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ELAB Handbook

Samuel Bowman Experiential Learning and
Assessment Lab (ELAB)

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Section 1: Overview of the ELAB

Introduction to Simulation

In health sciences education, simulation recreates essential aspects of a clinical situation so that the simulated situation may be more readily understood and managed when it occurs in real clinical practice. Simulation ranges in complexity from task training (practicing procedures such as intubation, IV insertion or CPR) to high-fidelity scenarios (presenting lifelike situations that require clinical skills, decision-making, and teamwork). Practicing these situations in a safe environment develops critical thinking, clinical reasoning, and clinical judgment skills, and increases the probability that those skills will be used correctly in a real-world setting.

Definition of Terms

The following definitions come from the [Agency for Healthcare Research and Quality](#).

Confederate: An individual(s) who, during the course of the clinical scenario, provides assistance locating and/or troubleshooting equipment. This individual(s) may provide support for participants in the form of 'help available', e.g. 'nurse in charge', and/or to provide information about the manikin that is not available in other ways, e.g., temperature, color change, and/or to provide additional realism by playing the role of a relative or a staff member.

Debrief: A formal, collaborative, reflective process within the simulation learning activity.

Facilitator: An individual who is involved in the implementation and/or delivery of simulation activities. For example, faculty, educators, etc.

Note: For the ELAB, all facilitators must be certified as described in this document.

Fidelity: The degree to which the simulation replicates the real event and/or workplace; this includes physical, psychological, and environmental elements.

- **Low-Fidelity:** Not needing to be controlled or programmed externally for the learner to participate; examples include case studies, role playing, or task trainers used to support students or professionals in learning a clinical situation or practice.
- **Medium-Fidelity:** the use of manikins or task trainers that offer breath sound, heart sounds, bowel sound or simulated blood but lack the authenticity of a realistic environment ([Ntlokonkulu et al](#)).
- **High-Fidelity:** A term often used to refer to the broad range of full-body

manikins that can mimic, at a very high level, human body functions.

Learner: See participant / A person who engages in a simulation activity to gain or demonstrate mastery of knowledge, skills, and/or attitudes of professional practice.

Note: the ELAB uses the term learner to include all participants who engage in scenarios, regardless of whether they are completing pre-service or in-service training.

Manikin: A life-sized, human-like robotic simulator representing a patient for health care simulation and education.

Pre-brief: An information or orientation session held before the start of a simulation activity in which instructions or preparatory information are/is given to the participants. The purpose of the prebriefing is to set the stage for a scenario, and assist participants in achieving scenario objectives.

Scenario: A deliberately designed simulation experience (also known as a case) that provides participants with an opportunity to meet identified objectives. Also, the scripts, stories, or algorithms created for instructing the participants, including the simulators (human or robotic), on how to interact with the students.

Simulation: A technique that creates a situation or environment to allow persons to experience a representation of a real event for practice, learning, evaluation, testing, or to gain an understanding of systems or human actions.

Note: In the ELAB, simulation encompasses task training and scenarios of all fidelity levels.

Standardized Participant: A person who has been carefully trained to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician. In performing the simulation, the SP presents the gestalt of the patient being simulated; not just the history, but the body language, the physical findings, and the emotional and personality characteristics as well.

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

Purpose of Handbook

To maximize the impact and sustainability of simulation programs in the ELAB, all ELAB users (including facilitators, learners, and staff) must observe and adhere to specific policies and procedures. The purpose of this handbook is to document and disseminate those policies and procedures. It should be reviewed by all ELAB users, including facilitators, learners, and institutional collaborators before engaging in

ELAB activities and as needed throughout their engagement with the ELAB.

ELAB Vision

The ELAB aspires to become a cutting-edge simulation center for health sciences learners and professionals within Liberia and to serve as a resource and model training program for peer institutions across West Africa.

ELAB Mission

The ELAB uses evidence-based simulation education to develop the knowledge, skills, and attitudes of learners. By practicing tasks and participating in scenarios in a controlled environment, learners gain competence and confidence and are better prepared to deliver high-quality patient care.

ELAB Sites

The ELAB has two sites: JFKMC and Capitol Hill (University of Liberia campus).

John F. Kennedy Medical Center (JFKMC) site: The JFKMC ELAB site was opened in September 2022, and is equipped for medium- and high-fidelity scenarios and task training across disciplines. It contains 2 simulation rooms, 2 debrief rooms, and 1 control room.

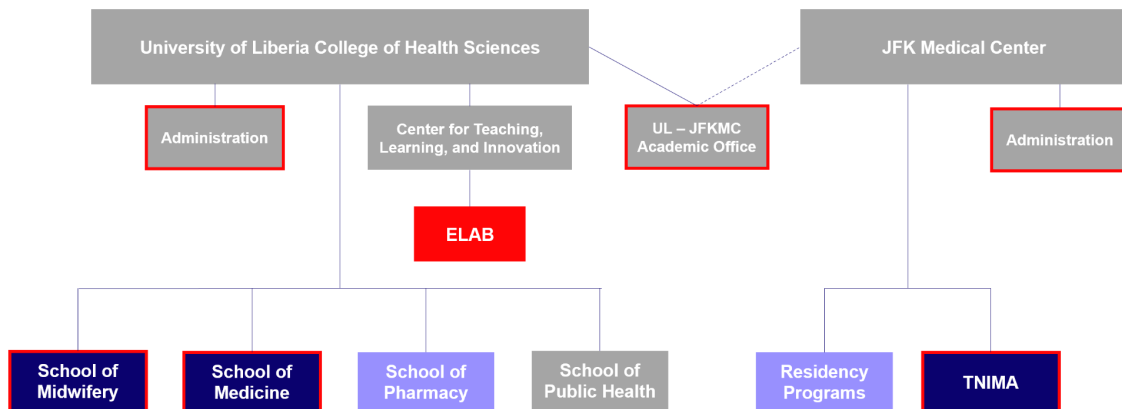
University of Liberia Capitol Hill site: The Capitol Hill site became part of the ELAB in 2023 with support from the University of Liberia College of Health Sciences (ULCHS) School of Midwifery which opened the same year. It is equipped for task training, as well as low- and medium-fidelity scenarios (with an emphasis on nursing and midwifery). It contains an office space, 1 Simulation room and 1 Skills lab.

Governance

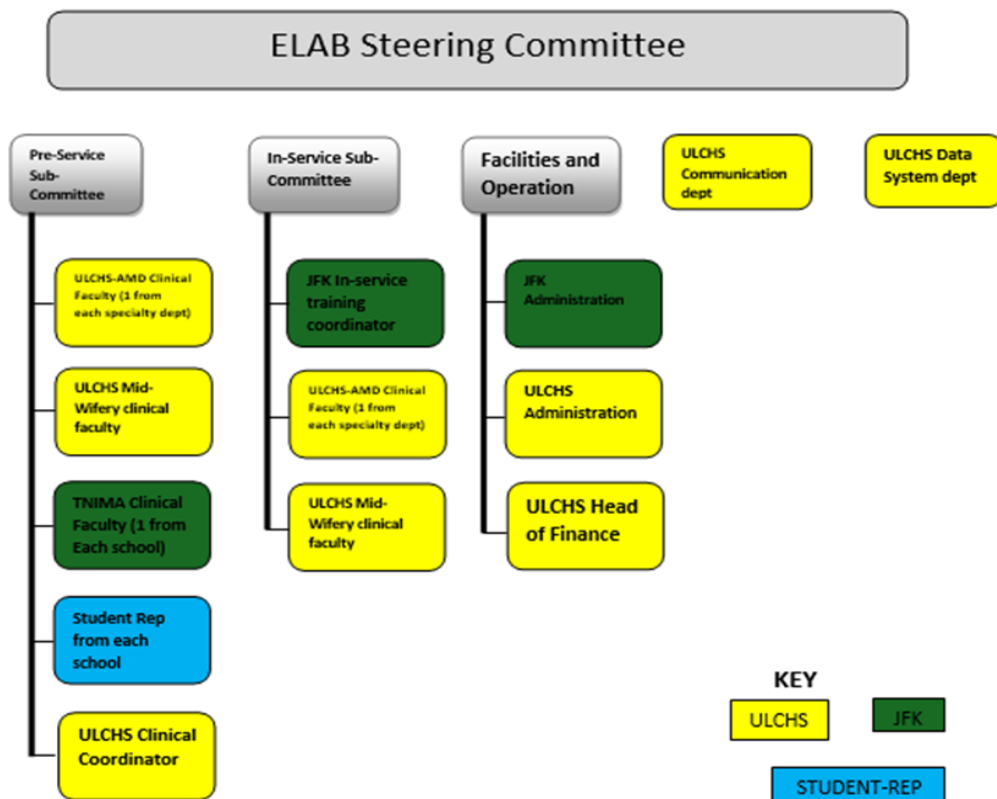
The ELAB is a ULCHS program, housed within the Center for Teaching, Learning and Innovation, operated in partnership with JFKMC. Within those institutions, the ELAB is available for use by the four schools at ULCHS, as well as JFKMC training programs (including Tubman National Institute of Medical Arts (TNIMA) and residency programs), as illustrated below.

ELAB Organizational Structure

Key



The ELAB is advised by a steering committee, representing key internal and external stakeholders and reporting to the University of Liberia Vice President for Health Sciences and the JFKMC CEO. The steering committee uses a sub-committee structure to facilitate collaboration, advise on training needs and operational context, and promote transparency and accountability. The steering committee structure is outlined below, and in its Terms of Reference (see Appendix).



ELAB Team Structure

The ELAB is staffed by the following positions, with current contact details listed below.

CTLI Deputy Director, ELAB: As ULCHS faculty and JFKMC consultant, provides clinical and academic leadership for the ELAB.

Current: Dr. Hawa Sonii-Koon: KOONHA@ul.edu.lr

CTLI Senior Coordinator, ELAB: Based at CTLI, leads the general programmatic implementation of ELAB activities and leads with the Nursing and Midwifery academic program

Current: Isaac T.R. Dolo: DOLOIT@ul.edu.lr

ELAB Program Assistant: Manages daily operations of the ELAB, including scheduling, supplies, facilities, etc.

Current: Franpatra Goodridge: GOODRIDGEFK@ul.edu.lr

ELAB Technologist: Operates and maintains manikins, A/V, and IT systems in the ELAB.

Current: George Monibah: MONIBAHGW@ul.edu.lr

Capitol Hill ELAB Clinical Supervisor: Oversees simulation training activities at the Capitol Hill site.

Current: Evon Diggin-Karpeh: diggenkarpehev@ul.edu.lr

Section 2: Accessing the ELAB

Institutional Collaborations

Pre-Service Training

As a ULCHS and JFKMC initiative, the ELAB primarily serves students of training programs at those institutions, including the schools within ULCHS, and TNIMA and residency programs at JFKMC.

Given the long-term vision for the ELAB as a resource for trainees across Liberia, collaboration with external partners is welcome. Training institutions outside of ULCHS and JFKMC may partner with ELAB to offer training programs for their students. Those training institutions may optionally have their own faculty and instructors complete the Simulation Facilitation Training to become certified ELAB facilitators or may have ELAB staff facilitate simulation. Full details about collaboration opportunities, including a fee schedule, will be published in 2024.

In-Service Training

ULCHS will register as a Continuing Professional Development (CPD) training provider with the health professions boards and offer in-service training for practicing clinicians at the ELAB. Individual health professionals (including at JFKMC) will be able to sign up and pay a fee for these courses. A process will be designed for external partners to sponsor groups of learners to participate in simulation courses as a team. These processes will be rolled out in 2024.

Certification of Facilitators

All ELAB activities - including task training and scenarios - require certified facilitators. To become a certified facilitator, faculty, and instructors from health professions training programs must complete the Simulation Facilitator Training. At this time, the training is only open to ULCHS and JFKMC-affiliated faculty and instructors; options for faculty and instructors from external institutions will be shared in 2024.

The Simulation Facilitator Training will be offered at least once per year and is open to faculty and instructors of all health sciences disciplines. Individuals wanting to become facilitators, but not yet certified, may participate in simulation sessions alongside a certified facilitator as a mentee while waiting to complete the next Simulation Facilitator Training.

Faculty and instructors with previous simulation facilitation experience may present an alternative credential in lieu of the Simulation Facilitator Training.

Note that even if the credential is accepted, additional orientation to ELAB equipment and procedures is required.

Learner Orientation

All learners must complete orientation before engaging in simulation activities with the ELAB. The orientation includes an introduction to simulation lectures, as well as instructions for using the manikins, task trainers, and medical equipment contained in the ELAB. This orientation will be conducted on an as-needed basis.

Booking and Scheduling time in the ELAB

The Clinical Coordinator (or similar) for each partner institution should reach out to the ELAB Program Assistant and Capitol Hill ELAB Clinical Supervisor in advance of each academic term to book sessions in the ELAB for learners. Ideally, the scheduling process will begin at least one month before the start of the term. Simulation is a tool that complements (does not replace) other training activities;

ELAB activities should be scheduled in alignment with existing curricula and learning objectives.

The ELAB schedule will be made publicly available on the ELAB website. When scheduling, ULCHS, and JFKMC pre-service trainees will have priority over in-service learners and external collaborators.

The scheduled start times for ELAB activities will be strictly enforced. Activities may not run over time due to a late start, as other groups may be waiting to use the ELAB.

Fee Structure

There is currently no fee for ELAB activities conducted by ULCHS or JFKMC. In the future, partnership opportunities and a corresponding fee structure will be developed for external engagements for both pre-service and in-service training.

Cancellation Policy

If a simulation session needs to be canceled, the facilitator should notify the ELAB Team via email (elab@ul.edu.lr) as soon as possible. Upon receiving cancellation notification, the Program Assistant will disseminate the update to the ELAB team.

If the ELAB needs to cancel a simulation session, options for rebooking at their earliest convenience will be provided.

Section 3: Implementing Scenarios

Roles and Responsibilities

Implementing scenarios requires coordination between all staff and personnel, according to the roles outlined below:

ELAB Team

- With a simulation facilitator, conduct simulation orientation for learners.
- Review the scenario set-up and programming with the facilitator at least one week before the scenario date.
- Prepare supplies and medications as requested in the scenario script and Simulation Room Checklist (see Appendix).
- Prepare the simulation room, manikins, and technology based on assigned scenarios for the day.
- From the control room, operate the manikin according to the details of the

scenario.

- Set up the debriefing room, including A/V systems.
- Following the scenario, remove any supplies from the simulation room to prep for a new simulation.
- At set intervals, provide the facilitator with summary evaluation data for continuous improvement.

Simulation Facilitator

Note: All sessions require a certified facilitator familiar with the scenario to be present. The absence of a certified facilitator may result in session cancellation.

- Develop a scenario (or, identify and prepare an existing scenario from the ELAB scenario library)
- Send the names of learners who will participate in the scenario (part of the scheduling process)
- Review the scenario with the ELAB team one week before the simulation session (see below)
- With ELAB staff, conduct simulation orientation for learners
- Conduct pre-briefing of learners
- From the simulation room or control room, facilitate and manage the entire scenario with learners
- Conduct debriefing of learners
- Have all learners who participated in the scenario complete and return an ELAB Learners Feedback Survey
- Complete the ELAB Facilitator Feedback Survey

Scenario Development

There are several sources for scenarios:

1. All certified facilitators are trained in scenario writing and may develop custom scenarios to meet the learning objectives of their learners.
2. Facilitators may adopt a scenario from the Laerdal Scenario Cloud.
3. Facilitators may implement previously developed scenarios housed in the ELAB Scenario Library.

Newly-developed scenarios must be written in the ELAB Scenario Template (see Appendix) and be approved for use in the ELAB using the following review process:

1. The facilitator sends the ELAB team to review the scenario
2. ELAB team reviews the scenario, consulting with mentors as necessary
3. The facilitator incorporates ELAB team feedback and returns to the ELAB team
4. ELAB team approves and saves in the ELAB Scenario Library

5. ELAB team shares the final scenario with the ULCHS Data Systems team, to be included in:
 - a. Drop-down menus across existing REDCap projects (ELAB Simulation Session Attendance, ELAB Simulation Session Information, ELAB Learner Feedback Survey, ELAB Facilitator Feedback Form)
 - b. New REDCap project with expected actions and points (for CUS-4 tracking)

Note: For scenarios targeting physicians (including medical students), the CTLI Deputy Director for ELAB provides feedback and approval. For scenarios targeting nurses and midwives (including students), the CTLI Senior Coordinator, ELAB provides feedback and sends it to the CTLI Deputy Director for review and approval.

Facilitator Preparation for Scenarios

Preparation is key to the successful implementation of scenarios. Facilitators must meet with the ELAB team at least one week prior to the session to review the scenario. The ELAB team will contact the facilitator to schedule this meeting. During the review meeting, the team will:

- Review necessary equipment and supplies
- Review learning objectives and assessment checklist (for CUS-4 tracking)
- Review discussion questions for debriefing

Scenario Process

Scenarios at the ELAB require the active participation of all learners and facilitators. Learners participate in groups of 3-10 people. There are three key components of implementing scenarios:

- Pre-brief (3-5 minutes): The facilitator orients learners to the scenario and reinforces the suspension of disbelief. For new ELAB users, this is also an opportunity to provide any instructions related to using the equipment (manikins, medical equipment, etc.).
- Scenario (5-20 minutes): Learners are immersed in a lifelike clinical environment, presented with the patient case, and allowed to respond. Learners participate in the scenario as small groups of 3-10; if the group is larger than that, they may break into small groups and rotate through the scenario before reconvening for the debrief.
- Debrief (20-30 minutes): The debriefing session provides an immediate opportunity for feedback and reflection among learners and facilitators. Facilitators encourage critical thinking so that learners can analyze what went well and what could have been done better. The debrief is where most of the learning happens, to apply lessons learned to future real-world practice.

Task Training

Task training involves practicing specific skills on dedicated task trainers, manikins or standardized patients. Task training should be conducted under the supervision of a certified facilitator, with a maximum of 10 learners per session.

IPC Guidelines

ELAB staff, facilitators and learners should take all standard and transmission-specific IPC precautions (contact, droplet, airborne) as though they were in a true clinical setting. Any supply or piece of equipment that comes in contact with simulated patient bodily fluids is considered contaminated and needs to be handled appropriately. Depending on the scenario, gloves should be worn for manikin interactions; gloves should be disposed of in non-biohazard trash cans. Sharps must be disposed of in a sharps container; if a sharps container is full, please inform the ELAB team right away so that it may be replaced.

According to the [Centers for Disease Control \(CDC\)](#) all sharps are to be handled safely and disposed of properly. In the event of any needle stick, the ELAB team and facilitator should be notified immediately, so first aid can be provided. The Senior Coordinator, ELAB should be notified so that an incident report can be completed and shared with the steering committee.

Section 4: Equipment, Supplies and Facilities

Supplies and Inventory

ULCHS is primarily responsible for procuring consumable supplies. JFKMC may also provide supplies, especially expired or soon-to-be-expired medications and clinical supplies. Procurement will be conducted using the following process:

- ULCHS: ELAB Program Assistant will submit a quarterly procurement request to the procurement department. She may also submit ad hoc requests in special circumstances.
- JFKMC: Bi-monthly (twice per month) procurement request to be submitted to the JFK Hospital Administrator. Supplies will also be requested on an as-needed basis.

The ELAB Program Assistant is responsible for managing inventory according to

the Inventory Tracker (see Appendix). In the event of a stock-out, facilitators for upcoming sessions should be notified to make any required adaptations. Many supplies are reusable: following each scenario, the ELAB staff should return all reusable supplies to the same cabinet in which they were found. Needles/sharps are never to be reused under any circumstance and should be disposed of in sharps containers. Many supplies will be past their expiration dates and are intended for practice only.

Equipment Management

The ELAB Technologist, with support from the ULCHS IT department, logs all equipment, including manikins, task trainers, medical equipment, furnishings, A/V equipment, and IT equipment in the ULCHS Asset Registry. Additionally, he records details for each piece of equipment in the ELAB Equipment Tracker (see Appendix). All learners should be oriented to safe handling techniques before practice and demonstration with manikins, medical equipment, etc.

Note: Computers, printers, and A/V equipment are for simulation and work purposes ONLY.

Supplies and equipment at ELAB sites should never be removed from those facilities. Some training equipment may be transferred between Capitol Hill and JFKMC; moving equipment requires approval from the Vice President for Health Sciences, UL, and must be documented in the ELAB Equipment Tracker. Any equipment issues should be immediately reported to the ELAB Technologist (+231 77 019 5344) and addressed using the Maintenance Guides (see Appendix). If the ELAB Technologist is unavailable, issues may be reported to the CTLI Senior Coordinator, ELAB, or the ELAB Program Assistant.

Equipment Safety

There are many pieces of electronic equipment and cables in ELAB facilities. The ELAB team, facilitators, and learners must be cautious of running cables, power sources, and the location of devices and equipment, and take necessary precautions. Any person should use caution when practicing lifting skills and should not lift a manikin or heavy object without assistance. The wheels of all equipment (beds, wheelchairs, stretchers, etc.) are to be locked during practice and after use. There is a first aid kit available in the ELAB if needed. There should be no running in ELAB facilities, and any accident or injury needs to be reported immediately to the ELAB team.

Preventative Maintenance

The ELAB Technologist will maintain a schedule for preventative maintenance of

manikins, task trainers, and medical equipment. Any issues should be noted right away in the Preventive Maintenance Checklist and reported to the ELAB team.

Note: Only the ELAB Technologist is authorized to conduct maintenance on the manikins and A/V equipment.

When repairs are required, the ELAB Technologist will consult with the vendor and/or manufacturer as appropriate. This may require equipment to be sent away for repairs for an extended period; the ELAB team will try to minimize the impact on learners and facilitators. The ELAB team will make every effort to communicate the timeline for any maintenance activities that might hinder simulation sessions.

Security and Emergencies

A member of the ELAB team must be present at each ELAB site during all open hours. When this is not possible, the ELAB site must close. Doors should be locked at all times outside of open hours. The site's security department (either JFKMC or Capitol Hill) should be notified if the ELAB site will be in use on off-hours (evenings or weekends).

It is the responsibility of all ELAB users to be aware of the site's emergency procedures. In case of a fire, all persons are expected to evacuate the building immediately. Fire extinguishers are located at both ELAB sites. In case of missing items or suspected burglary, the ELAB team should inform the steering committee (including ULCHS and JFKMC administration) and CTLI leadership.

Rules for ELAB Facilities

- The control room is restricted ONLY to facilitators and the ELAB team. The learners can access the simulation room and the debrief room using the corridor doors.
- The doors to the simulation room will remain closed during scenarios. One has to be ALERTED whenever they are needed in the simulation room or debrief room.
- Fluids, food, and any kind of liquids (except for clinical supplies provided as part of the scenario) will NOT be permitted in the simulation room.
- ELAB users should minimize disturbances to academic activities, for example, by avoiding loud noises.
- The ELAB is open only to individuals actively participating in simulation activities. It is not a general workspace. Using the debrief rooms for small group meetings is acceptable with permission from the ELAB team.
- No ELAB user shall infringe upon the privacy, rights, privileges, health, or safety of other ELAB users.
- All learners must complete the ELAB orientation before using the equipment.
- Do not use the equipment for any purpose other than specified.

- Any equipment malfunction or abuse must be reported to the ELAB Team immediately.
- Adherence to the dress code is expected. All learners must be in uniform or wearing a lab coat to participate in any activity at the ELAB.
- Smoking is prohibited in ELAB facilities.
- Learners are prohibited from using any personal electronic device (including cell phones, cameras, camera phones, and video recorders) during scenarios unless they are using their smartphone for reference in the scenario.

Section 5: Data Systems and Continuous Improvement

Monitoring Framework

The ELAB will routinely collect programmatic data according to the Monitoring Framework (see Appendix). The Monitoring Framework may be edited based on requirements from new funding sources.

Outcome Evaluation and Research

The ELAB team may conduct periodic assessments to measure learning outcomes from the ELAB. Facilitators and learners may be invited to participate in these assessments.

Collaborators with ideas for research projects are invited to contact the ELAB team. Institutional Review Board (IRB) approval (or exemption) from the UL and JFKMC IRBs may be required.

Monthly Review Meetings

The ELAB team will organize monthly review meetings with CTLI leadership (including Communications and Data Systems). The purpose of these meetings is to update all stakeholders on ELAB activities, review data in the Monitoring Framework, and discuss opportunities for improvements or enhancements to programs.

The data will also be shared at the quarterly Steering Committee meetings.

Knowledge and Data Management

The ELAB will use the ULCHS knowledge management system for document storage. All data will be collected and stored in REDCap.

Section 6: Communications

Website and Social Media

The ELAB website and social media accounts (see Appendix) are managed by the ULCHS Communications team. ELAB users may share interesting content for those channels with the ULCHS Communications Director (Jani Kollie, kolliejj@ul.edu.lr).

Other Communications Content

The ELAB Team will update the contents of this manual at least every year, or more often if needed. The steering committee, as well as learners, facilitators and collaborators, will be advised of these revisions.

Appendix

1. [ELAB Steering Committee TOR](#)
2. ELAB Staff TORs
 - a. [CTLI Deputy Director, ELAB](#)
 - b. CTLI [Senior Coordinator](#), ELAB
 - c. [ELAB Program Assistant](#)
 - d. [ELAB Technologist](#)
 - e. [Capitol Hill ELAB Clinical Supervisor](#)
3. [Golden Rules of Simulation](#)
4. [CTLI Training Template: ELAB Simulation Facilitator Training](#) (currently being updated for 2024 training)
5. [ELAB Calendar](#)
6. [Scenario Template](#)
7. [Simulation Prep Checklist](#)
8. Inventory Tracker (coming soon)
9. [Equipment Tracker](#)
10. [Preventive Maintenance Checklist](#)
11. [Maintenance Guide SimMan 3G](#)
12. [Maintenance Guide SimBaby](#)
13. [Monitoring Framework](#)
14. Social Media Accounts:
 - a. [Facebook](#)

- b. [Twitter](#)
- c. [Instagram](#)
- d. [Linkedin](#)