8&9. Obstetric examination with IUCD

Technical Specification

1.Delivery manikin should be capable to provide training for normal delivery.

2. Should have manual mechanical birthing system to enable the user to control the rotation and speed of fetus delivery etc.

3. The abdominal palpation mannequin should have an articulating full-term fetus with palpable fontanelles, spine, shoulders, elbows, and knees with adaptors to fit with manual birthing system.

4. Should be versatile to change the position of the fetus during the process of birth including descend, flexion, extension, internal and external rotation, restitution.

5. The abdominal palpation mannequin should have upper and lower inflatable cushions with independent inflating devices in the abdominal part of the mannequin • Lower cushion when inflated should raise the fetus to desired position • Upper cushion when inflated should create a firm abdomen as in the ninth month of pregnancy

6. Shall have adaptive birth canal to demonstrate dystocia and deal with its relief

7. Should have features to demonstrate cord prolapsed

8. Shall allow demonstration and practice of placenta previa

9. Should have cervical dilatation attachment for closed os, 4cm, 6cm, 8cm and fully dilated cervix

10. Should have features simulating/represent conditions of the cervix and vagina prior to labor, during labor and at birth in a primgravida woman

11. The abdominal mannequin should be able accommodate the fetus in vertex, breech, or transverse positions.

12. The abdominal mannequin should have the facility to accommodate the fetus of different gestationalage, demonstrate vertex / Breech / transverse position delivery, and attach the perineum to demonstrate the episiotomy repair.

13. List of training scenarios which should be there: • Normal delivery • Abnormal labour and other complicated deliveries • IUCD Insertion • Bleeding • Urine bladder catheterization • Uterine massage • Uterine compression • PPH and communication training

14. Material of the manikin should be latex-free

15. Digital examination and use of speculum should be possible in mannequin

16. Water based lubricant should be supplied for examination

17. Perineum and labia should be soft for realistic anatomical examination

18. List of accessories which should be there: • Detachable Manual mechanical birthing system with mounting flange • One fully articulating fetal baby with adaptors to fit with manual birthing system • Elevating cushion for Leopold manoeuvres • 6 detachable dilating cervices • 6 detachable Vulva • 9 vulvar inserts • 6 placentas • 9 umbilical cords • One 48hour postpartum uterine activity assembly • One postpartum perineal insert • Reusable episiotomy repair module (set of 5 including median tears, mediolateral tears and standard • mediolateral episiotomy) • 10 – 12 Weeks Pregnant • 14 – 16 Weeks Pregnant • 2 sets cervical dilatation attachment for closed os, 4cm, 6cm, 8cm and fully dilated cervix • Manikin should come with carry bag

19. ISO certification should be there

8.Gynaecologicale xamination simulator

Technical Specification

Manikin should be used for accurate anatomical and tactile representation of the female pelvis for diagnosis of pathologies and abnormalities. Different pelvic modules should be changeable during the training

1 Abdominal wall should be removable and should be able to make palpation

2. Material of the manikin should be latex-free

3.. Digital examination and use of speculum should be possible

4. Water based lubricant should be supplied for examination

5.. Perineum and labia should be soft for realistic anatomical examination

6. Interchangeableuterinemodulesshould beavailablewith different complications

7. Different modules should include anus and lower bowel

8. List of modules should be part of standard set of manikins: - Normal Nulliparous Cervix - Large Fibroid – Nulliparous Ectropion Cervix - Small Fibroid – Nulliparous Polyp Cervix - Ovarian Cyst – Multiparous Cervix - Retroverted - Multiparous Cervix

9. List of skills to be trained on manikin: - Recognition of perineal and pelvic anatomy including bony landmarks - Digital vaginal examination - Bi-manual examination - Cervical smear procedure including use of speculum - Digital rectum examination

10. Carry case should be supplied

11. ISO certification should be there

9. MANNEQUIN FOR CONDUCT OF DELIVERY

Technical Specification

1. Should have hemi pelvis of adult female with anatomical landmarks like pelvic cavity, spine etc. should have manual mechanical birthing system to enable the user to control the rotation and speed of fetus delivery etc
2. Should have articulating fetal baby with adaptors to fit with manual birthing system
3. Should be versatile to change the position of the fetus during the process of birth including descend, flexion, extension, internal and external rotation, restitution.
4. Should have features for training normal and breech deliveries
5. Should have inflatable cushions to life fetus for Leopold maneuver during pregnancy
6. Shall have adaptive birth canal to demonstrate dystocia and deal with its relief
7. Should have features to demonstrate cord prolapsed
8. Shall allow demonstration and practice of placenta previa
9. Should have cervical dilatation attachment for closed Os, 4cm, 6cm, 8cm and fully dilated cervix
10. Should have features simulating /represent conditions of the cervix and vagina prior to labor, during labor and at birth in a prim gravid woman

Additional accessories:

1. One detachable padded stomach cover
2. Detachable manual mechanical birthing system with mounting flange

3. One fully articulating fetal baby with adaptors to fit with manual birthing system
4. One elevating cushion for Leopold maneuvers
5. 6 detachable dilating cervices
6. 6 detachable vulva
7. 9 vulvar inserts
8. 6 placements 9.
9 umbilical cords
10. One 48 hour postpartum uterine activity assembly
11. One postpartum perineal insert
12. Reusable episiotomy repair module (set of 3including medial tears, mediolateraltears and standard mediolateral episiotomy
13. 2 sets cervical dilation attachment for closed Os, 4cm, 6cm, 8cm and fully dilated cervix

10.Neonatal & Pediatric resuscitation mannequins

Pediatric resuscitation mannequins

Technical Specification

- The manikin should be realistic in appearance with half body child torso.
- The manikin should have a soft nose which can be occluded using the nose pinch technique.
- The manikin should be able to facilitate a head tilt/chin lift technique to open the airway and have an articulating jaw to facilitate a modified jaw thrust manoeuvre.
- The manikin should have visible chest raise and wireless feedback during ventilation.
- The manikin should have a disposable lower airway with an integral one-way valve.

- The manikin should have a compression clicker which provides audible feedback.
- Feedback The pediatrics BLS Torso should be able to connect with wireless tablets, smart phones and/or LCD wired feedback providing both student and instructor feedback.
- Wireless Instructor Feedback
- Software shall be available for free downloads as many times as required providing real-time wireless feedback on compressions and ventilations It shall be able to monitor and connect to get the live feedback from more than 5 individual BLS Torso mannequins simultaneously for group training.
- It shall help provide improvement tips based on CPR performance
- Compression depth, rate release, time and chest compression fraction
- Indication of too little, OK or excessive ventilation volumesWireless Student Feedback
- Wireless Student Feedback Software shall also be available for free downloads as many times as required providing real-time wireless feedback on compressions and ventilations, students can view and monitor their own performance for the following points
- Compression Depth and Rate
- Incomplete Release
- Ventilation volume
- It also provides with a summative feedback on the:
- Overall CPR score
- Improvement suggestions
- CPR duration

10. Neonatal Resuscitation Training Manikin

Technical Specification

1. It should be a newborn manikin with anatomical accuracy designed for skills training in neonatal resuscitation to focus on the critical resuscitation skills required in the first ten (10) minutes of a newborn's life,

2. It should realistically simulate a 50th percentile, 40-week newborn (term baby), measuring 21 inches (51cm) and weighing approximately 7 lbs (3.5 kg).

3. It should have provision of simulation of Airway Management

4. Infant Intubation Head - real—tic life-size intubation trainer with a flexible tongue, arytenoid cartilage, epiglottis, vallecula, vocal cords, trachea, esophagus, and simulated lungs

5. Positioning the newborn to simulate opening the airway via head tilt, chin lift or jaw thrust

6. Positive pressure ventilation (Self-inflating bag, Flow-inflating bag (anesthesia bag), or T-Piece Resuscitator)

7. Provision of ET tube / LMA insertion, Orogastric tube insertion

8. Stomach distension (when ET is misplaced)

9. Suctioning (of the nares, nasopharynx, esophagus and lungs via an ET tube)

10. Meconium module for suction removal

11. Realistic rise and fall of the chest

12. The following skills can be practiced: Nose and mouth suctioning, Oropharyngeal and nasopharyngeal airway insertion, Bag-Valve Mask Ventilation, Chest compressions, Bilateral and unilateral (with mainstem intubation) chest rise and fall with mechanical ventilation, Pneumothorax – needle thoracentesis left mid-axillary

13. Cardiac Features: Manual chest compression at appropriate depth (1/3 AP) and force, Umbilical pulse – variable via manual pulse bulb

14. Circulation Features: Umbilical vein / artery access via patent umbilicus, IO access in left and right lower leg, tibial tuberosity and medial malleolus

15. NG Tube Insertion

16. Practice care, medication administration and removal Stomach reservoir to allow fluid return

17. Umbilical Catheterization Procedures: Umbilical reservoir to allow fluid return, Retractable umbilical cord with two arteries and a vein facilitating high and low UAC and umbilical vein catheter procedure

18. It should be supplied with: Newborn Manikin Meconium Module Set, Replaceable Umbilical Cord (1) and clamp, IV Bag Connector Tube, Pulse Bulb (manual umbilical pulse), Airway Lubricant, Blood Concentrate, Baby Powder, IO Fill/ Empty Syringe, Baby Pants, Manual and Carry Case.

5.Mannequins for Urine Catheter insertion

Technical Specification

- Manikin simulator must have a life-size adult female pelvis with interchangeable male genitalia.
- Urologic and rectal access gastrointestinal care procedures must be practice-able on manikin.
- Manikin should have realistic articulation which enables proper positioning for procedures
- Male and female genitalia, both must be usable with urinary connectors and reservoir
- Manikin genitalia must be used with anal connectors and colon reservoir
- Urologic care procedures such as perineal insertion of vaginal medications and indwelling catheter insertion, care, irrigation and removal must be practice able on manikin genitalia when used with urinary connectors and reservoir
- Enema administration can be facilitated using fluid for realistic return when manikin genitalia is used with anal connectors and colon reservoir
- Manikin abdominal plate must have single plug valve and interchangeable stoma site
- Simulation of cystostomy tube care and urinary diversion stoma care must be practiced on manikin.
- Reservoir can be pressurized during urinary catheterization procedures
- Bilateral thigh, dorsal gluteal, and ventral gluteal IM injection must be practice able on manikin
- It should be ISO certified.

Catheterization and Enema Trainer must include:

- Adult female pelvis with upper thighs Male and female genitalia with six (6) anal and urinary connectors Carry Case

6.Mannequins for Skin & Fascia suturing

Technical Specification

The model should have following features:

1. Soft skin allowing wound stitching multipletimes

2. Scope of new wound creation andsuturing

3. Should be Light andcompact

4. Should have Transparent structures to allow the trainer to observe and access traineecompetence

5. Mechanism or system to represent tissuestrength

6. Parallel knotting tubes should be elastic for a realistic tissueresponse

7. Should be Latexfree

8. 2 perioperative openings represented by: Small, shallow fixed cylinder for tying in a smallopening

9. Large, deep removable cylinder, reversible for angled abdominal and gynecological depthtying

10. Skills to be gained using this model: One-handed reef knot technique, Instrument tie, Surgeon's knot slip knot, tying in a small opening, tying at depth vertically in a large opening, Tying at depth, at an angle, in a largeopening

11. It should be ISOcertified

3.Adult intramuscular Injection Training Mannequin

Technical Specification

1. The material of mannequin should be of polyvinyl or silicone rubber, free from any hazardous materials.

2. The texture of the mannequin should be as close to the feel of the baby/adult skin as relevant.

3. The Internal parts of the mannequin must be realistically sculpted, anatomically accurate and feel must be smooth/resilient/bony as relevant and suitable for simulation.

4.Intramuscular injection training model should have lifelike human torso with intramuscular injection site in upper outer quadrant of palpable gluteal region on both side(left and right)

5.Should have intramuscular injection in ventro gluteal site below iliac crest on both side(left and right)

6.Dimension:60X60X30CM

3.Manikins for Intravenous Training (Arm)

Technical Specification

It should be used for the following advanced training:

1. The insertion of cannulas and catheters

2. The infusion of fluids and the injection of medication

3. Draw blood sampling

4. Training arm must have design of life-like adult arm

5. Arm reproductions must have replaceable skin and multi vein system to ensure longevity of training arm

6. Venepuncture must be practiced in antecubital fossa or dorsum of the hand

7. Peripheral IV lines insertion and removal must be performed

8. Accessible veins should include median, basilic and cephalic

9. Palpable veins should have ability to enable site selection and preparation

10. Infusible veins must allow peripheral therapy with IV bolus or push injection method.

2. Mannequins for Basic Life Support (BLS), CPR (Cardio Pulmonary Resuscitation)

Cardio Pulmonary Resuscitation CPR

Technical Specification

Definition:

A specially-constructed doll with simulated respiratory and cardiovascular functions designed to demonstrate and teach resuscitation techniques that include chest compressions [cardiopulmonary resuscitation (CPR)]. GENERAL

1. USE

1.1 Clinical purpose:It is used to demonstrate nose pinch required for ventilation techniques. Head tilt/chin lift and jaw thrust allowing students to currently practice all manoeuvres necessary when resuscitating a real victim.

1.2 Used by clinical department Skill lab

2. TECHNICAL CHARACTERISTICS

2.1 Technical characteristics (specific to this type of device)

1. The material of mannequin should be of polyvinyl or silicone rubber, free from any hazardous materials.

2. The texture of the mannequin should be as close to the feel of the baby/adult skin as relevant.

3. The Internal parts of the mannequin must be realistically sculpted, anatomically accurate and feel must be smooth/resilient/bony as relevant and suitable for simulation.

4. It should have features to demonstrate opening of airway, head tilt/chin tilt and jaw thrust techniques.

5. Adult CPR Mannequin should have disposable airways.

6. Adult CPR Mannequins should have removable, reusable faces.

7. Adult CPR mannequin should have an indicator which confirms correct chest compression technique.

8. It should have compression spring for consistent resistance.

2.2 Settings

2.3 User’s interface

2.4 Software and/or standard of communication (where ever required)

3. PHYSICAL CHARACTERISTICS

3.1 Dimensions (metric) adult torso

3.2 Weight (lbs, kg)

3.3 Configuration

3.4 Noise (in dBA)

3.5 heat dissipation

3.6 Mobility, portability

4. ENERGY SOURCE (Electricity, UPS, Solar, Gas, Water, CO 2 ....)

4.1 Power Requirements

4.2 Battery operated

4.3 Tolerance (to variations, shutdowns)

4.4 Protection NA

4.5 Power consumption

4.6 Other energy supplies

5. ACCESSORIES, SPARE PARTS, CONSUMABLES

5.1 Accessories & spare parts : 10 nos..

reusable mannequin faces. 10 nos..

reusable airways. 50 nos.

mannequin wipes.

STANDARDS AND SAFE TY

7.1 Certifications: BS EN ISO/IEC 17050-1:2010 Conformity assessment. Supplier's declaration of conformity. EMC Directive:2004/108/EC.

8. TRAINING AND INSTALLATION

8.1 Pre-installation requirements: nature, values, quality, tolerance

8.2 Requirements for sign-off Demonstration to the users while delivering the product.

8.3 Training of staff (medical, paramedical, technicians) Training of users in handling and basic maintenance shall be provided.

Basic Life Support (BLS)

Technical Specification

- This manikin should focus on complete BLS training, where students learn quality CPR with real-time feedback from the manikin, BLS Protocol.
- The training system should have facility to get connected to a hand held control device for real-time CPR performance feedback with ventilation and compression as per AHA 2015 guidelines.
- The training system should allow further AHA and European resuscitation council guidelines to improve feedback with quality.

Features:

1. The manikin should be a full body adult CPR training manikin with anatomically correct landmarks and sternal notch allow the students to practice identification of all anatomical landmarks relevant to adult CPR.

2. Realistic resistances of chest compression allows the students to experience the amount of pressure needed to perform proper chest compression in a real life situation like.

3. The manikin should stimulate natural obstruction of the airway allows students to learn the important technique of opening the airway according to ILCOR guidelines. Occluded airway with hyperextension stresses proper head position.

4. Head tilt/chin lift and jaw thrust allows students to correctly practice airway manoeuvres necessary when resuscitating a real victim.

5. Ventilation of the manikin must be possible through the following procedures:

• Mouth to Mouth

• Mouth to Nose

• Mask to mouth (Both Pocket Mask and Bag-Valve Mask(BVM))

6. The manikin must show a realistic chest rise during ventilation. The manikin should have disposable airways and easily removable face skin to avoid cross contamination.

7. The feedback system should be wireless and a graphical user interface. Feedback should compile following features: ¾ Compression Depth ¾ Compression release (recoil) ¾ Compression frequency/score. ¾ Ventilation tidal volume/score ¾ Ventilation frequency/score. ¾ Correct hand placement. ¾ Session time.

8. Adjustable limits/thresholds for compression and ventilation (default set to Guidelines G2015)

9. Simple to use software for PC that measures the quality of CPR, providing real-time and summative feedback on compression rate, depth, release, hands-off time and other critical components of high quality CPR as defined in the American Heart Association Consensus Statement.

11. Whole body mannequins

Technical Specification

1.The Manikin should allow for high- quality airway management with supraglottic airway device.

2. Oral & Nasal airway insertion.

3. Oral and nasal fiberoptic intubation

4. Reaslistic airway anatomy including cricoid cartilage (ore- and Nasophyarynreal airway , Sallick maneuver)

5. Auscultation of lung sound during ventilation

6. Lung sound synchronized with breathing rate

7. Individual lung or bilateral sound selection

8. Airway complication (instructor controlled)

9. Brachial pulses & Radial Pulses : Pulse strengths dependent on blood pressure,

10. Heart sound , synchronized with programmable ECG.

11. Control physiological responses Scenario event registration & detailed event log.

12. Intutive touchscreen interface to run both preprogrammed andcustom scenarious for standardized training.

13. Instructors real-time performance indication for compressions, ventilation and hands-off time , as well as event logs for structure and objective debriefing.

14. Automatic breating with realistic cheast rise & tall

15. Automatically generated carotid pulses synchronized with ECG.

16. Live defibrillation and synchronized ECG

17. Blood Pressure auscultation (Korotkoff sounds synchronized with ECG)

18. 4 leads ECG monitoring

19. Pulse monitoring.

20. Voice lung (Crackles , Pneumonia, Stridor, Wheeze, Rhonchi) and heart (aotic Stenosis, Friction Rub Austin Flint Murmur ,Diastolic, Murmur) sound for basic sound training

21. Detailed information about chest compression and release compression rate , ventilation volume feedback to measure and improve CPR performance.

22. The Manikin should be supplied with simulated patient monitor

23. Pulse monitoring

24. Voice , lung and heart sound for basic sound training

25. Detailed information about chest compression and release, compression rate, ventilation volume feedback to measure and improve CPR performance

26. The Manikin should be supplied with simulated patient monitor

27. Manikin should have European CE/USFDA Certification.

1.Mannequins for First aid, Bandaging, splinting

Technical Specification

- The First Aid Training Manikin is a lifelike full-body adult manikin designed for teaching used for teaching CPR and First Aid through the use of realistic interchangeable wound modules.

It should have the following Features:

- Realistic head tilt/chin lift
- Obstructed airway
- Protection from cross-contamination
- Reusable mouthpieces may be sanitized to current regulations
- Airways are disposable
- Realistic landmarks
- Authentic chest rise and fall
- Closely simulates an actual victim when ventilating

- Abdominal thrust
- Carotid pulse simulation (manual)
- Full range of movement and rugged for indoor and outdoor scenario use

Wound Modules

- Head Wound for bandaging
- Sucking Chest Wound is made into the chest skin, simulated blood may be manually
- expelled using a pulse bulb Burn Arm simulates first, second and third degree burns illustrated with blistering in
- progressive sequence
- Compound Fracture – Radius simulates exposed proximal portion of radius
- Projectile – Entry & Exit Set simulates large and small calibre entry and exit wounds
- Exposed Viscera simulates abdominal wound with protruding abdominal contents
- Impaled Object – Leg simulates metallic object imbedded in thigh
- Compound Fracture – Femur simulates exposed fractured femur protruding from mid thigh
- Closed Fracture – Tibia & Fibula - palpation of fracture is possible First Aid Training

It should include the following standard accessories:

- Washable Jacket & pant or jogging suit
- Carrying case
- 5 CPR mouthpieces
- 100 disposable airways
- Simulated blood (2 ltr)
- Lubricant or polish

7. Manikins for Breast Examination Trainer

Technical Specification

1. Manikin should be having latex free material and also having soft tissues for real like look

2. Manikin should be wearable

3. Hard torso should be supplied with manikin as a standard package for bench top use

4. Pathologies should be changeable and should be placed in various predetermined location points

5. Clavicular & axilla pads should be there for lymph node placement

6. OSCEs should be performed

7. Skills should be gained: - Clinical breast examination techniques (CBE & SBE) - Professional-to-patient communication - Identification of anatomical landmarks & lymph nodes (axillary, supra & infraclavicular) - Location & diagnosis of pathologies

8. List of Pathology accessories should be supplied as a standard package: - Carcinomas: 2 cm, 3 cm, 5 cm, cyst, fibrocystic disease, fibroadenoma - Simulated carcinoma & fibroadenoma

12.Trauma mannequin

Technical Specification

- The Manikin should be a superior trauma and extrication manikin with three interchangeable heads: standard and trauma intubation heads and fracture Head. It should come with a wide range of trauma wound modules to enhance scenarios.

Features:

- Fracture head facilitates facial and cranial trauma assessment including an open depressed skull fracture, deviated trach, bilateral mandible fractures, and fracture of the C6 vertebrae.
- Standard intubation head should allow airway management by manual maneuvers and various airway devices.
- Trauma intubation head should have an impaled object in the cheek, avulsed ear, unequal pupils, broken teeth and multiple lacerations.
- Interchangeable bullet wound chest module for assessment and care.
- Full body manikin can be used for extrication and triage exercises.
- Realistic articulation for application of cervical collars, splints and traction, or application to spine board.
- Complete trauma module se to add realism to training scenarios.

- Carry case is provided for storage and transportation.

4. Mannequins for Ryles tube insertion

Technical Specification

1. Should look like 0-8 weeks old and Caucasian colour
2. Should have soft and flexible and replaceable face skin and upper body skin
3. Should offer NG exercises to demonstrate tube feeding and gastric suction
4. Placing NP/OP tubes must be possible
5. Should have markings for ear canal
6. Should have removable internal parts