, ways of preparing report, methods of interaction with personnel of training site and others.

Step 5: External assessment and validation

The team lead will review the self-assessment form. Assign the task for each team members to be assessed in different areas. The standardized checklist/tools must be followed by all assessors. Provide positive and constructive feedback on time, based on checklist/tools.

Methods of external assessment

External assessors may employ multiple methods, including:

- Document verification
- Observation of facilities and simulation environments
- Observation of simulation sessions (where feasible)

- Interviews with institutional leadership
- Interaction with faculty and simulation staff
- Learner interviews or group discussion
- Review of governance and quality systems

Step 6: Accreditation decision

The external assessment team will submit recommendations and report to Section Chief, Training Accreditation and Regulation Section. The section will start the formal process for accreditation decision from NHTC.

Table 2. Possible accreditation status based on the scores

Accreditation status	Description	Validity period
Accredited	Clinical training site meets the requirements in the domains, do not miss critical elements and has with following percentage: $\geq 80\%$ with commitment to fulfil the suggestion points given by monitoring team	If $\geq 80\%$ for 5 years
Provisional	Clinical training site demonstrates readiness and foundational systems but requires further strengthening, do not miss critical elements 60-79% with commitment to fulfil the suggestion points given by monitoring team	1 year
Non-Accredited	Clinical training site does not sufficiently meet required standards Less than 60%	No accreditation

Highest tier achieved in the accreditation will waive off the requirement for separate accreditation lower tier set-ups if also present within the clinical training sites. For e.g. If Tier 4 has skills corner/ simulation corners i.e. Tier 1, it will not require a separate accreditation for Tier 1.

The Clinical training sites will be awarded with a certificate for the accreditation received. The accreditation certificate is attached in the Annex IV.

Step 7: Post accreditation follow-up and monitoring for Continuous Quality Improvement

The post accreditation follow-up to be performed as per the level of accreditation and based on the

action plan developed that will be implemented for quality improvement. Action plan format attached in the Annex V. This also needs to align with minimum training site standards. For those accredited, self-assessment to be submitted to PHTC/ NHTC every year, periodic as per the need and the final year before the validity deadline, a monitoring visit from NHTC will be done in coordination with PHTC.

The training sites wanting to upgrade the accreditation tiers will submit the application with self-assessment to NHTC. The training sites are required to submit the self-assessment form annually to NHTC within the accreditation process.

Accreditation Process Flow

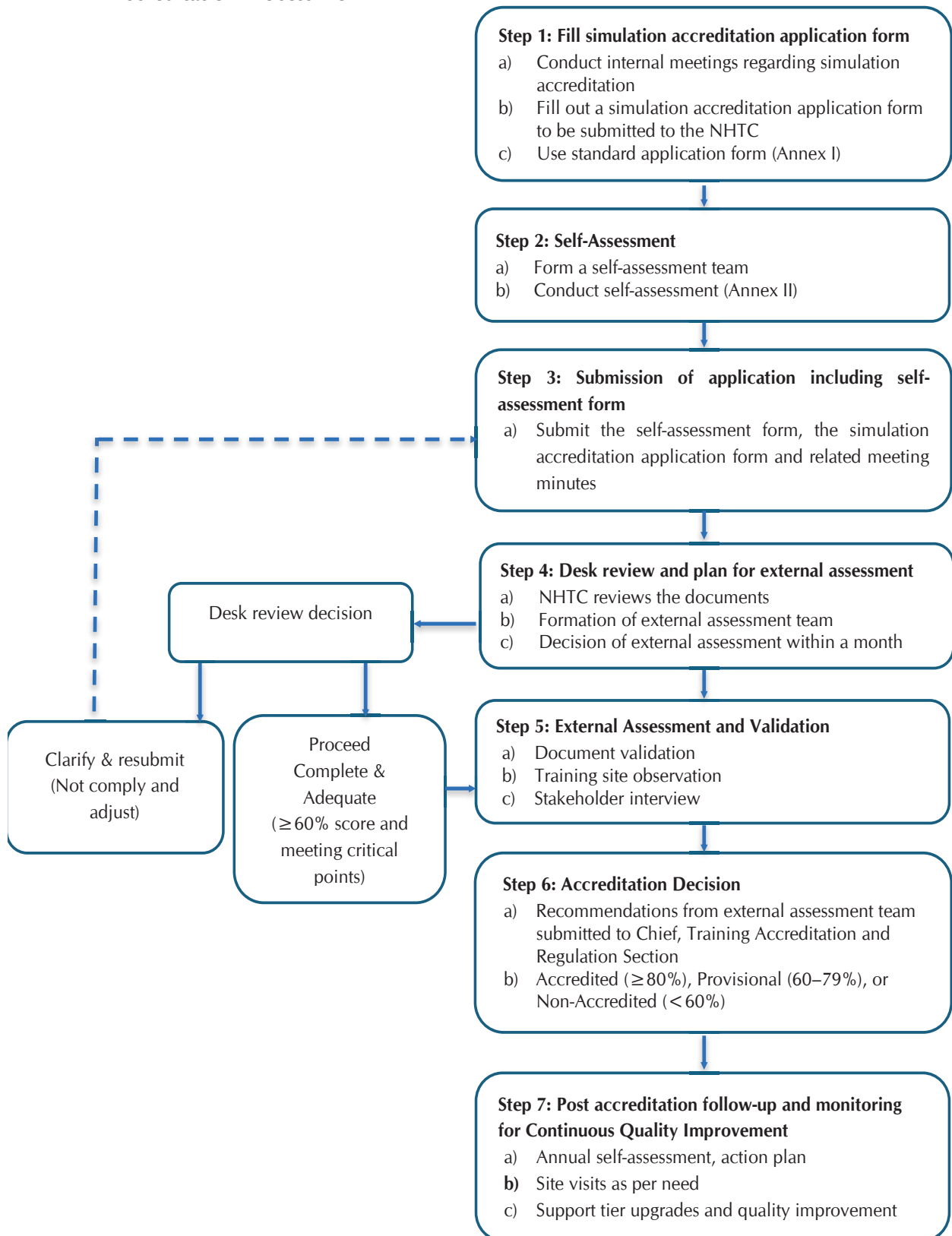


Figure 1. Accreditation flow

A. MINIMUM SIMULATION ACCREDITATION STANDARDS (CHECKLIST FOR ACCREDITATION OF SIMULATION IN CLINICAL TRAINING SITES)

6. Accreditation criteria for simulation in clinical training sites

6.1 Tier structure of simulation set up at the clinical training sites: description

The simulation capacity of clinical training sites is categorized into four progressive tiers based on infrastructure, equipment, fidelity level and training delivery, institutional/ trainer's capacity and monitoring & governance. Each tier reflects increasing levels of simulation facility from basic skills practice or simulated practice spaces/ simulation corners to national centres of excellence

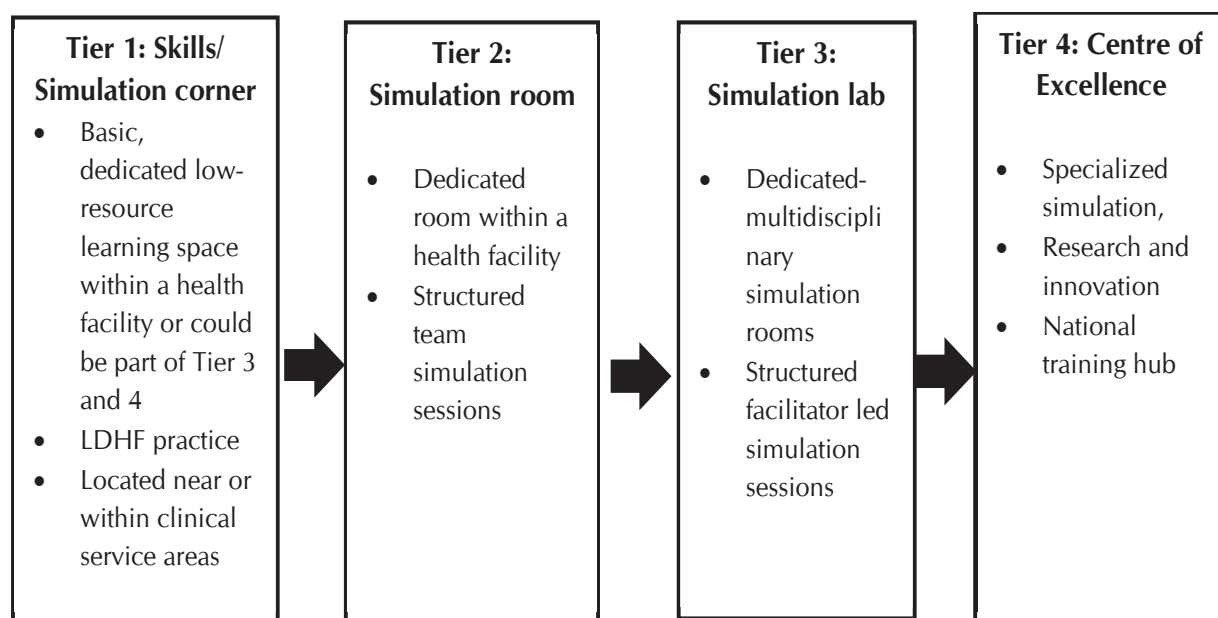


Figure 2. Tiered categories of clinical training sites based on simulation capacity

Table 3. Tier 1: Skills or Simulation Corner

Interpretation	Basic facility-based skills or simulation set-up for regular practice of essential clinical skills using simple equipment, mostly integrated into routine service delivery: - Regular practice and skills update - Facilitated by in-house staff rather than full-time simulation personnel - Located near or within clinical service areas - Equipped with essential low to medium fidelity skills or simulation solutions as per need and job aids - Includes basic clinical and procedural skills such as Basic Emergency Care, newborn resuscitation, and cardiopulmonary resuscitation
Probable Level of Sites	Small sites including: • Health posts, • Birthing centres • Primary hospitals • PHCC, CHUs, Urban Health Centres, • Municipal/ Basic Hospitals or Tier 4 set-ups with In-situ skills or simulation corners within clinical areas
Example Skills / Training	Single-task, individual or peer practice including: - Chest compression (CPR) - Newborn resuscitation - Intubation - IV cannulation - Breaking bad news - Counselling - NASG application
Tentative Area	Approximately 6 ft x 6 ft ($\approx 3.3 \text{ m}^2$) per learner; total 5–8 m^2
Scoring / Accreditation	$\geq 80 \%$: Accredited 60–79%: Provisionally accredited $< 60\%$: Not accredited

Table 4. Tier 2: Simulation room

Interpretation	• Dedicated, structured learning space within a health facility designed to deliver planned, facilitator-led simulation training sessions using moderate-fidelity equipment
Probable Level of Sites	• Health posts, • Birthing centres • Primary hospitals • PHCC, CHUs, Urban Health Centres • Municipal/ Basic Hospitals or provincial hospitals without full simulation labs
Example Skills / Training	Scenario-based and structured training including: - Management of unresponsive patient - Postpartum haemorrhage - General skills training
Tentative Area	Approximately 350 sq ft ($\approx 32.5 \text{ m}^2$) per room
Scoring / Accreditation	$\geq 80 \%$: Accredited 60–79%: Provisionally accredited $< 60\%$: Not accredited

Table 5. Tier 3: Simulation Lab

Interpretation	• Dedicated facility that delivers structured, multidisciplinary simulation training with debriefing, assessment, and integration into quality improvement systems. • Includes comprehensive simulation-based learning systems with assessment, feedback, and performance monitoring. • Supports both pre-service education and in-service professional development and strengthens clinical decision-making, communication, and crisis management skills.
Probable Level of Sites	• Provincial hospitals, • Teaching hospitals, • Academia, • Major referral centres
Example Skills / Training	Complex and team-based training including: • Team training (Code Blue, trauma resuscitation) • OSCE circuits • System testing such as new Electronic Health Record rollout
Tentative Area	Approximately more than 1000 – 1500 sq.ft total facility
Scoring / Accreditation	≥ 80 %: Accredited 60–79%: Provisionally accredited < 60%: Not accredited

Table 6. Tier 4: Centre of excellence

Interpretation	• An advanced simulation hub that leads training, research, and national capacity building while supporting and mentoring lower-tier simulation facilities. • Specialized simulation centres • Includes leadership in Training of Trainers (ToT), faculty development, accreditation support, research and innovation, and contribution to policy development and national standards. • It can also have Tier 1 skills/ simulation corner in the clinical area
Probable Level of Sites	• Major training centers, • Premier teaching hospitals, • National training centers, • Advanced simulation institutes
Example Skills / Training	Advanced and system-level training including: • Interprofessional full-scale simulations (mass casualty, obstetric emergencies) • Curriculum development and research • Facilitator and fellowship training programs
Tentative Area	Approximately more than 2000 sq ft
Scoring / Accreditation	≥ 80 %: Accredited 60–79%: Provisionally accredited < 60%: Not accredited

6.2 Accreditation tool matrix for the clinical training sites of different Tiers

Table 7. Description of accreditation tool matrix for clinical training sites of different tiers

Accreditation domains	Weight	Tier 1 Skills corner/ room	Tier 2 Simulation room	Tier 3 Simulation lab	Tier 4 Centre of excellence
Criteria for Domain 1: Infrastructure set-up and environment	15%	i. Space: Dedicated simulation space/ room (s) available ii. Adequate space for participant load iii. Layout: Basic layout resembles clinical environment with job aids, checklists iv. Seating arrangements for briefing/debriefing or discussion v. Lighting, ventilation, clean and adequate safety vi. Storage space for simulation equipment vii. Power supply available (backup preferred) viii. Relevant furniture as per the set-up			
Description of Domain 1 : Infrastructure set-up and environment		• Space within clinical area • No dedicated room required • Basic storage • Minimal setup Could be as an extension in the centre of excellence or simulation lab Example Training area: Newborn resuscitation station (HBB) Basic maternal care (delivery steps) IV/Injection practice corner Airway/BLS practice station, Shock, Eclampsia, Condom tamponade	• Dedicated simulation room • Seating + briefing space • Basic clinical layout • Reliable utilities Example Training area: MNH, FP, Child Health. Labour room (LR) Emergency room (ER) Ward scenario	• Dedicated simulation lab • Separate debriefing space • Simulated clinical environment • Structured layout (ER/LR/ICU corners) Example Training area: Multidisciplinary programs, ICU, paediatric, selected surgical • Labour Room (LR) • Emergency Room (ER) • ICU / Critical Care Area • Newborn care / SNCU • Ward / OPD area	• Full simulation center • Multiple rooms/zones • Dedicated debriefing rooms with AV • Administrative and training areas Example Training area: Advanced Clinical Simulation area • Labour room (high-fidelity) • ICU (adult + neonatal) • Emergency & trauma unit • Operation theatre (OT simulation) • Pediatric simulation area • Specialty Simulation Areas • Surgical simulation • Critical care simulation • Trauma/burn simulation • Mental health (standardized patient space)

					Education & Debrief Zones • Multiple debrief rooms (AV-enabled) • Lecture halls/ training rooms • OSCE/ assessment stations Support Areas • Simulation control rooms • Faculty workspace • Equipment warehouse • Research and development space
Criteria for Domain 2: Equipment and Materials	20%	i. Equipment, manikins and medicine, for specific training as per Minimum Training Site Standards available and functional ii. Required equipment adequate as per the participant load (max. 1:8 ratio) iii. Standard job aids, protocols, checklists, guidelines, scenarios iv. Equipment inventory maintained v. Scenario scripts and checklists available vi. Equipment and consumables supply plan and maintenance			
Description of Domain 2: Equipment and Materials		• Basic task trainers • Neonatal resuscitation model • Bag/mask • Basic delivery model	• Moderate fidelity simulators • Maternal + neonatal models • Basic adult airway + monitoring • Scenario + checklists	• Advanced simulation systems • Maternal, newborn, adult emergency simulators • AV recording playback • Scenario bank	• Highly specialized simulators • Critical care, surgical simulation • Digital systems & LMS • National-level equipment repository
Criteria for Domain 3: Human resources	25%	• Trainers for respective training (MTSS) • Facilitators trained in different skills and simulation modalities • Evidence of facilitator training/ mentoring records • Supportive/ technical staff available as per needs • Regular refresher training for facilitators and trainers • Defined focal person for simulation/ simulation associates/ coordinator			

Description of Domain 3: Human resources	• ≥ 1 trained focal person • Basic simulation facilitation skills • No dedicated faculty required	• ≥ 2 trained simulation facilitators • Basic simulation facilitation + debriefing skills • Defined simulation focal point	• Simulation-trained facilitators team • Formal training in debriefing • Dedicated simulation lead Simulation associates Organogram in place	• National expert faculty pool in simulation • Master trainers (ToT) • Technical & research staff • Accreditation/mentorship roles Simulation Director, lead, faculty Organogram in place
Criteria for Domain 4: Training System and Delivery	25%	• Structured training schedule/ calendar available • Training aligned with national programs (SBA, BemONC, BEC) • Use of standardized simulation scenarios • Structured session flow (brief–simulate–debrief) • Different simulation modalities: hybrid simulation, standardized patient, manikin based, interprofessional team-based training • Use of competency-based checklists for skills practice and assessments as per the need • Training plan to support and linkage with quality improvement • Documentation of training sessions		
Description of Domain 4: Training System and Delivery	• LDHF/on-site practice • Informal sessions • Skills reinforcement Training: • MNH • (HBB, maternal care) • FP (IUCD basic) • BLS • IPC.	• Structured sessions • Use of scenarios + checklists • Scheduled training calendar • Competency-based approach Training: • All of tier 1 + SHP/ SBA SAS, FP, Infection prevention and HCWM • Basic Life Support • Emergency Medical Technicians	• Advanced simulation programs • Multidisciplinary training • Structured debriefing • Competency assessments Training: • All of tier 2 + SHP/ SBA full, SAS • Fistula, ROUSG • Paediatric ICU EMT • Burn care • OT technique	• National/regional programs • ToT delivery • Curriculum development • Integrated education systems Training: • All of Tier 3 + programs across themes • Advanced surgical simulation • Advanced ICU • National ToT • Accreditation & faculty development

				Haemodialysis, palliative care, Mid-Level Practicum, Mental Health and Psychosocial counselling, Basic Critical Care, Essential Critical Care, Pediatric Critical Care, Basic Life Support, Emergency Medical Technicians	
Criteria for Domain 5: Monitoring, Governance resource management	15%	- Simulation coordination team or committee formed - Dedicated budget for simulation, operations - Followed simulation operational plan: attendance - Quarterly review: operations, participant feedback on training and trainers collected, training record, Clinical outcomes, review of action plan and follow up, utilization - Implemented improvement plan as per review or assessment. - Followed skills tracking for relevant training - Implemented learning management system: skills tracking for relevant training, participant scores, applications			
Description of Domain 5: Monitoring, Governance resource management		- Basic logbook - Minimal monitoring - Informal QI linkage	- Training records - Feedback system - Link to facility QI - Leadership engagement	- Routine reporting - KPI tracking - Strong QI integration - Structured evaluation	- National monitoring systems - Research & evaluation - Quality assurance leadership - Policy contribution
			Simulation committee formed		Simulation Committee Financial management

Highest tier achieved in the accreditation will waive off the requirement for separate accreditation lower tier set-ups if also present within the clinical training sites. For eg. If Tier 4 has skills corner/ simulation corners i.e. Tier 1, it will not require a separate accreditation for Tier 1

7. Alignment with the clinical training sites standards and system

The Simulation Accreditation Manual for Clinical Training Sites is aligned with the Minimum Training Site Standards (MTSS) developed by NHTC and serves as a complementary framework within Nepal's health training system. This document guides the simulation requirement in the respective section of MTSS and will align on the accreditation cycle. While MTSS establishes the minimum requirements for clinical training sites—such as infrastructure, human resources, service readiness, and adherence to national standards—simulation accreditation strengthens these foundations by enabling competency-

based learning through structured, safe, and standardized simulation practice. Together, the two frameworks create a continuum of quality assurance by linking clinical service standards, training quality, and simulation-based skill development, ultimately enhancing workforce competency, patient safety, and health system performance. The accreditation process for the Clinical training sites will incorporate the simulation accreditation aspect and this manual will serve as the guidance and detailed tool to accredit the simulation set-up.

B. Basic concepts of simulation and its operational guidance

8. Concepts of simulation-based methodology

8.1 Circle of learning

Medical errors are among the top three leading causes of death in the US. ^[2] Patient safety is a serious global public health concern. It is estimated that there is a 1 in 3 million risk of dying while travelling by airplane. In comparison, the risk of patient death occurring due to a preventable medical accident, while receiving health care, is estimated to be 1 in 300.⁸ Safety studies show that additional hospitalization, litigation costs, infections acquired in hospitals, disability, lost productivity and medical expenses cost some countries as much as USD 19 billion annually, the economic benefits of improving patient safety are therefore compelling. The harm can be caused by a range of incidents or adverse events, with nearly 50% of them being preventable. In a study on frequency and preventability of adverse events across 26 hospitals low- and middle-income countries (LMIC), the rate of adverse events was around 8%, of which 83% could have been prevented and 30% were associated death.⁹ World Health Organization approximates two thirds of all adverse events occur in LMICs.⁸

The Circle of Learning is a framework that identifies stages of learning in healthcare education and illustrates the process of going from theoretical knowledge to clinical practice and ensure patient safety and health care quality improvement.¹⁰

The Circle of Learning consists of six steps:

- i. **Healthcare quality improvement:** Healthcare quality improvement should be the start and end point of any health care training, which ensures that learning is translated into better clinical practice and improved patient outcomes, is the starting and endpoint for healthcare education and training. By continuously learning, practicing through simulation, applying skills in the workplace, measuring performance, and using data to improve care, healthcare teams create a sustainable cycle of competency development and quality improvement.



Figure 3. Circle of learning

- ii. **Knowledge acquisition** is the process of acquiring knowledge through textbooks, charts, anatomical models etc.
- iii. **Skills proficiency** is the process of developing psychomotor skills through repetitive practice to master practical procedures typically using task trainers and simulators. Here, checklists and skills labs play an important role. Checklists ensure objective and standardized learning of skills. Skills proficiency may not be achieved in one training but through repeated practice as per the need of the health care professionals.
- iv. **Decision making** is using problem-based learning/ computer programs/ case studies that provide intelligent feedback to develop critical thinking and decision-making skills.
- v. **Simulation in teams** allows a group of students to practice and role play realistic scenarios to improve technical- critical thinking, physical skills and clinical decision-making skills and non-technical skills like communication, time-management during clinical care, leadership and teamwork. Students could apply their previous knowledge and skills attained in a classroom to real world situations which require making decisions that in many cases well before they experience it in their clinical practicum experiences.

With simulation, students and providers can gain experience with various types of patients and cases they may not often encounter during their rotations and shifts. This is particularly significant for training to manage emergency situations.

- vi. **Actionable insights** at the centre is actionable insights which is collecting and analysing the training related data for the stakeholders, decision makers, faculty and presenting it in a way that is both easy to absorb and act on in a manner that the expected outcomes are achieved.

8.2 Simulation-based methodology

Simulation is a technique-not a technology-to replace or amplify real experiences with

guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner.^[5] Simulation is the artificial representation of a complex real-world process with sufficient fidelity with the aim to facilitate learning through immersion, reflection, feedback, and practice minus the risks inherent in a similar real-life experience. It is a technique, rather than a technology. It promotes experiential and reflective learning.

8.3 Integration of simulation-based methodology into health care training and education

Traditional healthcare training and education followed the “see one, do one, teach one” approach on real patients. Modern pedagogy now emphasizes “see one, practice many, then do one,” using skills and simulation before clinical practice. Simulation-based education (SBE) has become an essential teaching method in healthcare as it supports safe, effective learning and skill development.

Best practices in simulation are characterized by¹

1. Facilitated Reflective Debriefing
2. Repetitive practice (LDHF)
3. Distributed practice
4. Curriculum integration
5. Clinical variation
6. Range of difficulty
7. Individualized learning
8. Multiple learning strategies
9. Defined outcomes
10. Valid simulator

Simulation is widely used to teach procedural skills, communication, teamwork, leadership, clinical decision-making, and patient care. Its growing integration into pre-service and in-service training programs reflects its strong potential to strengthen the health workforce and improve healthcare quality. Simulation significantly improves learning in situations that are difficult to reproduce, such as patients with rare diseases or complex situations in which the

time of action and administration of drugs must be optimized and reproduced in the laboratory until the best possible results can be obtained.¹¹ Integrating and designing simulation-based methodology requires putting learner and learning outcome at the centre and designing curriculum and tools accordingly.¹²

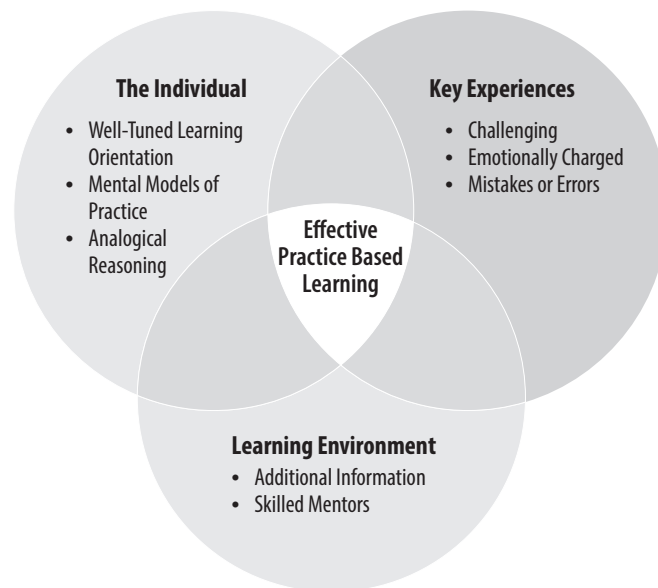


Figure 4. For effective learning to take place, educators must consider the relationships between the individual learner, their key experiences, and the learning environment¹²

8.4 Different phases in implementation/ facilitation of simulation sessions

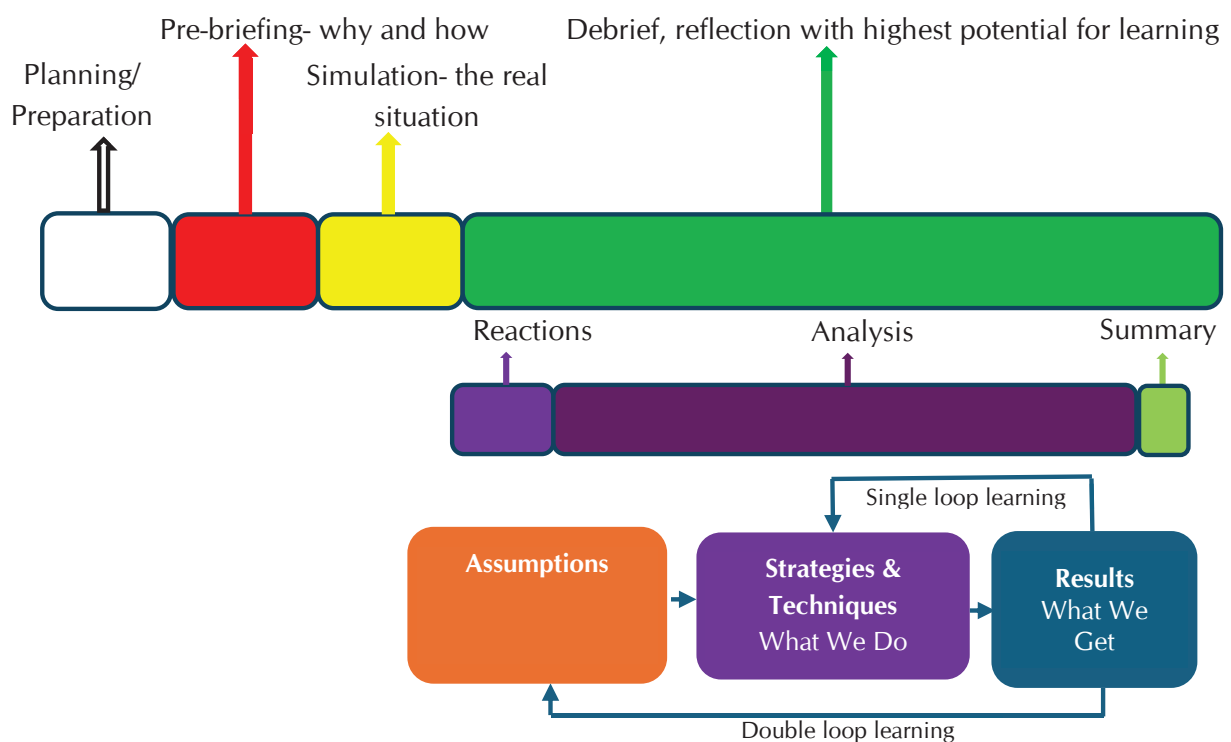


Figure 5. Four phases of simulation scenario

In any simulation scenario, there are four phases.

- Planning/ preparation
- Pre-briefing/ briefing
- Running a simulation scenario
- Debriefing

8.4.1 Planning/Preparation

Before the session, facilitators should:

- Review the learning objectives.
- Prepare the simulation scenario.
- Ensure all equipment and simulators are functioning.
- Prepare medications, documentation, and patient records if required.
- Assign faculty roles (facilitator, operator, observer, standardized patient).
- Arrange the simulation environment to resemble the intended clinical setting.
- Conduct a technical check of audiovisual equipment if recording is used.

8.4.2 Pre-briefing

Pre-briefing is a structured orientation conducted before the simulation begins. It establishes expectations and creates psychological safety.

Key components include:

- Welcome and introductions.
- Learning objectives.
- Confidentiality agreement ("What happens in simulation stays in simulation").
- Fiction contract (acknowledging that simulation is not real but should be treated as such).
- Orientation to the simulator, equipment, and environment.
- Explanation of participant roles.
- Assessment methods, if applicable.
- Opportunity for questions.

A high-quality pre-brief improves learner confidence, engagement, and performance.

8.4.3 Scenario Facilitation

During the simulation, the facilitator guides the learning process without unnecessarily interrupting the scenario.

Facilitator responsibilities include:

- Initiating the scenario.
- Providing patient responses through the simulator or standardized patient.
- Adjusting physiological parameters based on learner actions.
- Ensuring psychological safety and patient safety within the simulation.
- Maintaining realism.
- Providing cues or scenario life savers only when necessary to support learning objectives.
- Managing time effectively.
- Observing learner performance objectively.

The facilitator should encourage learners to think critically and make independent clinical decisions rather than providing immediate solutions.

8.4.4. Debriefing

Debriefing is a critically reflective discussion, where aspects of experiential learning are analysed to gain insights, and to consolidate knowledge, skills, attitude and behaviour, which have the potential to enhance future clinical practice. During the debriefing, individuals must reflect upon the experience, identify the mental models that led to behaviours or cognitive processes, and then build or enhance new mental models to be used in future experiences.¹²

The objectives of the debriefing are to:

- Analyze clinical decisions.
- Reflect on actions and thought processes.
- Reinforce good practices.
- Identify areas for improvement.
- Translate learning into clinical practice.

Effective debriefing should:

- Be learner-centred.
- Encourage self-reflection.
- Focus on behaviours rather than individuals.
- Use open-ended questions.
- Maintain psychological safety.
- Be evidence-based and non-judgmental.

Different types of debriefing-

CORE¹²

- a) Context – Immediate Reactions of the participants and review of the Learning Objective.
- b) Observation – Chronological walkthrough of the events during the scenario
- c) Reflection – Participants’ reflection of the events to discuss and analyse what went well and what they would like to change. Use Advocacy and Inquiry Questions to navigate Why
- d) Enhancing Practice – Take home message and change in practice with what they would do, how they would do and when they would do.

PEARLS¹³

Promoting Excellence and Reflective Learning in Simulation, framework integrates three common educational strategies used during debriefing, namely: learner self-assessment, facilitating focused discussion, and providing information in the form of directive feedback and/or teaching.

3D Model of debriefing¹²

The 3D Model of Debriefing is a structured approach used in simulation-based learning that guides participants through three phases: Defusing, Discovering, and Deepening. During Defusing, learners share their initial reactions and emotions to create a safe and supportive environment. In Discovering, participants analyze their actions, decision-making, teamwork, and clinical reasoning to understand why events occurred. Finally, in Deepening,

learners identify key lessons and discuss how to apply these insights to future clinical practice. This model promotes reflective learning, enhances performance, and supports continuous improvement in patient care.

GAS – Gather – Analyze- Summarize¹

The GAS Model of Debriefing (Gather–Analyze–Summarize) is a simple and structured debriefing framework used in simulation-based learning. During the Gather phase, participants review and describe what happened during the scenario. In the Analyze phase, learners explore their actions, decision-making, communication, and teamwork to understand why events occurred and identify areas for improvement. In the Summarize phase, key lessons, strengths, and opportunities for growth are consolidated, and participants discuss how to apply the learning to future clinical practice. The GAS model promotes reflective learning, reinforces good practices, and helps translate simulation experiences into improved patient care.

RAS- Reaction-Analysis-Summary¹

The RAS Model of Debriefing (Reaction–Analysis–Summary) is a structured approach used in simulation-based learning to facilitate reflection and learning. During the Reaction phase, participants share their immediate feelings and impressions about the experience. In the Analysis phase, learners examine their actions, decisions, communication, and teamwork to understand what went well and what could be improved. In the Summary phase, key learning points are consolidated, and participants identify practical actions to apply the lessons learned in future clinical practice. The RAS model helps promote reflective learning, reinforce effective behaviors, and improve clinical performance and patient outcomes.

Debriefing with Good Judgment¹

Debriefing with Good Judgment (DWGJ) is a debriefing approach that combines high standards with genuine curiosity and respect for learners. Rather than simply telling participants

what was right or wrong, facilitators explore the reasoning behind learners' actions and decisions through reflective discussion. Using techniques such as advocacy and inquiry, facilitators share their observations and then invite participants to explain their thought processes. This approach helps uncover underlying assumptions, promotes psychological safety, encourages deeper reflection, and supports meaningful learning and performance improvement in clinical practice.

8.4.5. Feedback and Evaluation

After debriefing, facilitators should:

- Provide constructive feedback.
- Discuss strengths and opportunities for improvement.
- Encourage self-assessment.
- Collect learner feedback regarding the simulation session.
- Complete assessment tools if competency evaluation is required.

8.4.6. Post-Simulation Follow-up

Facilitators may:

- Assign reflective writing.
- Recommend further reading.
- Repeat the scenario for deliberate practice.
- Provide remediation if needed.
- Document learner performance.

8.5 Types of simulation

Medical simulation has become a cornerstone of healthcare training, offering a safe space for professionals to hone their skills. With various simulation methods available, it's crucial to choose the right approach based on the specific needs.

i. Manikin-Based Simulation

Manikin-based simulation uses life-sized models to mimic human anatomy and medical conditions. It's ideal for practicing hands-on procedures like CPR, intubation, and suturing, providing essential tactile

feedback. While excellent for developing motor skills, it may not fully capture the emotional and psychological nuances of patient care.

ii. Standardized Patient Simulation

In this method, trained actors simulate medical conditions, allowing professionals to practice diagnosis, treatment, and patient communication. This approach is invaluable for developing bedside manner and clinical reasoning, though it's less suited for technical procedures.

iii. Virtual Reality (VR) Simulation

Virtual simulation is a computer-based representation of real-life situations that allows learners to practice and apply knowledge and skills in an interactive virtual environment. VR simulation offers immersive, 3D environments where learners can practice complex scenarios, particularly in surgical and emergency settings. While highly realistic, VR can be expensive and may require significant training to use effectively. Virtual simulation complements traditional simulation by providing accessible, scalable, and repeatable learning experiences through virtual patients, immersive VR environments, screen-based simulations, or online clinical scenarios.

iv. In- situ Simulation

In-situ simulation (ISS) is a simulation-based educational activity that takes place in the actual clinical environment, using the real healthcare team, equipment, and clinical systems.

iv. Hybrid Simulation

Hybrid simulation combines elements from manikin-based, standardized patient, and VR simulations, offering a comprehensive training experience. It is particularly useful for complex cases requiring both technical and interpersonal skills, though it demands significant resources.

v. Augmented Reality (AR) Simulation

AR (Augmented Reality) is a technology that overlays digital information (such as 3D images, text, animations, or holograms) onto the real-world environment, allowing users to see and interact with both the physical and virtual worlds simultaneously.

Choosing the Right Approach

When selecting a simulation method, consider your learning goals and available resources. Manikin-based simulations are ideal for procedural skills, standardized patients excel in communication training, and VR is perfect for complex, high-stakes scenarios. Hybrid simulations offer the most holistic training but require more resources. Ultimately, the right choice depends on what you need to achieve in your training program.

8.6 Simulation scenario design

Scenario design in medical simulation is about creating realistic, structured clinical situations where learners can safely practice decision-making, technical skills, and teamwork. A well-designed scenario doesn't just "tell a story"—it deliberately targets learning objectives and guides participants through a meaningful experience.

Criteria Necessary to Meet this Standard

- i. Simulation-based experiences should be designed in consultation with content experts and knowledgeable in best practices in simulation education, pedagogy, and practice: Simulation designers should have formal or informal training in simulation pedagogy and practices.
- ii. Perform a needs assessment to provide the foundational evidence of the need for a well-designed simulation-based experience: The needs assessment may include analysis of:
 - a. Underlying causes of concern (e.g., root cause or gap analysis).
 - b. Organizational analysis (e.g., Strengths, Weaknesses, Opportunities and Threats analysis).
 - c. Surveys of stakeholders, learners, clinicians, and/ or educators.
 - d. Outcome data (e.g., from pilot testing; certification or licensure exams, previous simulation-based experiences; aggregate health care data; patient safety data).
 - e. Standards (e.g., certifying bodies, rules and regulations, practice manuals).
- viii. Construct measurable objectives that build upon the learner's foundational knowledge.
- ix. Build the simulation-based experience to align the modality with the objectives.
- x. Design a scenario, case, or activity to provide the context for the simulation-based experience.
- xi. Use various types of fidelity to create the required perception of realism.
- xii. Plan a learner-centered facilitative approach driven by the objectives, learners' knowledge and level of experience, and the expected outcomes.
- xiii. Create a prebriefing plan that includes preparation materials and briefing to guide participant success in the simulation-based experience.
- xiv. Create a debriefing or feedback session and/ or a guided reflection exercise to follow the simulation-based experience.
- xv. Develop a plan for evaluation of the learner and of the simulation-based experience.
- xvi. Pilot test simulation-based experiences before full implementation.

8.7 Scenario template

Title

- Title of the scenario
- Name of the Facilitator
- Date of the simulation session

Introduction & Learning Objectives

- Briefly introduce the scenario
- Define the learning objectives
- Explain why this scenario was chosen

Scenario Design & Development

- Description of the case
- Key considerations
- Challenges faced during scenario design and how they were addressed

Preparation & Setup

- Simulation environment and equipment used
- Role of standardised patients/manikins
- Any pre-briefing strategies or participant preparation

Delivering the Simulation

- Summary of how the session unfolded
- Observations of participant engagement and performance
- Any unexpected challenges and how they were managed
- Any surprising insights from the learners' perspectives

Personal Learning & Takeaways

- Summary of the overall experience
- What went well?
- What would they do differently next time?
- Any new insights about simulation-based learning?

Table 8. Template for Cardiac Arrest: Simulation Scenario

Category	Medical
Theme:	Cardiac Arrest
Learning objectives:	1. Identify, prioritize and manage ABCDE related problems 2. Recognize the sudden signs of cardiac arrest 3. Management of cardiac arrest as per the AHA protocol 4. Communication using closed loop when sharing critical information among the team members
Information for participants:	You (Medical officer/senior nurse) and junior nurse are at work in the emergency department, and you receive a man, brought there by his wife due to sudden chest pain. You perform the initial assessment, manage the case and call the consultant for the further management.
Action points: (critical events in scenario)	ABCDE assessment, recognition of cardiac arrest, high quality resuscitation as per the AHA protocol, appropriate airway management, closed loop communication, handover of critical information
Patient behavior: (for simulated patients or operators)	Normally dressed man, alert, oriented but is uncomfortable with severe chest pain, shortness of breath and sweating. Becomes unresponsive after 5 minutes. Will respond with correct treatment.

Events:	A 52-year-old man brought to the emergency department with the complaint of a crushing chest pain which radiates down his left arm complains of dizziness, nausea and shortness of breath. He reports he was climbing the stairs when he developed the chest pain. He is alert and oriented but appears uncomfortable. He has diaphoresis, shortness of breath, looks pale and is sweaty. History of hypertension (taking metoprolol) and dyslipidemia. He is a smoker for 11 years, a retired officer and has sedentary lifestyle. (additional information if the participants ask).	
Roles:	1 Consultant, 1 Medical Officer, 1 Senior Nurse, 1 Junior Nurse, 1 Observer, 1 standardized patient, 1 wife	
SIM info:	Type	Standardized patient with Little Anne QCPR or Nursing Anne Simulator.
	Dressing	Normal clothes
	Medical equipment	Relevant bed, iv setup, Resuscitation trolley, Crash cart, oxygen, bag and mask device, suction device, defibrillator, cardiac monitor, electrocardiograph machine, intubation equipment, suction, basic monitoring equipment (HR, Spo2, BP), patient file, admission document
	Medicine	Normal saline and other IV fluids, emergency drugs
Vitals	Airway	Open
	Breathing	RR 40b/min
	Circulation	HR 120/m, Blood pressure- 90/60 mm of Hg
	Disability	Unresponsive
	Exposure	Sweaty
Changes in progress:	At 0-5 min, Call for help Patient is in emergency room and now is unresponsive. Apply monitors and defibrillator pads. IV lines secured Vitals: HR-150/m, BP-80/50, RR-35, Saturation 94% in Room air At 5-10 min, HR-N/A, BP-N/A, RR- N/A, 80% and decreases without O₂ Perform a head –tilt chin-lift maneuver to open the airway Positioned on flat, hard surface for effective compression Give 30 chest compressions at 100-120 per minute Give 2 rescue breaths using bag valve mask High flow oxygen 15l/minute using bag valve equipment correctly Large bore cannula and give crystalloid fluids Continue CPR with 30 compressions to 2 breaths At 10-15 minutes Performs post-cardiac arrest care once revival of the normal heart rate and respiratory rate	

Keywords for debriefing:	Focus on learning objectives – Identify, prioritize and manage ABCDE related problems, Recognize the sudden signs of cardiac arrest, Management of cardiac arrest as per the AHA protocol, communication using closed loop when sharing critical information among the team members. How to you feel? What was successful, and what made it become a success? What went well in scenario? What would you change next time?
References:	• Brown DF, Jaffer FA, Baker JN, Gurol ME. Case 28-2013: A 52-Year-Old Man with Cardiac Arrest after an Acute Myocardial Infarction. <i>New England Journal of Medicine</i>. 2013 Sep 12;369(11):1047-54. • Travers AH, Rea TD, Bobrow BJ, Edelson DP, Berg RA, Sayre MR, Berg MD, Chameides L, O'Connor RE, Swor RA. Part 4: CPR overview: 2010 American Heart Association manuals for cardiopulmonary resuscitation and emergency cardiovascular care. <i>Circulation</i>. 2010 Nov 2;122(18_suppl_3):S676-84. • Pourmand A, Hill B, Yamane D, Kuhl E. Approach to cardiopulmonary resuscitation induced consciousness, an emergency medicine perspective. <i>I am J Emerg Med</i>. 2019;37(4):751-756. doi: 10.1016/j.ajem.2019.01.051 • Moon, S. H., Kim, J. W., Byun, J. H., Kim, S. H., Kim, K. N., Choi, J. Y., Jang, I. S., Lee, C. E., Yang, J. H., Kang, D. H., & Park, H. O. (2017). Case of a cardiac arrest patient who survived after extracorporeal cardiopulmonary resuscitation and 1.5 hours of resuscitation: A case report. <i>Medicine</i>, 96(47),e8646.doi.org/10.1097/MD.00000000000008646 • AHA 2025 : https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines/algorithms

8.8 Current trends in simulation-based methodology

- i. **Artificial Intelligence Integration:** AI holds immense potential to revolutionize healthcare simulation training through algorithms that can create adaptive learning environments to tailor case scenarios to individual learners based on their performance and knowledge gaps.
- ii. **Portable Simulation Solutions:** Mobile healthcare simulation labs and tablet-based simulation debriefing tools bring high-quality training solutions to diverse environments that include a wide variety of in-situ environments for emergency medicine, battlefield care, and hospitals.
- iii. **Advanced Haptic Feedback:** Haptic feedback technology offers tactile sensations that mimic real-life procedures to allow

students to ‘feel’ the subtleties of surgical interventions and diagnostic procedures. Enhanced haptic feedback in clinical and surgical simulation helps learners develop fine motor skills and a better comprehension of the force and technique required in clinical procedures.

- iv. **Competency Tracking Integration:** Competency tracking tools integrated into clinical simulation training programs enable real-time assessment and feedback on learner performance.
- v. **Big Data and Analytics:** The use of big data and analytics in healthcare simulation training provides valuable insights into student performance, curriculum efficacy, and training gaps. Schools can analyse large datasets to refine educational strategies, adopt best practices, and individualize learning experiences.

- vi. **Virtual and Augmented Reality:** Virtual Reality (VR) and Augmented Reality (AR) offer immersive and interactive training experiences. VR can simulate realistic clinical environments for procedural practice, whereas AR can overlay digital information onto real-world scenarios to enhance situational awareness and decision-making. These technologies enable the risk-free practice of complex and rare procedures.
- vii. **Cloud-Based Simulation:** Cloud-based clinical simulation platforms enable healthcare education programs to deliver scalable, flexible, and collaborative learning experiences.
- viii. **Surgical simulation:** refers to the use of models, simulators, virtual environments, and structured scenarios to replicate surgical procedures and perioperative care for training, assessment, and quality improvement—without risk to patients.

8.9 Translational simulation

Translational Simulation aims to directly improve patient care and healthcare systems, through diagnosing safety and performance issues and delivering simulation-based interventions.¹⁴ The term translational simulation describes healthcare simulation focused directly on improving patient care and healthcare systems, through diagnosing safety and performance issues and delivering simulation-based intervention, irrespective of the location, modality or content of the simulation. It offers a functional alignment with quality improvement activities in healthcare institutions, while encompassing those educational interventions targeting practice behaviour or patient outcomes.

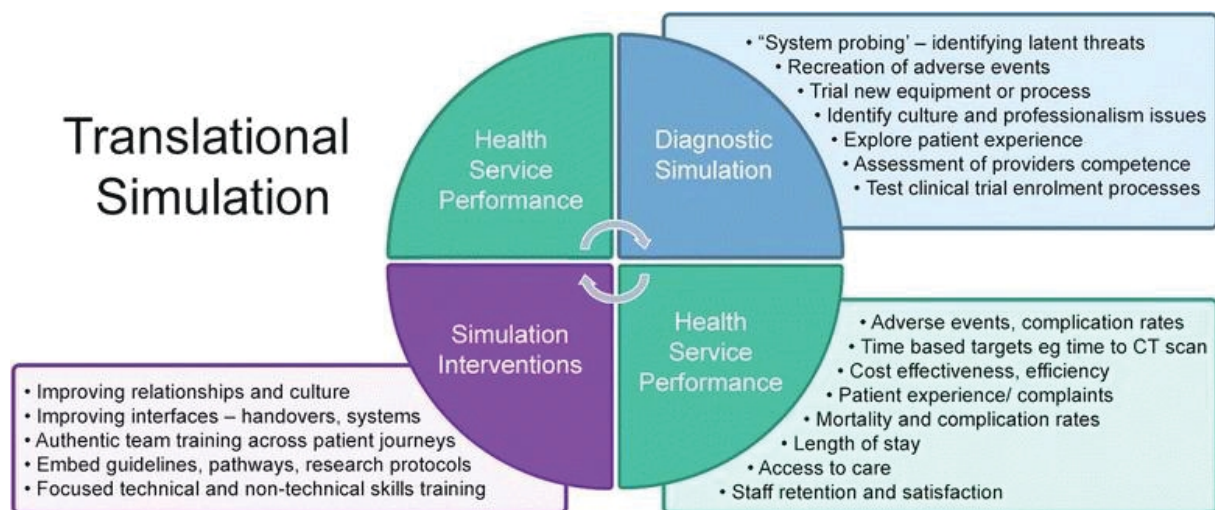


Figure 6. Translational simulation

8.10 Research in simulation

The goals of simulation-based research differ from training and evaluation. The ultimate goal of increasing knowledge and understanding to improve training, evaluation, and design of systems is the same. Necessary research may also address two fundamental areas of need.

One may ask, “Is the tool of simulation valid?”. A second question to be answered by necessary research is, “Is the tool of simulation useful?”. Answers to these fundamental questions will continue to be increasingly addressed within the research arena.¹⁵

9. Set-up and operationalization of simulation space and implementation

9.1 Design & layout

Design and layout of the simulation area, set-up or lab also contribute to how the participants learn.

The space needed for a simulation set-up depends on the specific needs of the organization or training institution. There is no single design that works for every setting. Instead, the clinical training sites should plan based on the needs of the site, clinical training packages being rolled out, participant load, educators, and learners, the resources available, and the need to support the training while meeting required standards.¹⁶ A simple and practical layout is designed to provide easy access to essential skills. All areas are arranged so that facilitators can easily observe learners.^{17–20}

The simulation lab or space should be designed to support a step-by-step learning process. Participants should first learn basic skills, then progress to more advanced skills, and eventually practice teamwork and patient care through simulation.

The size of the simulation set-up depends on the number of participants it needs to accommodate, both now and in the future. A lab can range from a small space to a very large space based on the need of the clinical training site, can typically range from 2000 sq.ft to anything above that. For a training load of 50-75 participants per day in the simulation lab, in general, would require about 6000 sq.ft area. While the required space varies for skills/ simulation corner to centre of excellence, the design can be adapted creatively by adjusting factors such as training schedules and group sizes.

The following points are key when planning the design and layout of the lab:

- i. The types of areas in the simulation set-up/ lab:
 - a. Skills practice area/ stations: There could be large space/ training area with multiple tables with manikins or standardized patients. This area can be planned to be modular/ flexible- i.e. a large area can be turned into multiple smaller trainings areas if required.
 - b. Simulated hospital areas in the simulation lab are designed with reference to the real hospital areas where the participants are subjected to clinical practice. E.g., Labor room; Outpatient dept; Operation Theatre; Wards; Infection Prevention Areas; Intensive care units for adults (obstetrics; cardiac etc.); neonates; pediatric patients; Emergency Room, among others. This would be decided by the goal- what would be taught in the simulation lab. In case there would be high fidelity manikins in any of these simulation rooms, the layout must include control room for that clinical area room.
 - c. Areas for debriefing: there must be sufficient areas for debriefing which are soundproof. For ensuring psychological safety, the debriefing must be done in an area where participants feel safe sharing their views and ideas without the fear of being heard or seen by someone from outside.
 - d. Storage area: A very important area to be factored into the layout is a large storage

- area for manikins; equipment; furniture; medical consumables.
- e. Meeting room and conference rooms: The design could also include audio-visual aids that would be used in simulation and be transmitted to a larger conference room when required.
 - f. Workspaces: for the Simulation Lab coordinator; faculty and support staff with tables and cupboards as required.
 - g. Pantry: that should be equipped with a water tap; Reverse Osmosis (RO) water purifier, water dispenser for hot or cold water and basic beverages like tea and coffee. It is highly recommended that the pantry, when inside of the skills & simulation lab) must not cater to anything else and should not allow for outside food inside the lab. This helps in preventing attracting pests and insects.
 - h. Reception area and lobby: for registering participants for simulation training/ sessions. The lobby would serve as the general waiting area for participants and guests.
 - i. Toilets: Adequate number of male and female toilets, based on number of participants at any given time in the lab, are an important thing to be included in the layout.
 - j. Fire exits/ lifts: Fire exits are a must-have in the skills and simulation lab as per the municipal requirements and is also a good practice in logistics. Lifts are recommended in case the skills and simulation lab are on a higher floor- keeping in mind elderly learners/ participants and guests who may not be able to take the stairs.
 - k. Security area: This should be outside the skills & simulation lab, with lockers where the learners keep their bags and valuables. This helps prevent any pilferage. It also makes the skills and simulation lab look neat and clean.
 - l. Area for shoe racks: This is a strong recommendation as participants will have to remove their shoes outside the lab. Removing shoes outside of the skills & simulation lab is recommended as most manikins gather dust easily. More the outside shoes if allowed into the lab- more the dust in the lab. Hence, this is a key step for maintaining a dust-free environment in the skills & simulation lab.
 - m. Air conditioning: Most manikins have an operating temperature between -15 degree to 40 degrees centigrade. The manikins would have problems including that of batteries automatically shutting down when the environmental temperatures are high. It is highly recommended that the simulation lab is air conditioned to provide manikins an optimum temperature at all times and to keep the lab dust-free. The storeroom must especially be temperature controlled to ensure long lasting of the skins of the manikins.
 - n. The clinical areas must have handwashing areas preferably with running water for simulation scenarios and including hand washing as an action.
 - o. The simulation rooms must also have control rooms with one-way-viewing glass for the simulation associate to control the manikins while being inside the control room. The simulation rooms representing clinical areas must have adequate light and ventilation.
 - p. Every debriefing area must have an AV aid (e.g., television/ LCD projector with screen) for video debriefing when required.
 - ii. Electric, internet and water connections for each space of the layout as per requirements
 - iii. Flooring of the spaces be tiled in clinical areas

- iv. Doors of the simulation labs should be large enough to allow a hospital bed to be wheeled in as in a hospital. This helps in preparing the rooms for multiple procedures/ scenarios.
- v. Adequate light as per each hospital area
- vi. Thermal regulation for all of the simulation lab (in form of air conditioning/ fans/ heaters etc.)
- vii. If recording (video recording of sessions with video debriefing) is being planned- the electrification, internet etc. are key to be considered.
- viii. Plan the furniture of the skills/ simulation corner, lab according to the requirements.

Table 9. Suggested space requirements for a simulation lab/ space and specifications

SN	Area/Room	Specifications
i.	Large Education Theater/ Training Hall	• Approx. 40 x 30 ft. • Group lectures, Interactive sessions, can also be used as skills training room
ii.	Skills Training Room	• Approx. 30 x 20 ft. • Multipurpose room that can be used for skills/task training and team training. Able to accommodate a group of 20-25 in groups of max. 6 people per skill station • Different Skills stations as per specific skills based on the curriculum
iii.	Skills/ simulation corner	• Approx. 36 sq.ft • For simple tasks training or simulation scenario nearby clinical area or within clinical area for in-situ simulation.
iv.	Simulation rooms (soundproof rooms with areas for debriefing within or with separate debriefing rooms). The simulation rooms could represent different hospital areas like labor room, in-patient ward, operation theatre, emergency room, intensive care unit etc. (based on the training to be conducted)	• Approx. 350 sq. ft each • Standard patient exam room; small simulation room • Individual simulation rooms/ modifiable rooms set-up to implement simulation sessions
v.	Simulation control room (sound-proof)	• 5 x 10 ft with one-way see-through glass into simulation room.
vi.	Storage room	• Sufficient space as it might include larger items like beds, full body manikins • Repair workspace
vii.	Meeting room and conference rooms	• Includes audio-visual aids that would be used in simulation and transmitted to larger conference rooms.
viii.	Office space	• Space for simulation director, administrative support, faculty and IT/technical should be considered

SN	Area/Room	Specifications
ix.	Pantry	- Equipped with water tap, water purifier, dispenser for hot and cold water. - Should not cater for anything besides water as no food will be allowed in the lab.
x.	Amenities / washroom/ front desk /waiting area/ area for shoe racks/fire exits/ lifts, air-conditioning	As per requirements
xi.	Toilets	Adequate number based on number of participants at any given time.
xii.	Rooms requirements	Electrical sockets /LAN/AV-PA system should be considered with ample storage space (cabinets),

Layout of the simulation must provide an environment that is as realistic as possible to the clinical environments that learners will ultimately work in. Sample Layouts are attached in the Annexes.

9.2 Participant load and space allocation

A simulation lab is designed to accommodate multiple participants. To ensure there is enough

space, the expected number of users should be estimated before determining the size of the lab. This includes considering the number of learners in each training group, how often they will use the lab, the number of hospital staff who will receive training and the frequency of their sessions, as well as the number and frequency of external participants using the lab.

Table 10. Suggested group size and facilitator to learner ratio ^{21–24}

Configuration	Max Participants	Facilitator: Learner
Single Skill/ simulation corner	Max 6-8 learners	1:2, 1:4, 1:8
Simulation room / 3 skills stations (rotating)/	2-3 learners per skills station (total 6-9 per batch), 6-8 participants in a simulation room	1:6-max 1:8 ratio
Session duration	45–60 min per skill station. Rotates group every hour. 60 min for simulation session	

9.3 Infection Prevention and Control & waste management

Waste management: Waste bins should be available throughout the simulation lab. It is recommended to have two bins at each station—one for general waste, such as packaging and wipes, and another for non-sharp clinical waste, such as simulated body fluids. Sharps containers are only required if real needles are used. Cleaning

should be carried out after every training session, with waste segregated according to the hospital's colour-coded infection prevention and control guidelines. Manikins should be cleaned after each learner and undergo a thorough cleaning every week. ^{25, 26}

Manikins: Low-fidelity manikins should be cleaned with 70% alcohol between learners. Removable airway components should be disinfected at the

end of the day using a 0.5% chlorine solution, following the recommended contact times of 30 seconds for alcohol and 10 minutes for chlorine. Alcohol-based hand sanitiser dispensers should be available at the entrance and exit of each training station.

9.4 Resource management

The main principle is to align the level of investment with the learning objectives, avoiding unnecessary technology for teaching basic skills.^{27–29}

The budget highly depends on the tier of the simulation setup chosen for development.

Broad budget heading would be:

1. Capital costs: equipment, facilities and space, IT and audiovisual infrastructure, furniture, safety and infection prevention and control measures.
2. Recurring costs: consumables and supplies, maintenance and service contracts, faculty development, staff salaries, and housekeeping.
3. Program related costs: replacement and reserve funds, research and innovation, and community engagement and outreach (applicable for tier 3 to 4).

9.5 Human Resource^{30–32}

Effective simulation operations rely on clear role definitions and appropriate staffing, which become more important as facility complexity increases. In all tiers, it is mandatory that a facilitator is present whenever learners are using the simulation lab. Simulation facilitators should also have the required skills to conduct effective simulation sessions.

All simulation staff can be grouped into three core functional categories:

1. Education: Facilitators, lead facilitators, mentors, trainers, and standardized patients (SPs) who are responsible for teaching, debriefing, and providing feedback.
2. Simulation associates and coordinators who handle setup, audiovisual systems, equipment maintenance, and cleaning, as well as ward in-charges and focal points.
3. Administration: Directors, SP coordinators, and administrative assistants who manage scheduling, quality assurance, budgeting, and policies, along with in-charges, heads of departments, and focal persons.

9.6 Lab utilization: inventory & calendaring^{33–35}

Simulation utilization is defined as the measurable value in terms of educational output, usage, impact generated by the simulation lab relative to its inputs through available space, equipment, personnel, consumables and budget. Hence, utility is closely related to the calendaring and lab inventory. Calendaring drives demand; inventory enables supply. The two functions are inseparable in simulation operations — a booking is only deliverable if the required resources are available and stocked.

Calendaring is crucial in smooth functioning of the simulation activities. Calendaring moves from informal/shared to centralized, rule-governed, and resource-verified as tier complexity increases. Calendaring example provided in the table below.

Table 11. Suggested Calendaring Process in Different Tiers

Tier	System	Booking Rule	Responsible
Skills/ Simulation corner	Shared institutional calendar (Outlook/Google) or physical whiteboard/ logbook	24-hour notice recommended; first-come, first-served unless curriculum-block reserved	Health care professional (Trainer), Incharge
Simulation room	Centralized digital calendar / logbook	Minimum 48-hour notice. Priority: training program > curriculum courses > regular sessions/ elective	Incharge, Head of Department or Simulation focal point
Simulation Lab	Centralized booking system, method with request form review to the focal point/ simulation associate Minimum 48-hour notice. Strict priority hierarchy. Booking confirmed only after Sim Ops specialist/ technician/ coordinator/ focal point		Simulation associate/ focal point/ coordinator
Centre of excellence	Centralized booking system, method with request form review to the focal point/ simulation associate Minimum 48-hour notice. Strict priority hierarchy. Booking confirmed only after Sim Ops specialist/ technician/ coordinator/ focal point		Simulation associate/ focal point/ coordinator

Inventory

Inventory is the backbone of session readiness: every booked scenario consumes specific consumables (gloves, airways, IV supplies, simulated meds) and requires functional equipment. A well-functioning system to restock

after every session, checked weekly, with recorded trigger at 25 – 50% depletion – prevent cancellation delays. Real time inventory linked to calendaring is essential to run smooth simulation activities.

Table 12. Example of Inventory Log Record Components

Category	Examples	Minimum Stock	Check Frequency
Manikins	CPR manikin, airway head	1 per station	Daily
Reusables	Laryngoscope, ETT, BVM mask, IV tubing	2 per station	Weekly
Consumables	Gloves, wipes, lubricant, tape	Enough for 20 sessions	Weekly
Cleaning	Alcohol, chlorine, paper towels	1 L each	Monthly
Google sheet, logbook, excel sheet record may be used.			

Utilization and Utility of simulation lab

Utility can be calculated by following formula. Utility can be operational or educational utility.

$$\text{EDUCATIONAL UTILITY} = \frac{\text{Learner-Hours Delivered}}{\text{Space} + \text{Personnel} + \text{Equipment} + \text{Consumables Cost}}$$

$$\text{OPERATIONAL UTILITY} = \frac{\text{Sessions Delivered} \times \text{Equipment Uptime (\%)}}{\text{Cancellations} + \text{Downtime} + \text{Idle Hours}}$$

Table 13. Simulation Utility/Utilization Matrix

Metric	Formula	What It Tells You
Space Utilization Rate	$(\text{Hours rooms in active use} \div \text{Total available hours}) \times 100$	Are rooms sitting empty?
Learner output	$\text{Number of learners} \times \text{Hours per session (aggregated weekly/monthly)}$	How much education is delivered?
Session Density	$\text{Number of sessions delivered} \div \text{Number of available session slots}$	Are you maximizing daily slots?
Cancellation Rate	$(\text{Cancelled sessions} \div \text{Total booked}) \times 100$	How reliable is the scheduling system?
Resource Intensity	$\text{Labor hours (tech + facilitator + ops)} \div \text{Learner-hours delivered}$	How efficient is delivery? Staffing cost per learner-hour
Cost per Learner Hour	$(\text{Total operating cost} \div \text{Total learner-hours})$	Overall cost-efficiency
Equipment Uptime	$(\text{Available hours} - \text{Downtime hours}) \div \text{Available hours} \times 100$	Equipment reliability
Scenario Yield	$\text{Number of scenarios delivered} \div \text{Number of scenarios in library}$	Is curriculum using what was developed?
High utility	Maximized learner-hours, minimized idle time and cancellations, reliable equipment, efficient staffing	

9.7 Quality control and monitoring framework^{36–38}

Quality Control (QC) and Monitoring ensure that simulation-based methodology is safe, effective, and reliable. The framework rests on four pillars: real-time monitoring (session readiness and safety), post-session documentation (what happened and what was used), periodic quality audits (are we meeting targets?), and continuous

improvement (correcting gaps and raising standards). The intensity of this framework scales with facility complexity — from basic visual checks and a simple logbook at the skills or simulation corner, to a fully integrated data-driven governance cycle with monthly review meetings and quarterly leadership reports at the Simulation Lab/ centre for excellence level.

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Annexes

Annex I. Application form for accreditation of simulation in new Clinical Training Sites

नयाँ क्लिनिकल प्रशिक्षण साइटमा सिमुलेशन प्रत्यायनको लागि आवेदन

मिति: _____

श्रीमान् निर्देशकज्यू
राष्ट्रिय स्वास्थ्य तालिम केन्द्र
टेकु, काठमाडौं

विषय: नयाँ क्लिनिकल प्रशिक्षण साइटमा सिमुलेशन प्रत्यायनको लागि आवेदन

महोदय,

उपर्युक्त सम्बन्धमा ले राष्ट्रिय स्वास्थ्य तालिम केन्द्रबाट क्लिनिकल तालिम साइटको मान्यताकालागि यो आवेदन बुझाउँदै छु।

उक्त तालिमहरूको प्रभावकारी कार्यान्वयनका लागि हाम्रो तालिम साइटलाई सिमुलेसनमा आधारित प्रत्यायनको लागि मान्यता प्रदान गरिदिनुहुन हार्दिक अनुरोध गर्दछौं। आवश्यक कागजातहरू यस आवेदनसँग संलग्न गरिएको छः

१. भरिएको स्व-मूल्यांकन फाराम
२. क्लिनिकल तालिम साइटमा सञ्चालन गर्न खोजिएका तालिमहरूको सूची
३. क्लिनिकल तालिम साइटका लागि न्यूनतम तालिम मापदण्ड अनुसारको चेकलिस्ट
४. सम्बन्धित तह (Tier) र क्लिनिकल तालिमका लागि आवश्यक उपकरण, सामग्री तथा अन्य स्रोतहरूको सूची
५. सम्बन्धित तह (Tier) तथा क्लिनिकल तालिमका लागि तालिम साइटमा संलग्न जनशक्तिको विवरण

सकारात्मक प्रतिक्रियाको अपेक्षासहित।

निवेदक

.....
(क्लिनिकल तालिम साइट)

सामान्य जानकारी	
संस्थाको/क्लिनिकल तालिम साइटको नाम:	
ठेगाना:	
आधिकारिक सम्पर्क विवरण:	
संस्थाको प्रकार:	☐ शैक्षिक संस्था ☐ सरकारी अस्पताल ☐ निजी अस्पताल ☐ गैरसरकारी संस्था (NGO) ☐ व्यावसायिक संस्था/समाज ☐ अन्य (कृपया उल्लेख गर्नुहोस्): _____ (कृपया संस्थाको दर्ता प्रमाणपत्रको प्रतिलिपि संलग्न गर्नुहोस्)
तालिम साइट तथा सञ्चालन गर्न चाहने तालिमको प्रकार	☐ संघीय केन्द्रीय अस्पताल ☐ प्रादेशिक अस्पताल ☐ स्थानीय तह अस्पताल /CEONC प्रसुति केन्द्र /BEONC केन्द्र सञ्चालन गर्न चाहने तालिमको प्रकार:
संस्थाको प्रमुखको नाम:	
संयोजक/फोकल व्यक्तिको नाम तथा पद:	
प्रस्तावित तह (Tier):	

* यसका साथै, Minimum Training Site Standards मा तोकिएका कागजात तथा सिफारिस पत्र सहित यो निवेदन पेश गरिने छ ।

**Annex II. Application form for accreditation of simulation in already
accredited Clinical Training Sites**

स्वीकृत भएका क्लिनिकल प्रशिक्षण साइटमा सिमुलेशन प्रत्यायनको लागि आवेदन फाराम

मिति: _____

श्रीमान् निर्देशकज्यू
राष्ट्रिय स्वास्थ्य तालिम केन्द्र
टेकु, काठमाडौं

विषय: स्वीकृत भएका क्लिनिकल प्रशिक्षण साइटमा सिमुलेशन प्रत्यायनको लागि आवेदन

महोदय,

उपर्युक्त सम्बन्धमा ले विभिन्न क्लिनिकल तालिम सञ्चालन गर्दै आएको छ र यस संस्थाले राष्ट्रिय स्वास्थ्य तालिम केन्द्रबाट मिति मा क्लिनिकल तालिम साइटको मान्यता प्राप्त गरेको छ ।

हामीले विभिन्न क्लिनिकल क्षेत्रमा सीप तथा सिमुलेसनमा आधारित तालिम सत्रहरू सञ्चालन गर्दै आएका छौं । उक्त तालिमहरूको प्रभावकारी कार्यान्वयनका लागि हाम्रो तालिम साइटलाई सिमुलेसनमा आधारित प्रत्यायनको लागि मान्यता प्रदान गरिदिनुहुन हार्दिक अनुरोध गर्दछौं । आवश्यक कागजातहरू यस आवेदनसँग संलग्न गरिएको छः

१. भरिएको स्व-मूल्यांकन फाराम
२. क्लिनिकल तालिम साइटमा सञ्चालन गरिएका तालिमहरूको सूची
३. क्लिनिकल तालिम साइटका लागि न्यूनतम तालिम मापदण्ड अनुसारको चेकलिस्ट
४. सम्बन्धित तह (Tier) र क्लिनिकल तालिमका लागि आवश्यक उपकरण, सामग्री तथा अन्य स्रोतहरूको सूची
५. सम्बन्धित तह (Tier) तथा क्लिनिकल तालिमका लागि तालिम साइटमा संलग्न जनशक्तिको विवरण

सकारात्मक प्रतिक्रियाको अपेक्षासहित ।

निवेदक

.....
(क्लिनिकल तालिम साइट)

सामान्य जानकारी																	
संस्थाको/क्लिनिकल तालिम साइटको नाम:																	
ठेगाना:																	
आधिकारिक सम्पर्क विवरण:																	
तालिम साइट स्थापना मिति:	<table border="1"> <tr> <td>Y</td><td>Y</td><td>Y</td><td>Y</td><td>M</td><td>M</td><td>D</td><td>D</td> </tr> </table> [AD] <table border="1"> <tr> <td>Y</td><td>Y</td><td>Y</td><td>Y</td><td>M</td><td>M</td><td>D</td><td>D</td> </tr> </table> [BS]	Y	Y	Y	Y	M	M	D	D	Y	Y	Y	Y	M	M	D	D
Y	Y	Y	Y	M	M	D	D										
Y	Y	Y	Y	M	M	D	D										
तालिम साइट मान्यता प्राप्त मिति:	<table border="1"> <tr> <td>Y</td><td>Y</td><td>Y</td><td>Y</td><td>M</td><td>M</td><td>D</td><td>D</td> </tr> </table> [AD] <table border="1"> <tr> <td>Y</td><td>Y</td><td>Y</td><td>Y</td><td>M</td><td>M</td><td>D</td><td>D</td> </tr> </table> [BS]	Y	Y	Y	Y	M	M	D	D	Y	Y	Y	Y	M	M	D	D
Y	Y	Y	Y	M	M	D	D										
Y	Y	Y	Y	M	M	D	D										
संस्थाको प्रकार:	☐ शैक्षिक संस्था ☐ सरकारी अस्पताल ☐ निजी अस्पताल ☐ गैरसरकारी संस्था (NGO) ☐ व्यावसायिक संस्था/समाज ☐ अन्य (कृपया उल्लेख गर्नुहोस): _____ (कृपया संस्थाको दर्ता प्रमाणपत्रको प्रतिलिपि संलग्न गर्नुहोस)																
तालिम साइट तथा सञ्चालन गरिने तालिमको प्रकार	☐ संघीय केन्द्रीय अस्पताल ☐ प्रादेशिक अस्पताल ☐ स्थानीय तह अस्पताल / CEONC प्रसुति केन्द्र / BEONC केन्द्र सञ्चालन गरिने तालिमको प्रकार:																
गत आर्थिक वर्षमा सञ्चालन गरिएका तालिम तथा सहभागी संख्या:																	

तालिम साइट आबद्धता:	☐ राष्ट्रिय स्वास्थ्य तालिम केन्द्र (NHTC) ☐ प्रादेशिक स्वास्थ्य तालिम केन्द्र (PHTC) ☐ विश्वविद्यालय/शैक्षिक संस्था कृपया विश्वविद्यालय/शैक्षिक संस्थाको नाम उल्लेख गर्नुहोस्: _____ ☐ अन्य, कृपया उल्लेख गर्नुहोस्: _____ (कृपया आबद्धताको प्रमाण संलग्न गर्नुहोस्)
संस्थाको प्रमुखको नाम:	
संयोजक/फोकल व्यक्तिको नाम तथा पद:	
प्रस्तावित तह (Tier):	

Annex III. Self-assessment tools for Tier 1, 2, 3 and 4

Tier 1 – Skills/ simulation corner– Scoring Sheet

Instructions for scoring

1. Scoring each item: Review each criterion and mark Yes (1) if it is met or No (0) if it is not met. Add brief notes or evidence where relevant.
2. Critical elements: All criteria marked as critical must be met. If any critical element is scored No (0), the site will not qualify for full accreditation, regardless of the total score, until corrective action is completed.
3. Domain score calculation: For each domain, add all Yes (1) scores, divide by the total number of criteria in that domain, and multiply by the domain weight to obtain the weighted domain score.
4. Final score and accreditation status: Add the weighted scores from all five domains to obtain the final percentage score. Interpret the result with the critical elements rule: $\geq 80\%$ and all critical elements met = Accredited; 60–79% and all critical elements met = Provisionally accredited; $< 60\%$ or any unmet critical element = Not accredited or corrective action required before accreditation.

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
1.1.1.	Infrastructure & Environment (15%)	Space: Designated skills/simulation corner available and accessible near or within clinical area*			
1.1.2.		Space: more than 30 sq. ft, 5 sq.m (5-15 sq.m) Adequate space for at least 6-8 participant			
1.1.3		Layout: resembling clinical environment with job aids, checklists, equipment displayed			
1.1.4		Seating arrangement or standing space for small group practice or debriefing*			
1.1.5		Lighting, Ventilation, clean and adequate safety from physical hazards*			
1.1.6		Storage: available for simulators, equipment and supplies			
1.1.7		Power supply: available (backup preferred)			
1.1.8		Relevant furniture as per the set-up: procedure table or bed, chairs			

1.2.1	Equipment & Materials (20%)	Equipment, basic manikins and supplies, for specific training as per Minimum Training site standards, available and functional*			
1.2.2		Required equipment adequate as per the participant load, at least one set each as per the MTSS (max. 1:8 ratio)			
1.2.3		Standards job aids, protocols, checklists, guidelines, scenarios (at least one each)			
1.2.4		Equipment inventory maintained			
1.2.5		Scenario scripts and checklists available			
1.2.6		Equipment and consumables supply plan and maintenance			
1.3.1	Human Resources (25%)	At least 1 trained trainer for respective training (MTSS)*			
1.3.2		Facilitators trained in different skills and simulation modalities- at least one			
1.3.3		Evidence of facilitator training/ mentoring record			
1.3.4		Supportive/ technical staff available as per needs- at least one			
1.3.5		Regular refresher training for facilitators and trainers			
1.3.6		Defined focal person for simulation/ simulation lab associate/ coordinator			
1.4.1	Training System & Delivery (25%)	Structured training schedule/ calendar available*			
1.4.2		Training aligned with national programs (SHP/SBA, BEmONC, CEmONC, BLS, BEC)			
1.4.3		Use of standardized simulation scenarios			
1.4.4		Structured session flow (brief–simulate–debrief)			
1.4.5		Different simulation modalities: hybrid simulation, standardized patient, manikin based, interprofessional team-based training			
1.4.6		Regular sessions: At least 4 skills/ simulation sessions conducted / year			

1.4.7		Use of competency-based checklists for skills practice and assessments as per the need			
1.4.8		Training plan to support quality improvement			
1.4.9		Documentation of training, practice sessions and participant attendance			
1.5.1	Monitoring, QI & Governance (15%)	Simulation Focal person identified*			
1.5.2		Dedicated budget for simulation: basic operations, consumables			
1.5.3		Quarterly review: operational plan, Participant feedback on training and trainers collected, training record, Clinical outcomes, review of action plan and follow up, utilization			
1.5.4		Implemented improvement plan based on findings			
1.5.5		Implemented learning management system: skills tracking for relevant training, participant scores, applications			

* Indicates a critical criterion. All critical criteria must be met to be eligible for accreditation.

Critical criteria (All critical items must be scored 1 for score to be calculated)		
	Self-assessment	External assessment
Number of Critical criteria	7	7
Number of Critical elements scored as 1		
Score calculation and accreditation outcome (Fill only if all critical items scored as 1)		

SN	Domain	Raw Score Self-assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X1)	Raw Score External assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X2)	Total obtainable score (Y)	Domain weight (Z)	Weighted score Self-assessment (X1/Y)*Z	Weighted score External assessment (X2/Y)*Z
1	Infrastructure & Environment			8	15	(A)	(A)
2	Equipment & Materials			6	20	(B)	(B)
3	Human Resources			6	25	(C)	(C)
4	Training System & Delivery			9	25	(D)	(D)
5	Monitoring, QI & Governance			5	15	(E)	(E)
Total weighted percentage obtained						A+B+C +D+E	A+B+C +D+E
Accreditation Outcome ☐ Accredited ☐ Provisionally Accredited ☐ Not Accredited							

Self-assessment completed by:

Date:

External assessment completed by:

Date:

Tier 2 – Simulation room– Scoring Sheet

Instructions for scoring

1. Scoring each item: Review each criterion and mark Yes (1) if it is met or No (0) if it is not met. Add brief notes or evidence where relevant.
2. Critical elements: All criteria marked as critical must be met. If any critical element is scored No (0), the site will not qualify for full accreditation, regardless of the total score, until corrective action is completed.
3. Domain score calculation: For each domain, add all Yes (1) scores, divide by the total number of criteria in that domain, and multiply by the domain weight to obtain the weighted domain score.
4. Final score and accreditation status: Add the weighted scores from all five domains to obtain the final percentage score. Interpret the result with the critical elements rule: $\geq 80\%$ and all critical elements met = Accredited; 60–79% and all critical elements met = Provisionally accredited; $< 60\%$ or any unmet critical element = Not accredited or corrective action required before accreditation.

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
2.1.1	Infrastructure & Environment (15%)	Space: Designated simulation room available and accessible preferably near the clinical area*			
2.1.2		Space: approx. more than 300 sq.ft/ 30 sq.m per room, Adequate space for at least 6-8 participants, facilitators and observers			
2.1.3		Layout: resembling multipurpose clinical room layout with job aids, checklists, equipment displayed applicable for training conducted			
2.1.4		Seating with briefing and debriefing space*			
2.1.5		Lighting, Ventilation, clean and adequate safety from physical hazards*			
2.1.6		Storage: available for simulators, equipment and supplies			
2.1.7		Power supply: available (backup preferred)			
2.1.8		Relevant furniture as per the set-up: procedure table or bed, chairs			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
2.2.1	Equipment & Materials (20%)	Equipment, moderate fidelity manikins and supplies, for specific training as per Minimum Training site standards, available and functional*			
2.2.2		Required equipment adequate as per the participant load, 1:8 ratio to the participant, more than or equal to 1 sets as per MTSS requirement			
2.2.3		Standards job aids, protocols, checklists, guidelines, scenarios (at least one each)			
2.2.4		Equipment inventory maintained			
2.2.5		Scenario scripts and checklists available			
2.2.6		Equipment and consumables supply plan and maintenance			
2.3.1	Human Resources (25%)	At least 2 trainers for respective training (MTSS)*			
2.3.2		Facilitators trained in different skills and simulation modalities-one or more*			
2.3.3		Evidence of facilitator training/ mentoring record			
2.3.4		Supportive/ technical staff available as per needs- at least one			
2.3.5		Regular refresher training for facilitators and trainers			
2.3.6		Defined focal person for simulation/ simulation lab associate/ coordinator*			
2.4.1		Structured training schedule/ calendar available*			
2.4.2		Training aligned with national programs (SHP/SBA, BEmONC, CEONC, BLS, BEC, PEC, Primary burn care)			
2.4.3		Use of standardized simulation scenarios			
2.4.4		Structured session flow (brief–simulate–debrief)			
2.4.5		Different simulation modalities: hybrid simulation, standardized patient, manikin based, interprofessional team-based training			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
2.4.6		Regular sessions: At least 6 skills/ simulation sessions conducted / year			
2.4.7		Use of competency-based checklists for skills practice and assessments as per the need			
2.4.8		Training plan to support and linkage with quality improvement linkage and indicators			
2.4.9		Documentation of training, practice sessions and participant attendance			
2.5.1	Monitoring, QI & Governance (15%)	Simulation focal person/ coordination team formed*			
2.5.2		Dedicated budget for simulation: basic operations, consumables			
2.5.3		Quarterly review: operational plan, Participant feedback on training and trainers collected, training record, Clinical outcomes, review of action plan and follow up, utilization			
2.5.4		Implemented improvement/ action plan as per review or assessment			
2.5.5		Implemented learning management system: skills tracking for relevant training, participant scores, applications			

* Indicates a critical criterion. All critical criteria must be met to be eligible for accreditation.

Critical criteria (All critical items must be scored 1 for score to be calculated)		
	Self-assessment	External assessment
Number of Critical criteria	9	9
Number of Critical elements scored as 1		
Score calculation and accreditation outcome (Fill only if all critical items scored as 1)		

SN	Domain	Raw Score Self-assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X1)	Raw Score External assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X2)	Total obtainable score (Y)	Domain weight (Z)	Weighted score Self-assessment (X1/Y) * Z	Weighted score External assessment (X2/Y) * Z
1	Infrastructure & Environment			8	15	(A)	(A)
2	Equipment & Materials			6	20	(B)	(B)
3	Human Resources			6	25	(C)	(C)
4	Training System & Delivery			9	25	(D)	(D)
5	Monitoring, QI & Governance			5	15	(E)	(E)
Total weighted percentage obtained						A + B + C + D + E	A + B + C + D + E
Accreditation Outcome ☐ Accredited ☐ Provisionally Accredited ☐ Not Accredited							

Self-assessment completed by:

Date:

External assessment completed by:

Date:

Tier 3 – Simulation Lab– Scoring Sheet

Instructions for scoring

1. Scoring each item: Review each criterion and mark Yes (1) if it is met or No (0) if it is not met. Add brief notes or evidence where relevant.
2. Critical elements: All criteria marked as critical must be met. If any critical element is scored No (0), the site will not qualify for full accreditation, regardless of the total score, until corrective action is completed.
3. Domain score calculation: For each domain, add all Yes (1) scores, divide by the total number of criteria in that domain, and multiply by the domain weight to obtain the weighted domain score.
4. Final score and accreditation status: Add the weighted scores from all five domains to obtain the final percentage score. Interpret the result with the critical elements rule: $\geq 80\%$ and all critical elements met = Accredited; 60–79% and all critical elements met = Provisionally accredited; $< 60\%$ or any unmet critical element = Not accredited or corrective action required before accreditation.

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
3.1.1	Infrastructure & Environment (15%)	Space: Designated multiple/ multi specialty simulation, skills and large class rooms available and accessible preferably near the clinical area/building.*			
3.1.2		Space: approx. more than 300 sq.ft/ 30 sq.m per room, Adequate space for at least 6-8 participants, facilitators and observers, in total preferably more than 1000-1500 sq.ft			
3.1.3		Layout: resembling clinical rooms layout with job aids, checklists, equipment displayed applicable for types of training conducted, pantry, changing room*			
3.1.4		Seating with briefing and debriefing space in the rooms or separate debriefing space*			
3.1.5		Lighting, Ventilation, clean and adequate safety from physical hazards*			
3.1.6		Storage: available for simulators, equipment and supplies			
3.1.7		Power supply: available (backup preferred)			
3.1.8		Relevant furniture as per the set-up: procedure table or bed, chairs			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
3.2.1	Equipment & Materials (20%)	Equipment, moderate fidelity manikins and supplies, for specific training as per Minimum Training site standards, available and functional*			
3.2.2		Required equipment adequate as per the participant load, 1:8 ratio to the participant, at least 2 sets as per MTSS requirement			
3.2.3		Standards job aids, protocols, checklists, guidelines, scenarios (at least one each)			
3.2.4		Equipment inventory maintained			
3.2.5		Scenario scripts and checklists available			
3.2.6		Equipment and consumables supply plan and maintenance			
3.3.1	Human Resources (25%)	More than 2 trainers for respective training (MTSS)*			
3.3.2		Facilitators trained in different skills and simulation modalities-at least 2*			
3.3.3		Evidence of facilitator training/mentoring record			
3.3.4		Supportive/ technical staff available as per needs- at least one			
3.3.5		Regular refresher training for facilitators and trainers			
3.3.6		Defined focal person for simulation/ simulation lab associate/ coordinator*			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
3.4.1	Training System & Delivery (25%)	Structured training schedule/ calendar available with slots for multidisciplinary training*			
3.4.2		Training aligned with national programs (SHP/SBA, BEmONC, CEONC, BLS, BEC, PEC, Primary burn care)*			
3.4.3		Use of standardized simulation scenarios			
3.4.4		Structured session flow (brief–simulate–debrief)			
3.4.5		Different simulation modalities: hybrid simulation, standardized patient, manikin based, interprofessional team-based training			
3.4.6		Regular sessions: At least once a month skills or simulation sessions conducted for in-house health care professionals besides the training*			
3.4.7		Use of competency-based checklists for skills practice and assessments as per the need*			
3.4.8		Training plan to support quality improvement			
3.4.9		Documentation of training, practice sessions and participant attendance			
3.5.1	Monitoring, QI, Governance and resource management (15%)	Simulation committee formed with organogram*			
3.5.2		Dedicated budget for simulation: basic operations, consumables*			
3.5.3		Quarterly review: operational plan, Participant feedback on training and trainers collected, training record, Clinical outcomes, review of action plan and follow up, utilization*			
3.5.4		Implemented improvement/ action plan as per review or assessment			
3.5.5		Implemented learning management system: skills tracking for relevant training, participant scores, applications			

* Indicates a critical criterion. All critical criteria must be met to be eligible for accreditation.

Critical criteria (All critical items must be scored 1 for score to be calculated)		
	Self-assessment	External assessment
Number of Critical criteria	15	15
Number of Critical elements scored as 1		
Score calculation and accreditation outcome (Fill only if all critical items scored as 1)		

SN	Domain	Raw Score Self-assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X1)	Raw Score External assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X2)	Total obtainable score (Y)	Domain weight (Z)	Weighted score Self-assessment (X1/Y) * Z	Weighted score External assessment (X2/Y) * Z
1	Infrastructure & Environment			8	15	(A)	(A)
2	Equipment & Materials			6	20	(B)	(B)
3	Human Resources			6	25	(C)	(C)
4	Training System & Delivery			9	25	(D)	(D)
5	Monitoring, QI & Governance			5	15	(E)	(E)
Total weighted percentage obtained						A + B + C + D + E	A + B + C + D + E
Accreditation Outcome							
☐ Accredited ☐ Provisionally Accredited ☐ Not Accredited							

Self-assessment completed by:

Date:

External assessment completed by:

Date:

Tier 4 – Centre of excellence– Scoring Sheet

Instructions for scoring

1. Scoring each item: Review each criterion and mark Yes (1) if it is met or No (0) if it is not met. Add brief notes or evidence where relevant.
2. Critical elements: All criteria marked as critical must be met. If any critical element is scored No (0), the site will not qualify for full accreditation, regardless of the total score, until corrective action is completed.
3. Domain score calculation: For each domain, add all Yes (1) scores, divide by the total number of criteria in that domain, and multiply by the domain weight to obtain the weighted domain score.
4. Final score and accreditation status: Add the weighted scores from all five domains to obtain the final percentage score. Interpret the result with the critical elements rule: $\geq 80\%$ and all critical elements met = Accredited; 60–79% and all critical elements met = Provisionally accredited; $< 60\%$ or any unmet critical element = Not accredited or corrective action required before accreditation.

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
4.1.1	Infrastructure & Environment (15%)	Space: Designated multiple/ multi-specialty, skills, specialized simulation, large education theatre available and accessible*			
4.1.2		Space: approx. more than 300 sq.ft/ 30 sq.m per room, Adequate space for at least 6-8 participants in room, facilitators and observers, in total preferably more than 2000 sq.ft*			
4.1.3		Layout: advanced simulation set-up, specialty simulation rooms resembling clinical environment with job aids, checklists, equipment displayed applicable for types of training conducted, pantry, changing room, administrative space*			
4.1.4		Seating with briefing and debriefing space in the rooms or separate debriefing space*			
4.1.5		Lighting, Ventilation, clean and adequate safety from physical hazards*			
4.1.6		Storage: available for simulators, equipment and supplies*			
4.1.7		Power supply: available (backup preferred)			
4.1.8		Relevant furniture as per the set-up: procedure table or bed, chairs			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
4.2.1	Equipment & Materials (20%)	Equipment, moderate to high fidelity manikins and supplies, for specific training as per Minimum Training site standards, available and functional*			
4.2.2		Required equipment adequate as per the participant load, 1:8 ratio to the participant, more than 2 sets as per MTSS requirement*			
4.2.3		Standards job aids, protocols, checklists, guidelines, scenarios (more than one)			
4.2.4		Equipment inventory maintained*			
4.2.5		Scenario scripts and checklists available			
4.2.6		Equipment and consumables supply plan and maintenance			
4.3.1	Human Resources (25%)	More than 2 trainers, master trainers, for respective training (MTSS)*			
4.3.2		Facilitators trained in different skills and simulation modalities-more than 2*			
4.3.3		Evidence of facilitator training/mentoring record			
4.3.4		Supportive/ technical staff available as per needs- one or more			
4.3.5		Regular refresher training for facilitators and trainers			
4.3.6		Defined team with focal person for simulation/ simulation lab associate/ coordinator, chief*			

SN	Domain	Criteria	Self-assessment (Yes-1/ No-0)	External assessment (Yes-1/ No-0)	Notes
4.4.1	Training System & Delivery (25%)	Structured training schedule/ calendar available with slots for multidisciplinary training*			
4.4.2		Training aligned with national programs (SHP/SBA, BEmONC, CEONC, BLS, BEC, PEC, Primary burn care) and support in curricular development*			
4.4.3		Package with standardized simulation scenarios			
4.4.4		Structured session flow (brief–simulate–debrief) *			
4.4.5		Different simulation modalities: hybrid simulation, standardized patient, manikin based, interprofessional team-based training*			
4.4.6		Regular sessions: At least twice a month skills or simulation sessions conducted for in-house health care professionals besides the training*			
4.4.7		Use of competency-based checklists for skills practice and assessments as per the need			
4.4.8		Training plan to support quality improvement			
4.4.9		Documentation of training, practice sessions and participant attendance*			
4.5.1	Monitoring, QI, Governance and resource management (15%)	Simulation committee formed with organogram*			
4.5.2		Dedicated budget for simulation: basic operations, consumables*			
4.5.3		Quarterly review: operational plan, Participant feedback on training and trainers collected, training record, Clinical outcomes, review of action plan and follow up, utilization*			
4.5.4		Implemented improvement plan based on review and plan			
4.5.5		Implemented learning management system: skills tracking for relevant training, participant scores, applications, Audio visual, digital tools*			

* Indicates a critical criterion. All critical criteria must be met to be eligible for accreditation.

Critical criteria (All critical items must be scored 1 for score to be calculated)		
	Self-assessment	External assessment
Number of Critical criteria	22	22
Number of Critical elements scored as 1		
Score calculation and accreditation outcome (Fill only if all critical items scored as 1)		

SN	Domain	Raw Score Self-assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X1)	Raw Score External assessment (Sum of score obtained in the domain, each item in the domain scored 1) (X2)	Total obtainable score (Y)	Domain weight (Z)	Weighted score Self-assessment (X1/Y) * Z	Weighted score External assessment (X2/Y) * Z
1	Infrastructure & Environment			8	15	(A)	(A)
2	Equipment & Materials			6	20	(B)	(B)
3	Human Resources			6	25	(C)	(C)
4	Training System & Delivery			9	25	(D)	(D)
5	Monitoring, QI & Governance			5	15	(E)	(E)
Total weighted percentage obtained						A + B + C + D + E	A + B + C + D + E
Accreditation Outcome							
☐ Accredited ☐ Provisionally Accredited ☐ Not Accredited							

Self-assessment completed by:

Date:

External assessment completed by:

Date:

Annex IV. Accreditation Certificate



Simulation Accreditation Certificate for Clinical Training Site

(as part of Minimum Training Site Standards)

This is to certify that

located at _____, _____, _____, Nepal
(District) (Municipality) (Province)

has successfully met the standards and requirements established by the National Health Training Center (NHTC) for the provision of Simulation Based Education and Training.

Tier: _____

Certificate Number:

Accreditation :

Issue Date

Valid Till Date

National Health Training Center,
Teku, Kathmandu,
Ministry of Health and Food Safety
Nepal.



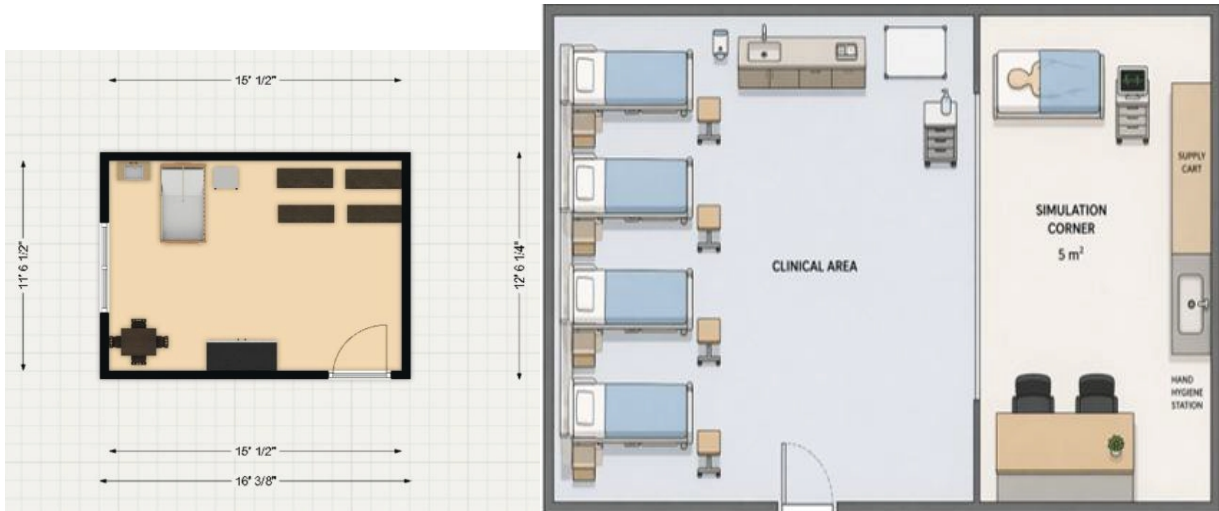
Stamp

Annex V. Action plan for follow up

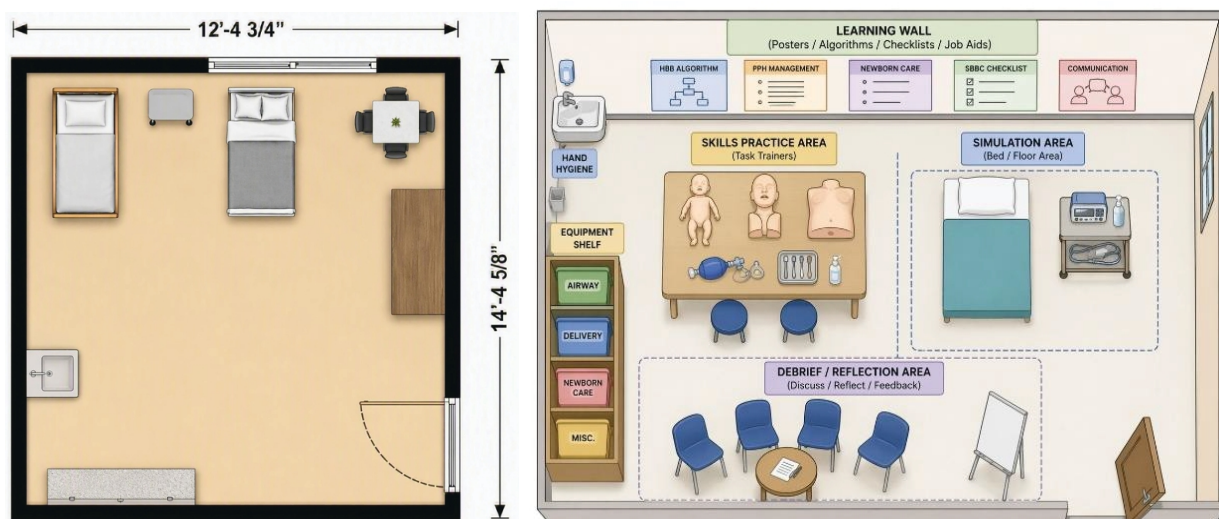
S.N.	Prioritized Area	Action Step to be taken	Person Responsible	Time Frame	Tentative Cost	Types of Support	
						Technical	Budgetary
1							
2							
3							
4							
5							
6							

Annex VI. Sample Layouts for Tier 1, 2, 3 and 4

Sample Layout for Tier 1 Skill/ Simulation corner



Sample Layout for Tier 2 Simulation room



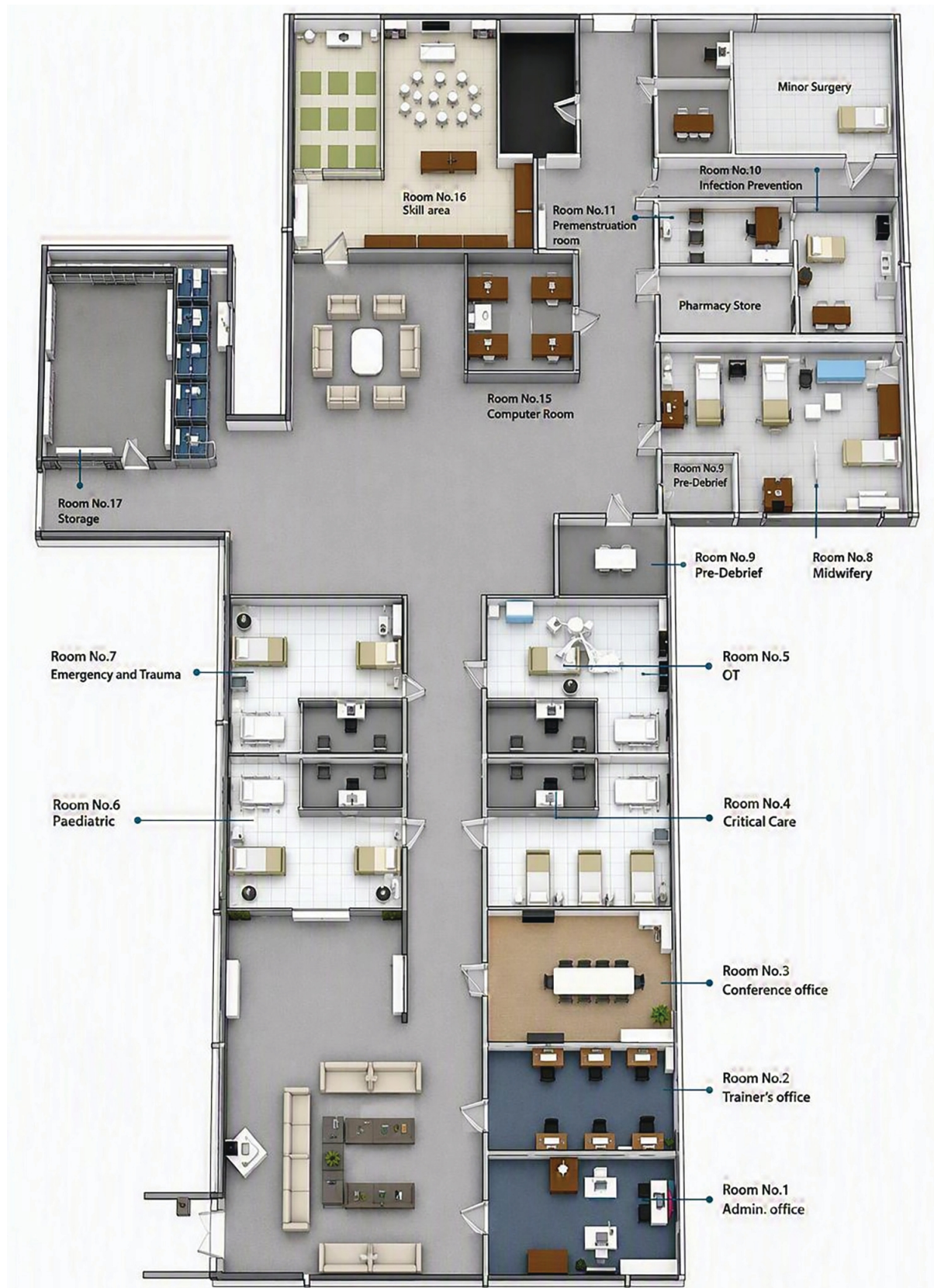
Sample Layout for Tier 3 Simulation Lab

Designed for midwifery simulation lab (The total area: 2131 sq.ft)



Sample Layout for Tier 4 Centre of excellence

Layout of interprofessional simulation lab (The total area = 13,500 sq.ft.)



Annex VII. Guidelines for participant responsibilities in simulation area

The simulation lab/ area is an extension of your clinical and didactic training program- pre-service or in-service. Therefore, all the same requirements for maintaining professional behaviours in both clinical and academic settings apply (i.e. dress and behavior, etc.).

- a) No food or drink– may cause damage to equipment
- b) No children - risk of injury from equipment
- c) No cell phones during testing or in student work areas (turn phones off)
- d) Learners are required to always wear their student ID while in the lab and follow the dress code of the clinical training site.
- e) Respect lab equipment at all times.
- f) Requirement: Start a Portfolio at the beginning of your nursing program – Organize all skills lab related information (i.e. procedure sheets, skills check off forms, notes). These materials are utilized each semester. Place a copy of your BLS card, any certifications you may have. While these are not a part of the Nursing program, these highlight your previous life experience and should be included in your professional portfolio. This will be checked periodically and is for a grade.
- g) Review all skills lab policies and procedures
 - i. Scheduling
 - ii. No call no show
 - iii. Skills testing (checkoffs)
 - iv. Remediation policy
 - v. Competency testing: returning learners
- h) Review and check lab schedules for open and closed times (posted outside of lab area)
- i) Sign in and out of the lab at all times for both practice and testing. Book is located inside skills lab by front door.
- j) Leave coats, book bags, valuables in your locker. Do not put in practice or testing areas.
- k) Review the course syllabus for due dates and late assignment policies. Failure to meet deadlines – may result in failure to meet course objectives.
- l) Sign up for all testing and practice. Time slots are on a first-come first-serve basis. Sign up times are usually posted for the entire semester. Make sure that you have signed up for all check – offs and lab requirements. Review all skills guidelines for each check-off.
- m) Skills lab resource manuals/reference materials are available for reference. Please do not remove from lab.
- n) Practice/testing areas: Follow directions/signs for use of lab space and equipment. Ask for directions and for location of practice or testing equipment.

- o) Learners may be assigned equipment for their own use during the semester for certain classes. If you are assigned equipment from the skills lab, it is your responsibility to keep this equipment (i.e. cath kit or IV tubing) intact and to bring it with you to practice.
- p) If at any time your equipment becomes faulty, please return it to the lab for disposal and for replacement.
- q) Designated equipment & supply practice carts and/or cupboards are available. All equipment and supplies for practice are to be reused unless otherwise instructed. Please Do not access other areas unless instructed to do so.
- r) Lab Resources: Space and equipment (manikins, simulators, IV pumps) are limited during high usage times, i.e. right before and during testing times. Access is on a first-come, first-served basis. Consider using off times to practice. The highest demand for use of space and equipment is right after class.
- s) Sharing of resources (space & supplies) when practicing may be necessary. Four – six learners per bed/manikin is acceptable. Working in groups is also beneficial for learning.
- t) Manikins:
 - i. Use gloves when handling all manikins and parts.
 - ii. Do not move manikins or manikin parts without the help of faculty.
 - iii. Do not use betadine on manikins. Use soap or lubricant is permitted for tubes.
 - iv. Do not use inked labels for dressings on manikins as these will permanently tattoo the manikins.
 - v. Do not use ink pens near the manikins as these will permanently tattoo the manikins.
 - vi. Ask for assistance to use simulation units (BP, assessments)
 - vii. Use beds for practice and testing purposes only.
- u) Individuals role playing as patients are to remove their shoes when lying on the beds.
- v) Report any malfunctioning, unsafe, or damaged equipment to faculty.
- w) New equipment will be issued for most checkoffs. If you are returning for a repeat check-off, you may not be using new equipment.
- x) If you are aware that you have a latex allergy, or suspect that you do, it is your responsibility to notify skills lab faculty. Non-latex gloves and equipment is available upon request.
- y) Lastly, ensure your workstation has been cleaned and is tidy after use and prior to leaving the area.

Annex VIII. Responsibilities of a simulation lab focal point/associate/coordinator

The Simulation Lab Coordinator serves as the main point of contact for all activities conducted in the simulation lab. Their key responsibilities include:

1. Acting as the custodian of teaching and learning resources, including manikins, and ensuring their proper maintenance and functionality.
2. Ensuring that training sessions are conducted according to the approved training plan or schedule.
3. Overseeing the maintenance and proper upkeep of all equipment and manikins.
4. Ensuring the quality of training and compliance with established training guidelines.
5. Maintaining relevant databases, including procurement records, training schedules, trainee information, and collaborations with partners or clinical training sites.
6. Providing a supportive environment for trainees and trainers by ensuring adequate facilities, continuous supply availability, daily operational needs, and proper lab setup to support high-quality training.

Annex IX. Responsibilities of a faculty/trainer during simulation day

Trainers are responsible for understanding the simulation scenarios, skills sessions, or tabletop activities assigned to them so they can effectively facilitate learning and respond to learners' questions.

1. Trainer responsibilities mainly include facilitating simulation scenarios in the simulation lab but may also involve teaching psychomotor skills and conducting tabletop activities.
2. Faculty are encouraged to meet with the Simulation Coordinator/ focal point before their scheduled sessions if they require additional support or practice in delivering simulation activities.
3. Faculty should arrive 15–30 minutes before the session to prepare the assigned simulation scenarios and equipment.
4. Faculty should regularly provide feedback to simulation lab staff to support quality assurance and continuous improvement.
5. Simulation schedules and learning resources should be made available through a shared platform, such as a website or mobile application. At the start of each semester, the master schedule should be posted, showing the simulation dates for each lab section.
6. At least two weeks before the first scheduled simulation session, faculty should be able to access the daily schedules and teaching materials for their assigned simulation scenarios, skills sessions, or tabletop activities in the relevant course folder.
7. Printed copies of the daily schedule, simulation materials, and learner performance evaluation forms should be available on the day of the simulation session.

Annex X: Standard Operating Procedures

Standard Operating Procedures (SOPs) ensure consistency, safety, equipment longevity, and educational quality across all simulation activities. The complexity of SOPs increases with the tier level, but core principles remain constant: safety first, clean between users, document everything.

SOP Annex 1: Equipment Management and Maintenance

Purpose: To ensure all simulation equipment and consumables are available, functional, safe, well-maintained, and ready for competency-based learning and assessment.

Scope: Applies to all simulation equipment, task trainers, mannequins, audiovisual tools, clinical devices used for training, and related consumables.

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Inventory and categorization	Maintain an updated inventory of all mannequins, simulators, task trainers, clinical equipment, audiovisual tools, consumables, and spare parts. Items should be categorized by program, skill area, risk level, and location.	Simulation lab coordinator / store focal person/ focal point/ training focal person	Master inventory register; asset tags; purchase/ donation records; location list	Quarterly; 100% equipment tagged and listed or as per the need.
Functional readiness check	Conduct pre-session and post-session checks using a standard checklist to confirm functionality, cleanliness, accessories, consumables, battery status, and availability of required scenario materials.	Facilitator / simulation associate/ focal person	Pre/post session checklist; issue log; sign-off sheet	Every session; no session begins without readiness sign-off
Preventive maintenance	Prepare and follow a maintenance calendar for high-use simulators, low-dose high-frequency practice equipment, oxygen/airway devices, monitors, suction, and electrical items.	Simulation associate / biomedical focal person	Maintenance calendar; service records; calibration certificates where applicable	Monthly or manufacturer schedule; overdue maintenance tracked
Corrective maintenance and repair	Report damaged or malfunctioning equipment immediately, label it as not in use, remove from teaching circulation if unsafe, and document repair actions until closure.	All users report; lab coordinator / focal point follows up	Incident/repair log; photos if needed; vendor communication; closure note	Within 24 hours reporting; closure status reviewed monthly

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Consumables and supplies	Maintain minimum stock levels for consumables required for priority trainings, including gloves, airway supplies, IV items, birth simulators accessories, newborn care materials, cleaning supplies, and scenario-specific items.	Store focal person / lab coordinator	Stock register; minimum stock list; requisition forms; expiry tracking sheet	Monthly; stock-outs documented and actioned
Storage and security	Store equipment in a clean, dry, secure, labelled area. High-value, fragile, electrical, or hazardous items should have controlled access and clear handling instructions.	Lab coordinator / designated custodian / focal point	Storage map; access log; key register; equipment movement form	Quarterly; zero unexplained loss/damage
User orientation	Ensure facilitators, trainers, and learners receive orientation on correct handling, cleaning, storage, and troubleshooting of equipment before independent use.	Facilitator/ Trainer/ Focal person/ simulation associate	Orientation attendance; competency checklist; user guide availability	At induction and annually; all users oriented

SOP Annex 2: Simulated / Standardized Patient (SP) Management

Purpose: To ensure ethical, safe, consistent, and high-quality use of simulated or standardized patients in simulation-based education and assessment.

Scope: Applies to recruitment, orientation, consent, training, deployment, safety, feedback, and documentation for SPs.

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
SP recruitment and role definition	Recruit simulated/standardized patients based on scenario needs, communication ability, reliability, confidentiality, and suitability for role portrayal. Define expected role, time commitment, and boundaries before engagement.	Training focal point/ simulation associate/ trainer/ facilitator	SP roster; role description; selection criteria; consent form	Before engagement; roster updated biannually

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Consent and confidentiality	Obtain written informed consent from SPs. Ensure they understand confidentiality, recording rules, data protection, feedback boundaries, and their right to withdraw without penalty.	Training focal point/ simulation associate/ trainer/ facilitator	Signed consent; confidentiality agreement; media release if applicable	Before first activity and renewed annually
Training and calibration	Train SPs on case history, emotional tone, physical cues, cultural sensitivity, learner interaction, safety cues, and feedback method. Calibrate portrayal across SPs for assessment consistency.	Training focal point/ simulation associate/ trainer/ facilitator	Training attendance; calibration checklist; role scripts; feedback guide	Before each new scenario; refresher as needed
Scenario briefing and debriefing	Brief SPs before sessions on objectives, expected learner actions, stop criteria, and support mechanisms. Debrief them after sessions to address emotional or physical concerns.	trainer/ facilitator	SP briefing checklist; debrief note; concern log	Every session
Psychological and physical safety	Avoid roles that may cause distress, stigma, unsafe exposure, or physical discomfort. Provide breaks, safe space, option to stop, and referral pathway if distress occurs.	trainer/ facilitator	Risk assessment; stop-signal protocol; incident report if needed	Every scenario; incidents reviewed immediately
Performance monitoring	Use facilitator and learner feedback to monitor SP reliability, realism, communication quality, and adherence to script; provide coaching where needed.	trainer/ facilitator	SP performance feedback form; coaching notes	At least quarterly or after high-stakes assessment
Payment and recognition	If payments or reimbursements are applicable, follow institutional policy, avoid any coercive or exploitative practice.	Program administrator / finance or focal person	Agreement; payment/ reimbursement records; attendance log	Per activity; reconciled after session

SOP Annex 3: Quality Assurance for Simulation-Based Methodology

Purpose: To maintain consistent quality of simulation design, facilitation, assessment, documentation, and continuous improvement across accredited training sites.

Scope: Applies to all simulation-based sessions, faculty/facilitators, assessment activities, QA monitoring, learner feedback, and improvement actions.

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Governance and accountability	Establish a quality assurance structure with defined roles for lab management, faculty development, data review, learner feedback, and corrective action.	Institutional focal person/ Leadership	Simulation committee TOR; organogram; meeting minutes	Quarterly QA meetings held and documented
Training design quality	Ensure each simulation activity has clear learning objectives, scenario plan, facilitator guide, learner instructions, assessment method, and debriefing plan aligned with competency needs.	Facilitator/ Focal person	Scenario templates; lesson plans; checklists; assessment tools	Before implementation; annual content review
Facilitator competency	Ensure facilitators are trained in simulation methodology, briefing, facilitation, debriefing, assessment, feedback, and learner safety. Maintain a facilitator development plan.	Facilitator/ Focal person/ Training coordinator/ Faculty development lead	Facilitator roster; TOT certificates; observation checklist; CPD log	Annual review; minimum facilitator requirements met
Session quality monitoring	Observe selected sessions using a standard quality checklist covering preparedness, psychological safety, scenario conduct, feedback/debriefing, learner engagement, and documentation.	Committee Chair/ Training coordinator	Session observation checklist; action plan; follow-up log	At least quarterly; action completion tracked
Learner assessment and feedback	Collect learner feedback and competency assessment results using standard tools. Use results to improve scenarios, facilitator support, equipment readiness, and training delivery.	Facilitator/ Focal person/ Simulation Associate	Learner feedback forms; skills checklists; assessment database	Every course/ session; trend review quarterly

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Data management and reporting	Maintain accurate data on sessions delivered, participants trained, competencies assessed, equipment issues, incidents, and improvement actions. Protect confidentiality and use aggregate reporting.	Facilitator/ Focal person/ Simulation Associate	Training database; dashboard; report template; privacy procedure	Monthly data update; quarterly report
Continuous quality improvement	Use QA findings to identify gaps, assign actions, monitor progress, and document improvements. Link simulation findings to clinical quality priorities where applicable.	Committee Chair, Focal person/ Simulation Associate	QI action tracker; PDSA notes; improvement evidence	Quarterly; actions closed or escalated

SOP Annex 4: Safety in Simulation Learning Environments

Purpose: To protect learners, facilitators, SPs, staff, and equipment through structured physical, psychological, infection prevention, emergency, and incident management procedures.

Scope: Applies to all simulation activities conducted in classrooms, skills labs, simulation labs, clinical training sites, and outreach training locations.

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Safety governance	Assign safety responsibilities for physical safety, psychological safety, infection prevention, emergency response, equipment safety, and incident reporting. Display safety contacts in the simulation area.	Institutional focal person / lab coordinator	Safety roles list; contact poster; orientation records	Reviewed biannually
Psychological safety	Create a respectful learning environment with pre-briefing, confidentiality expectations, permission to make mistakes, respectful feedback, and no humiliation or blame.	Facilitator / lead trainer	Pre-briefing script; participant ground rules; feedback forms	Every session; concerns reviewed immediately

SOP area	Minimum standard / procedure	Responsible person	Required records / evidence	Review frequency / indicator
Infection prevention and cleaning	Apply cleaning procedures for mannequins, task trainers, reusable items, surfaces, linens, and shared devices. Segregate clean and used materials and follow waste disposal rules.	Simulation technician / IPC focal person	Cleaning checklist; disinfection log; waste segregation evidence	Every session; monthly audit
Equipment and electrical safety	Check electrical cords, batteries, chargers, oxygen/air devices, moving parts, sharps, trip hazards, and simulator-specific safety warnings before use. Remove unsafe items immediately.	Simulation technician / facilitator	Safety checklist; repair log; out-of-use label	Before session; monthly facility walkthrough
Learner and SP physical safety	Avoid unsafe procedures on real persons. Clearly distinguish simulated medication, sharps, fluids, and devices. Provide stop rules for discomfort, fatigue, or unsafe behavior.	Facilitator / SP coordinator	Scenario risk assessment; stop-signal protocol; incident log	Every scenario
Emergency preparedness	Ensure emergency exits, fire safety, first aid kit, emergency contact numbers, and escalation procedures are visible and accessible. Orient all facilitators and participants.	Lab coordinator / safety focal person	Emergency map; first aid checklist; drill record	Quarterly check; annual drill
Incident reporting and learning	Document near misses, injuries, equipment failures, breaches of confidentiality, and psychological distress. Review incidents without blame and implement corrective action.	All users report; safety focal person follows up	Incident report form; root-cause note; corrective action tracker	Immediate reporting; monthly review

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