

# **Simulation Skills Lab**

## **Overview**

Bharati Vidyapeeth (Deemed to be University) Medical College is a premier institute founded with a vision to be a 'center of excellence' in medical education and research. The institute strives to address national and global healthcare needs, driving social transformation through competent, compassionate, and confident Indian medical graduates. In its endeavour to pursue the vision amidst the changing societal needs and technological advances, simulation lab was set up in 2021 as a landmark advancement.

This aligns with the paradigm shift of medical education towards a competency-based, learner-focused, and patient-centered curriculum. Simulation-based training has revolutionized the approach of medical education offering an effective solution to achieve the goal of patient safety. This strategic enhancement underscores our commitment to providing cutting-edge education that meets the highest standards of patient care and safety.

The simulation lab became functional on February 1st, 2022 and since then, training sessions are routinely conducted for undergraduate students, interns, postgraduate students, as well as faculty.

## **Vision**

To be a center of excellence in clinical skills training and simulation-based education, dedicated to fostering a safe learning environment for all healthcare professionals to ensure patient-centric healthcare, superior patient outcomes and quality assurance.

## **Mission**

Our mission is to empower healthcare professionals with the knowledge, skills, and confidence needed to deliver exceptional patient care through innovative simulation-based education. We are committed to creating a dynamic and immersive learning environment that fosters clinical excellence, promotes patient safety, quality improvement and encourages continuous professional growth. By integrating cutting-edge technology and evidence-based practices, we aim to prepare our learners to meet the evolving challenges of healthcare with competence, compassion, and a commitment to lifelong learning.

## **Infrastructure**

The simulation lab is spread over 6000 square feet became functional on February 1st, 2022. A state of art infrastructure consists of 6 advanced simulation rooms, 3 task training rooms, 2 debriefing rooms, laparoscopy room and anatomage room. The centre has more than two hundred manikins including the most advanced high-fidelity simulators namely Lucina, Sim Man 3G, Luna and Aria.



 **GPS Map Camera**



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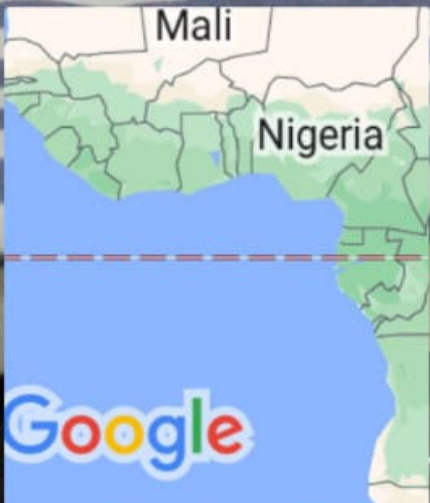
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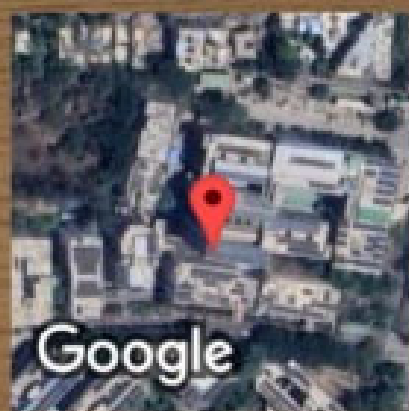
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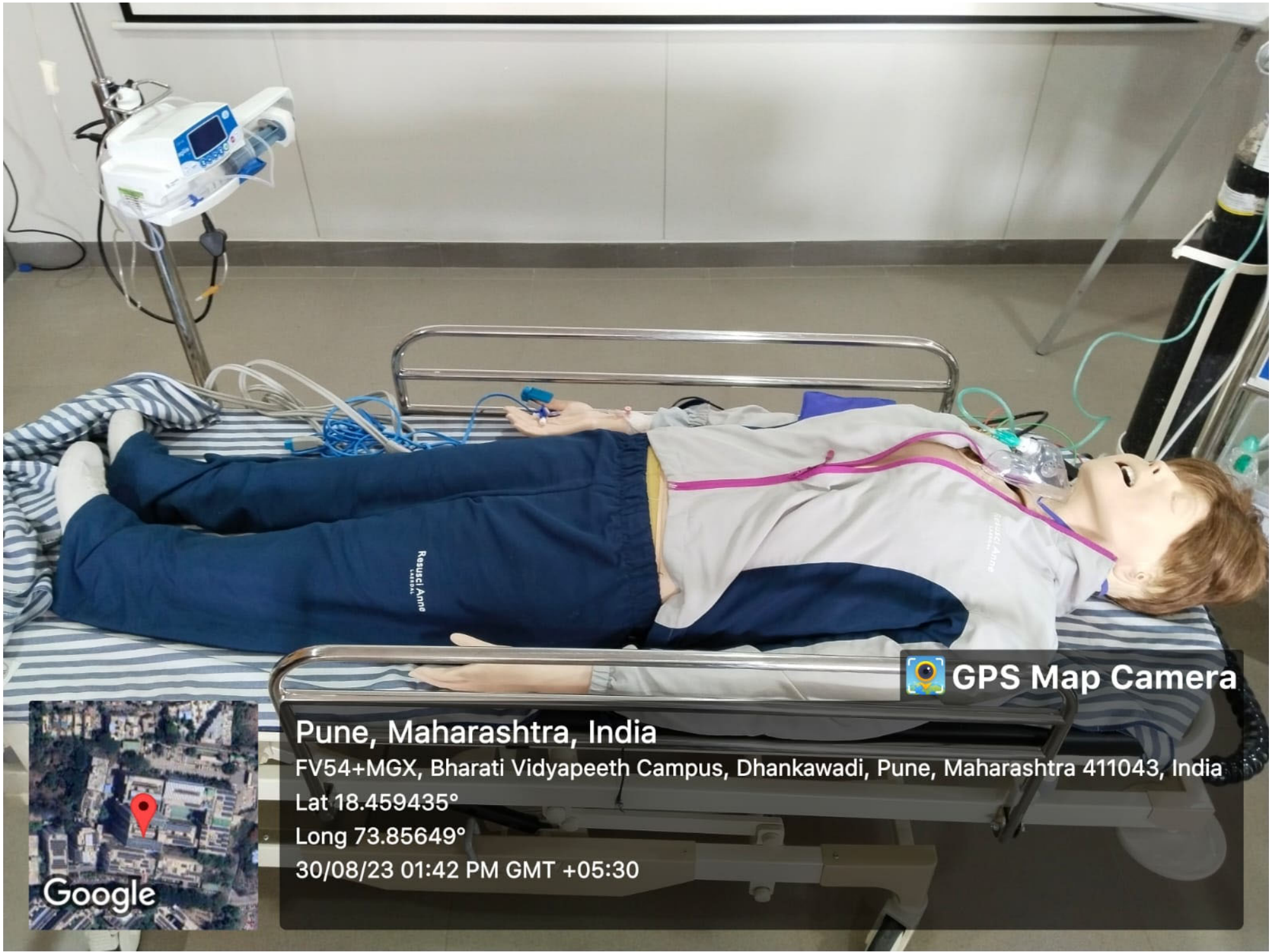
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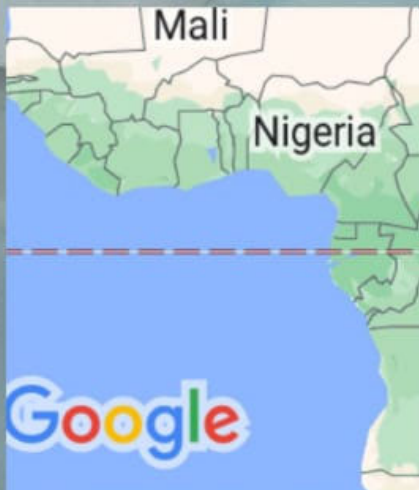
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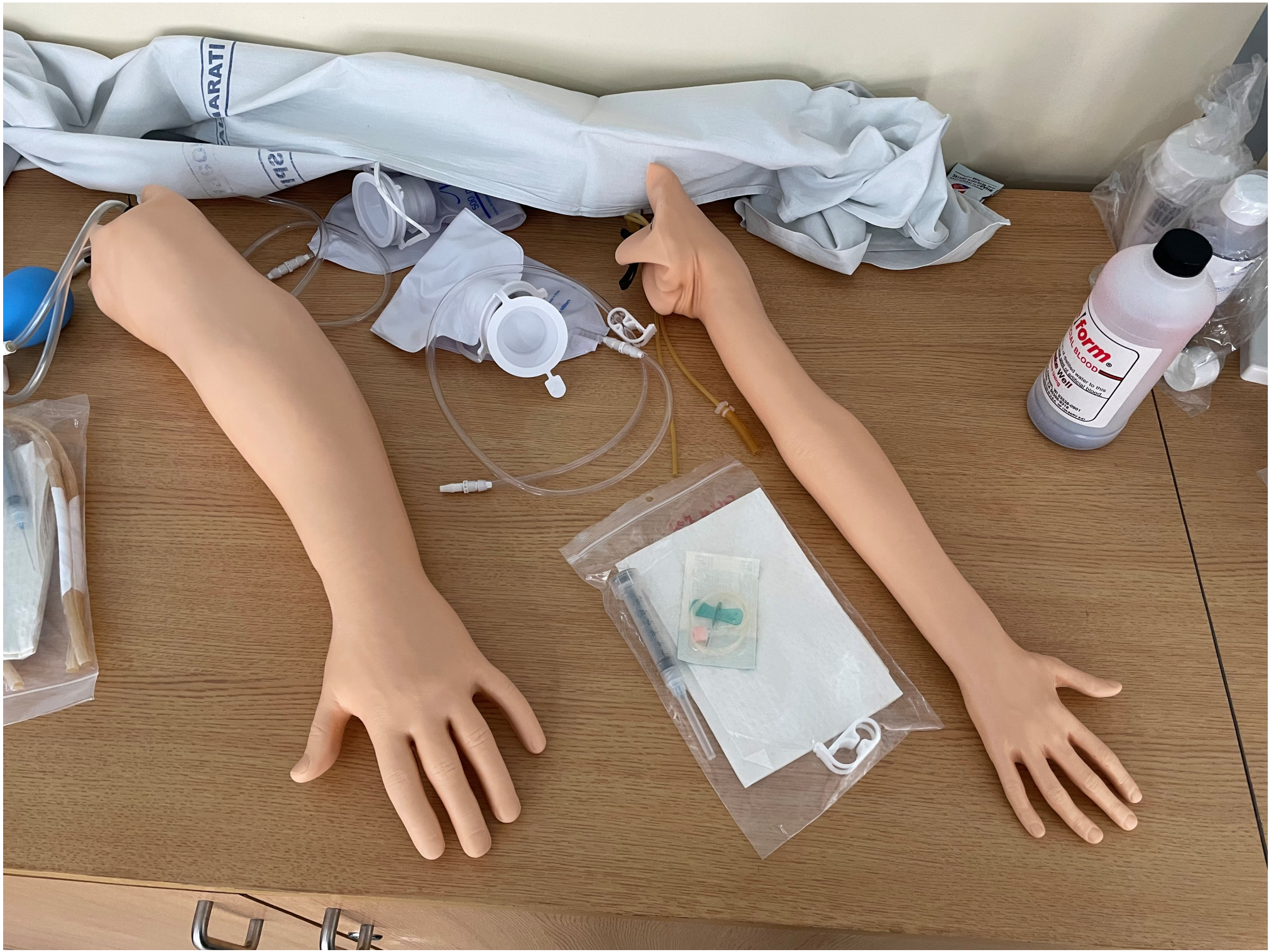
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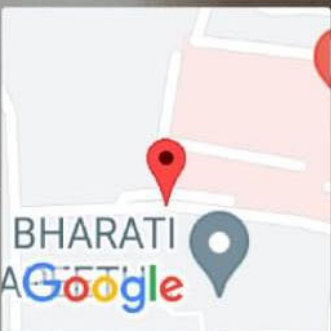
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*Ng tube trainer*



*Multipad I*





*Multipad 2*



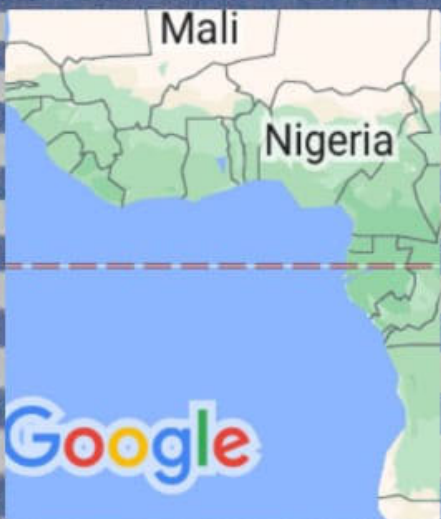


**PALS trainer**





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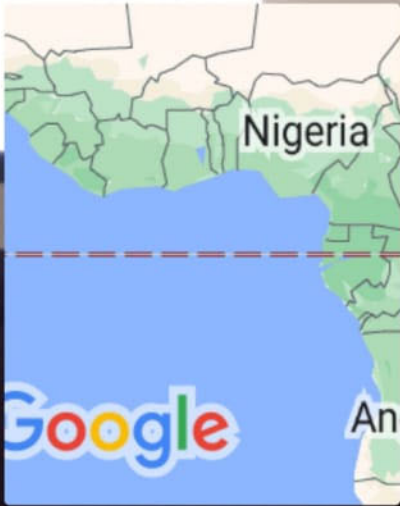
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Laparoscopy traoner



Juno



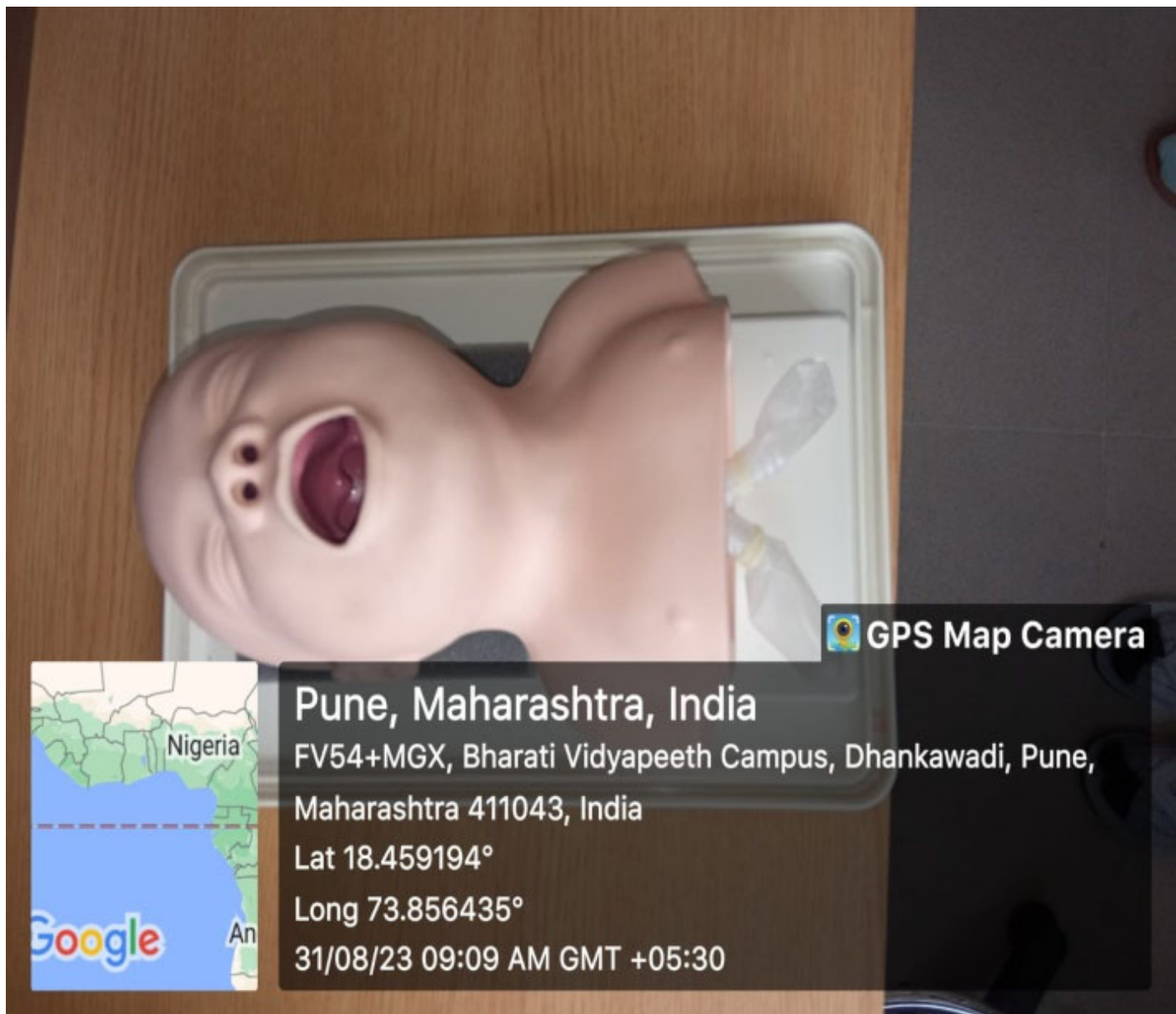


**IV arms**



*IV arm*

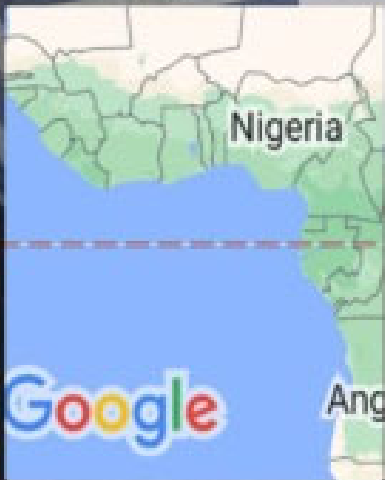








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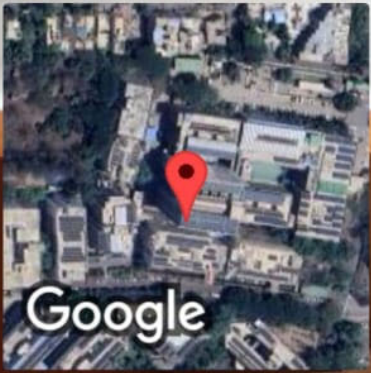


*Baby CPR*





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*Female pelvic examination*




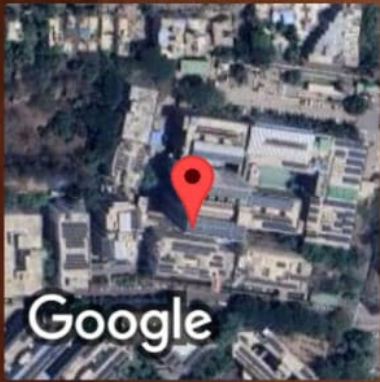


*Eye Examination Simulator*





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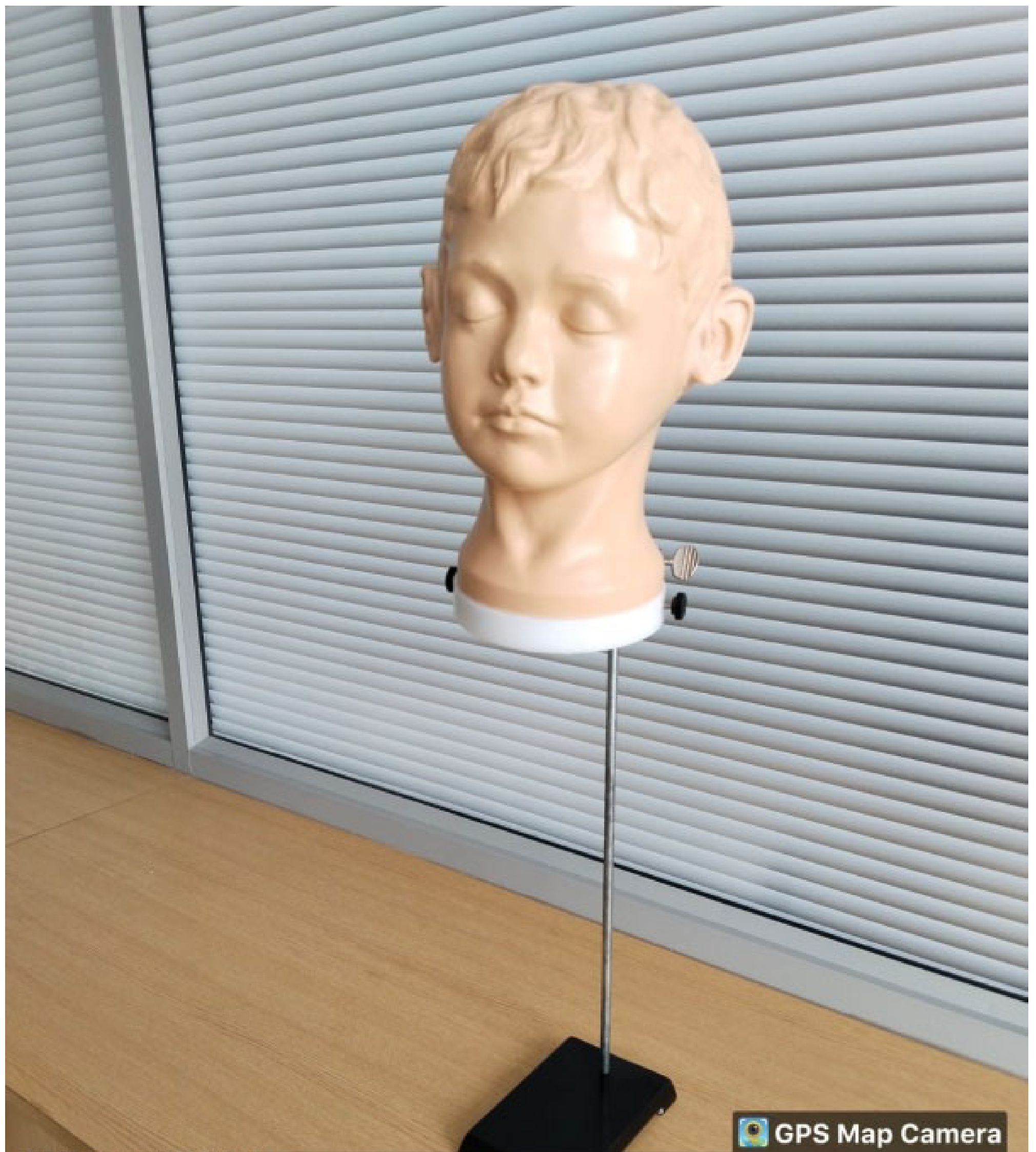
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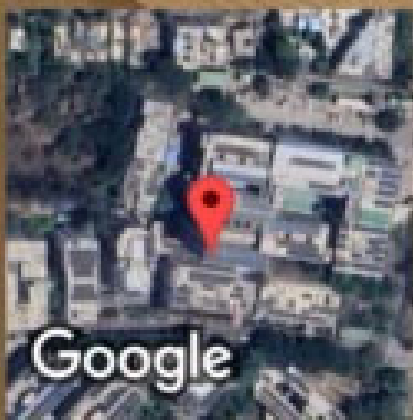
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**Debriefing**





**GPS Map Camera**



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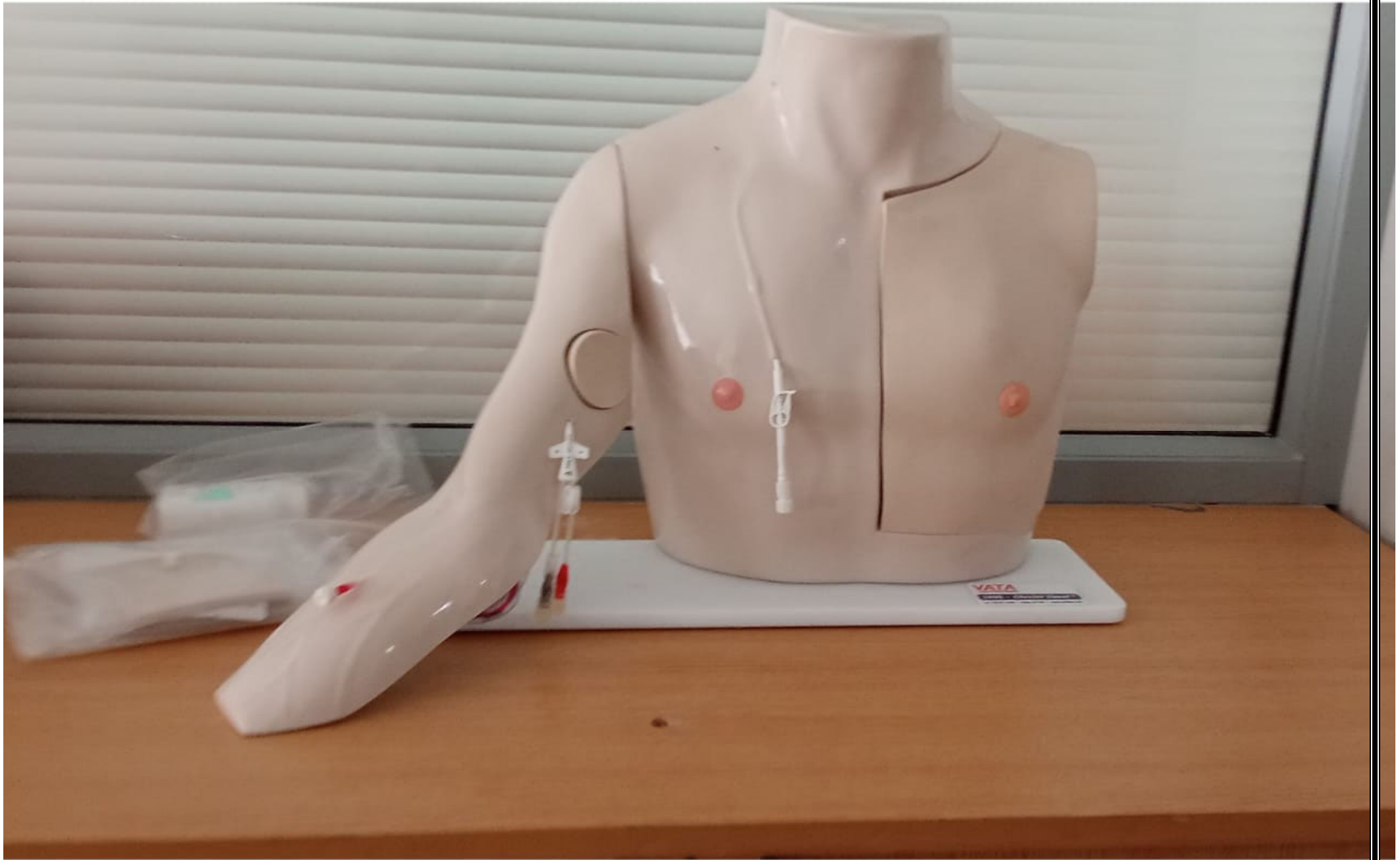
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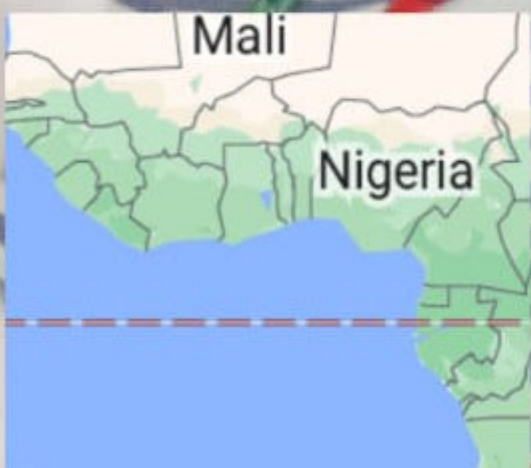


*Chester Chest with  
advanced right arm*



*Truman trauma*





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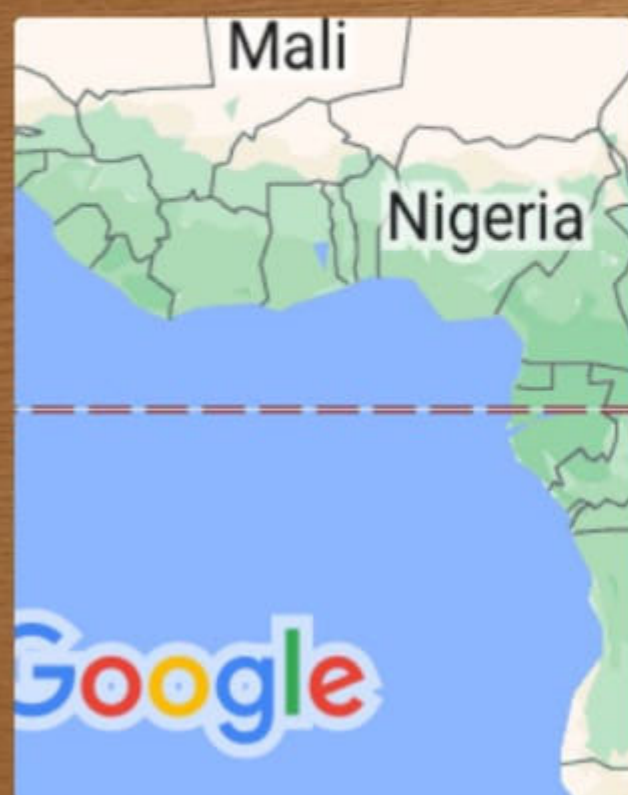


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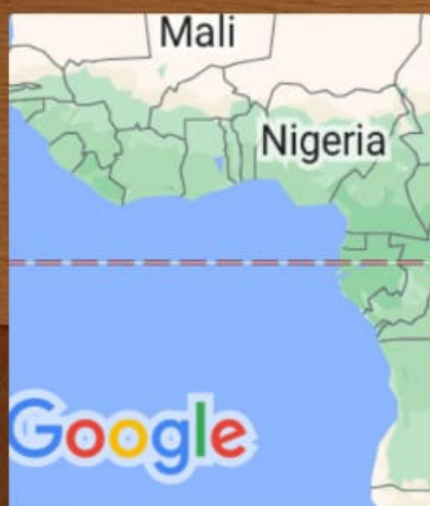
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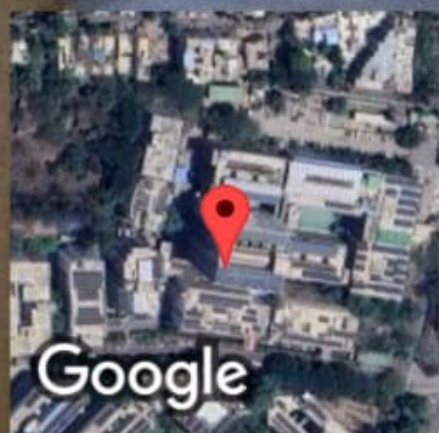
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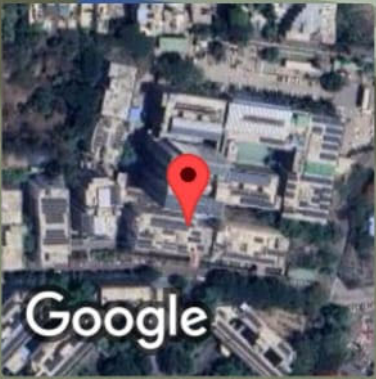
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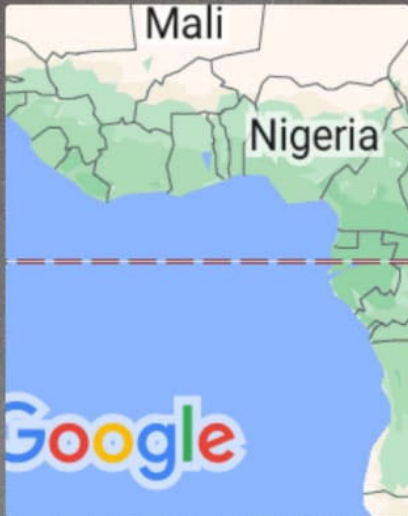






*Anatomage*  
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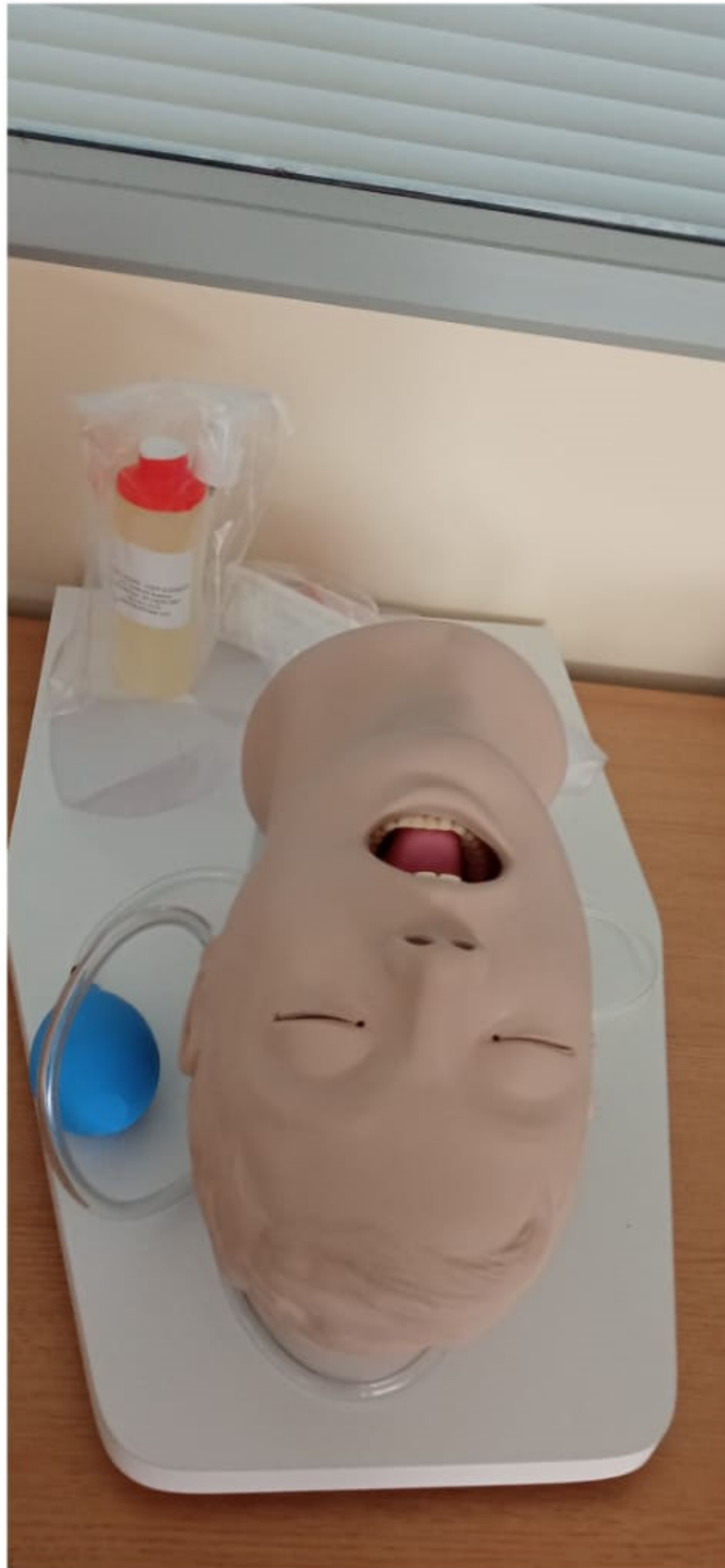
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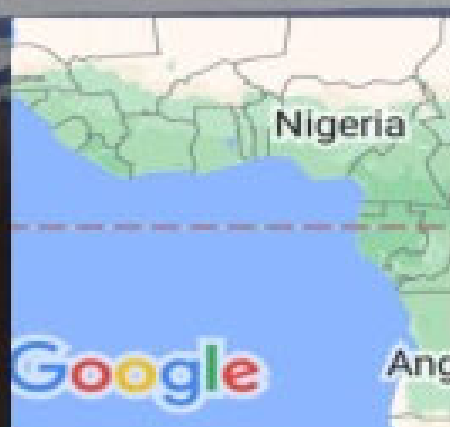


*airway intubation*





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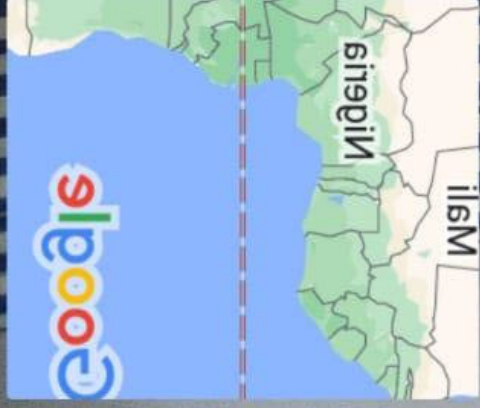
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сйбл, сурлалелл, Индла



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## **List of Manikins**

The simulation lab is well equipped with a plethora of manikins ranging from high technology to task trainers to support a wide spectrum of learners and learning outcomes.

### **High Fidelity Simulators**

Lucina - Maternal Foetal Simulator with advanced birthing mechanism

Sim Man 3G – adult advanced simulator

Aria – Paediatric manikin

Luna – Neonatal high-fidelity manikin

### **Mid Fidelity Simulators**

Ares – ACLS manikin

Juno Base – Nursing manikin

Megacode Kid

Resusci-Anne ACLS manikin

Nursing manikin

Premature Anne

### **Blue Phantoms ultrasound guided manikins**

Central Line Trainers

Sciatic Nerve Regional Anaesthesia Ultrasound Training Model

Lumbar and thoracic Puncture and Spinal Epidural

Abdominal Paracentesis

### **Laparoscopy trainer**

**Anatomage Table** - virtual dissection Table

### **Task trainers**

Injection trainers

BLS manikins – adult paediatric and infant

Airway trainers

Chest drain manikin Spinal and epidural simulator

Birthing manikins

Gynac examination simulator

Wound care and bandaging manikin

Nursing mannequin

Breast examination model

Episiotomy trainer

Catheter simulator

Eye and ear model

## **Guidelines**

Here are comprehensive guidelines for using a simulation lab to ensure a safe, efficient, and productive environment, enhancing the learning experience and maintaining high standards of practice.

### **General guidelines**

1. Professional behaviour should be maintained by all the users at all times, not disturbing the academic activities occurring in the lab.
2. Sessions should be scheduled in advance and adhered to the allocated time slots.
3. Any scheduling conflicts or changes should be reported as soon as possible.
4. All the users including faculty, staff and learners are expected to be punctual for their sessions.



5. Discipline should be maintained by users and instructions by lab staff should be followed.
6. Photography and video recording by users is strictly prohibited unless authorised to do so.
7. Appropriate attire, including change of footwear and any required personal protective equipment (PPE) should be worn.
8. Personal items such as bags, coats, and electronic devices should be kept in designated storage areas.
9. Food and beverages are not allowed inside the lab.
10. Requirements for a session should be shared in a standardized format and checked beforehand
11. Workshops planned should be informed at least 2 months in advance and will be scheduled as per availability of simulation lab. The local workshop co-ordinator will be responsible for sharing and ensuring availability of consumables.
12. The learners have to sign a '**Confidentiality agreement and consent for video recording for educational purpose only**'.

### Use of Equipment

1. Universal aseptic precautions should be followed when handling manikins
2. All faculty and students should have completed orientation and appropriate training to handle the equipment.

3. Do not use the equipment for any purpose other than that specified.
4. Any equipment malfunction must be reported immediately to the lab in charge.
5. Prior written permission from in charge is mandatory take equipment out of the centre.
6. Pens and markers are strictly prohibited to be used near the mannequins.
7. The simulation lab should be left clean and tidy by all learners and staff after a session.
8. Use of computers, mobile phones and video equipment are restricted to session work and not for personal use.
9. Use of any biohazardous material such as blood, urine or human tissue is prohibited in the simulation lab.

## **Programs**

1. Undergraduate skill training: Competency based curriculum has highlighted the importance of skill training. A robust training program is conducted by the individual departments for certifiable skills using a checklist-based methodology to ensure standardization. The students learn an array of procedural skills such as venipuncture, suturing on manikins in a safe simulated environment. Competence is ensured by certification of skills prior to conduct on actual patients.



2. Intern' training: Acute care training is designed to equip the interns with knowledge, skills and attitudes to manage acutely ill patients across adult, paediatric, neonatal and obstetric patient population. It is aimed to empower interns to handle a wide spectrum of emergencies and provide acute care to sick patient including resuscitation, respiratory failure, shock, neurological emergencies, chest pain and stroke. . acute care

3. Postgraduate training: Simulation is integrated in the PG curriculum with complex skill training, virtual anatomy, POCUS and USG guided procedures and basic laparoscopy skills. Immersive simulation scenarios focused on acute emergencies are employed for training in decision making, communication skills along with team dynamics. Foundation course targets the first-year postgraduates in anaesthesiology and prepares them in systematic assessment and management of patients in the perioperative period.

4. Nurses training: Nursing students undergo basic skills training, competency-based induction course and advanced course for ICU nurses.

5. ACR: Advanced Cardiac Resuscitation aims to train postgraduate students, faculty, nursing staff working in critical areas and paramedics in basic and advanced cardiac resuscitation skills, including identification and management of arrhythmia, cardiac arrest with post-cardiac arrest care.

6. AHA BLS/ACLS: American Heart Association's Basic Life Support course trains the participants to recognize cardiac arrest, high-quality chest compressions, ventilations and early use of an AED. Advanced cardiac life support course is focused on algorithmic management of life-threatening cardiovascular emergencies.

7.ATLS: Advanced Trauma Life Support workshop by the American College of Surgeons trains doctors in providing emergency care for trauma patients within golden hour with a focus on triaging, systematic assessment, airway management and imaging.

8.PALS: Paediatric Advanced Life Support course is focused on imparting the skills to recognise life threatening conditions, intervene to stabilize the physiological impairments and to support life in paediatric patients, targeting paediatric trainees, professionals and nursing staff.

9.NRP: Neonatal Resuscitation Program is an educational program that equips paediatricians, neonatologists in the concepts and basic skills of new-born resuscitation.

10.VAST: Vital Anaesthesia Simulation Training course endorsed by WFSA is designed to train perioperative teams comprising anaesthesiologists, surgeons and nurses in management of perioperative crisis situations right from assessment to intraoperative to postoperative management. It is focused on crisis resource management principles and non-technical skills, highlighting human factors and team dynamics for patient safety.

11.Simulation in anaesthesia series endorsed by the Society of Anaesthesiologists, Pune: Anaesthesia being highly dynamic speciality offers limited opportunity for training in management of critical events. Anaesthesia emergencies mandate a display of knowledge, technical and non-technical skills which can be learned through simulation-based training. With this perceived need, a series of theme-based workshops are designed to provide a highly experiential and interactive learning platform.

12.BASIC: Basic assessment and support in Intensive care course is endorsed by various critical care medicine societies and covers



essential and fundamental aspects of intensive care for trainees in Medicine, Pulmonary Medicine, Anaesthesia and Emergency Medicine.

13.Outreach Program: In congruence with the institutional vision of social responsibility, basic life support training is conducted to train citizens; teachers, gym trainers, marathon volunteers, ambulance paramedics and general practitioners to recognize arrest, give high-quality chest compressions, deliver appropriate ventilations and use of an AED.