

Skills Lab Mannequins and Models for Simulation-Based Trainings

USER MANUAL



Maternal Health Division
Ministry of Health and Family Welfare
Government of India

October 2016

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स्वास्थ्य एवं परिवार कल्याण विभाग

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Government of India

Ministry of Health & Family Welfare

Department of Health & Family Welfare

Nirman Bhavan, New Delhi - 110011

P R E F A C E

Delivering quality healthcare in a timely manner through public health facilities is one of the main goals of National Health Mission. For this to happen, it is of paramount importance to ensure that the personnel providing the health services are trained so that they possess the skill sets required for delivering quality service.

It has been observed that there is a need to augment the knowledge and skills of health professionals for delivering quality services with adherence to the technical protocols to all clients accessing services at the government health facilities.

The decision to augment health professionals' training by establishment of skills lab and the assessment and training of those providers who are providing RMNCH+A services in the public health institutions is a major step taken by Government of India. A number of Skills labs have been set up in various States for competency based training. The mannequins and models used in these skills labs for simulation based training range from simple manual models to sophisticated mannequins. Hence, there arises a need to train the operators and handlers of these mannequins on how to operate, handle and maintain them in the most appropriate manner to optimize their utilization with minimal risk of damage. This manual intends to outline appropriate guidelines for operation, handling, storage and maintenance of the sophisticated models and mannequins used for simulation.

I am confident that this document will guide and help the operators and users of skill lab models and mannequins in using and handling them appropriately.


(Arun Kumar Panda)

New Delhi

3rd October, 2016

Healthy Village, Healthy Nation



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Talking about AIDS is taking care of each other

वन्दना गुरनानी, भा.प्र.से.
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FOREWORD

Ensuring quality of service in public health facilities is one of the important mandates under National Health Mission. It is of paramount importance that the service providers working at the health facilities are proficient in skills for providing quality services at health facilities particularly with reference to pregnant woman, mothers and new-borns.

At present the pre-service teaching and in-service trainings are largely focused on knowledge and provide limited opportunities for practicing and acquiring the key clinical skills. So there is a need for creating a simulated environment through practice on mannequins before the trainees are allowed to manage the live clients independently.

The skills labs established across the country for the pre-service teaching and in-service trainings are equipped with a specific set of models and mannequins. However, some basic instructions and handling tips should be kept in mind before operating and handling these mannequins for simulation and minimizing any damage. This manual explains the techniques for operating and handling the mannequins during, before and after the simulations. Also, it provides the basic information on the storage and maintenance of the skills lab models and mannequins.

I am certain that this manual will benefit the staff, coordinators and trainees accessing the skills laboratories across the country for simulations (both pre-service and in-service).

(Ms Vandana Gurnani)



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Program officer's Message

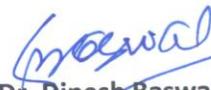
The overarching objective of National Health Mission (NHM) is to increase the accessibility of essential RMNCH+A services to the vast rural population of India. But the quality of care at the health facilities is not consistent throughout the country. To respond to the need for development of adequate number of competent and confident basic healthcare service providers, NHM had introduced competency based training and certification programme through skills lab.

Skills lab training is based on the principle of simulation. Here the learner will have the opportunity for repeated practice under the supervision of trainers. The aim of developing this manual is to equip the trainers to use and maintain the skills lab mannequins in a standardized way.

The user manual for the skills lab mannequins and models for simulation based trainings has been developed after extensive consultation with experts in the field of maternal and new born care in India. This manual explains the techniques for operating and handling the mannequins during, before and after the simulations.

I would like to acknowledge the contribution of all the members in developing the content of these User manual. I would especially like to appreciate the concerned efforts made by Dr. Bulbul Sood, Dr. Somesh Kumar ,Dr. Neeraj Agrawal & Dr. Swati Mahajan from Jhpiego, Dr. Manju Chungani, Jamia Hamdard and Dr. Ritu Agarwal,LSTM. I would like to thank my colleagues Dr. Veena Dhawan, AC(MH) and Consultants Ms Jenita, Dr. Rajeev, Dr. Tarun, Dr.Salima for their valuable inputs and support.

The User manual prepared by Maternal Health Division will help in the handlers of the mannequins to use the mannequin in the most effective and appropriate way for optimal utilization with minimal risk of damage. It is my earnest request to all the State Program officers to take personal initiative in creation of Skills lab for in service and pre-service trainings and ensure that this user manual is used while handling the mannequins. This will go a long way in optimum utilization & minimising their wear & tear.


(Dr. Dinesh Baswal) 7-X-16

Healthy Village, Healthy Nation



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Talking about AIDS is taking care of each other

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Picture credit: All pictures used in this manual are taken from the user manuals of Laerdal and Gaumard

ABBREVIATIONS

ANC	Ante Natal Care
ALS	Advance Life Support
BVM	Bag Valve Mask
CPR	Cardio Pulmonary Resuscitation
FHR	Foetal Heart Rate
FHS	Foetal Heart Sound
IUD	Intra Uterine Device
IUCD	Intra Uterine Contraceptive Device
IV	Intra Venous
IM	Intra Muscular
MVA	Manual Vacuum Aspiration
NBR	New Born Resuscitation
PPH	Post-Partum Haemorrhage
PPIUCD	Post-Partum Intra Uterine Contraceptive Device

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I. MamaNatalie

Introduction

MamaNatalie birthing simulator comes with a NeoNatalie and helps to create realistic scenarios for childbirth. It has been designed to facilitate an engaging role play that will make learning sessions for conducting deliveries memorable and efficient.



Uses and functions

MamaNatalie birthing simulator makes it easy to create very natural situations of complex or normal birthing scenarios. It is strapped on the waist of an operator, who takes the role of the pregnant woman and manually controls the training scenarios for childbirth and the other features.

- Development of communication skills during labour and delivery
- Realistic training in steps to control post-partum haemorrhage
- Foetal heart rate monitoring
- Urinary bladder catheterization
- Bleeding after birth, normal and excessive
- Simulation of cervix by cervical ribbon for bi-manual uterine compression of the uterus
- Simulation of contracted and atonic postpartum uterus
- Breech delivery
- Vacuum delivery
- Controlled cord traction, delivery of placenta and uterine massage
- Examination of placenta (Incomplete placenta)
- Normal delivery

Specifications



- | | |
|---------------------------|--|
| 1) Placenta | - Delivered complete, partially retained or fully retained |
| 2) Umbilical cord | - Connects to baby simulator. Palpable pulse, Cord complications (2 arteries and 1 vein) |
| 3) Urinary bladder | - Allows catheterization |
| 4) Rectum | - Allows medication |
| 5) NeoNatalie | - MamaNatalie gives birth to NeoNatalie, a highly realistic new born simulator. It has realistic size and appearance, and also natural weight, feel and touch when filled with lukewarm water and gives newborn shape. |
| 6) Blood tank | - Takes up to 1.5 litres. Valve for regulating bleeding intensity. Scale for measuring total blood loss. |
| 7) Uterus | - Contains baby, placenta and umbilical cord. Controllable uterine firmness, from atonic to fully contracted. |
| 8) Uterine Ribbon | - To strap around the cervix to form its length for bi-manual uterine compression |
| 9) Foetal Scalp | - To be put over the head of the NeoNatalie after filling it with water |
| 10) Plain Catheter | - For urinary catheterization |
| 11) Fetoscope | - To learn different positions of foetal heart sounds |
| 12) Penguin Sucker | - To fill the uterine kit with air and suck mucus from the newborn if indicated |

Consumables – Red blood concentrate to be mixed with water and diluted to create simulated blood. It is filled in the blood tank of MamaNatalie

Instructions to handle the mannequin

Preparation of MamaNatalie:

Assembling the mannequin-

- Fill the blood tank with red simulated blood diluted in water available in the bottle
- With the help of an Ambu bag, inflate the uterine kit attached to the skin of the mannequin
- After inflation, attach the uterine set with the clamp in the bone set of the mannequin
- Open and unzip the outer skin of the black pouch attached with the uterus
- Place the NeoNatalie inside the pouch and attach the placenta set with the inner side of the pouch
- Cover the blood tank of the mannequin with the skin set

The operator/trainer (who takes the role of the pregnant woman) then straps the mannequin around his/her waist and manually controls the delivery training scenario



Red simulated Blood



Filling of Red blood simulator in the blood tank



Inflating the uterine set and clamping it with the bone set preparation



Connecting the NeoNatalie and placenta with the main body



Connecting placenta and tapping the body for FHR monitoring

Preparation of NeoNatalie

Assembling of the mannequin

Filling NeoNatalie with water –

- Place NeoNatalie across a firm surface to provide support
- Pull out the filling extension from under the face skin
- Open the valve and blow air into the valve using bag mask ventilation device until the body is partially inflated. This will help the foils to separate from the body and allow easy filling of water
- Unscrew the filling cap and use a circular mask as a funnel while filling the water
- Fill approximately 2 litres of water from a tap or suitable container
- Screw the filling cap & open the air valve. Inflates air until body feels firm
- Close the air valve, bend the filling extension forward and push it under the face skin until it clicks into the holder

OR

Fill with air for immediate readiness

- Open the air valve and inflate air until the body feels firm. Close the valve and bend the filling extension forward and push it under the face skin until it clicks into the holder.



Opening the valve and filling NeoNatalie with water

Fit the hard skull with fontanelles onto NeoNatalie's head:

- Fold the sides of the hard skull upwards. Place the skull with the triangular frontal fontanel on the forehead.

- Unfold the sides of the hard skull downwards to cover NeoNatalie's ears. Feed the strap under the airways and secure through the small hole on the other side.
- Note: Do not tighten the strap over the airways as this will block free air flow and prevent successful ventilations.

During Procedure

- Operator taps on the bone sets with one hand during examination of foetal heart sounds in order to mimic the FHS.
- Operator during demonstration of normal delivery then push out the NeoNatalie downwards by pushing the chin with the thumb and fingers in the loops for stabilized pressure with both hands to facilitate the delivery in a phased manner.
- Once the NeoNatalie is out, place it over the abdomen of the mannequin. The umbilical cord attached to the foetal part will be separated from the baby for the delivery of placenta.
- The operator detaches the inner surface of the placenta attached with the skin of the mannequin and the trainer/learner pulls the umbilical cord down wards to facilitate the controlled cord traction for delivery of placenta.
- Operator opens the valve of the blood tank with the other hand during the delivery of placenta to facilitate bleeding complications and PPH.
- Operator keeps his hand under the skin of the mannequin from inside and presses on the uterine bag to facilitate the demonstration of atonic uterus (not contracted) and with contracted uterus.



During procedure, Delivery of head and delivery of placenta

Storage and maintenance

- After the procedure the blood tank and the NeoNatalie is emptied and all the parts are properly dried and cleaned.
- Fetoscope and umbilical cord with placenta set are packed in the box provided.
- The mannequin and the parts are then packed in the bag.
- In case of any damage to the specifications of the mannequin, the spare sets can be used.
- Mannequin inside the bag is stored inside a cupboard in the skills lab.



Mama Natalie Bag

2. Neo Natalie

Introduction

NeoNatalie is an inflatable simulator designed to teach basic neonatal resuscitation skills. Developed to meet the key requirements for teaching the initial steps of resuscitation in the first golden minutes of a newborn's life, NeoNatalie is an effective and cost-efficient tool to enhance the training program.

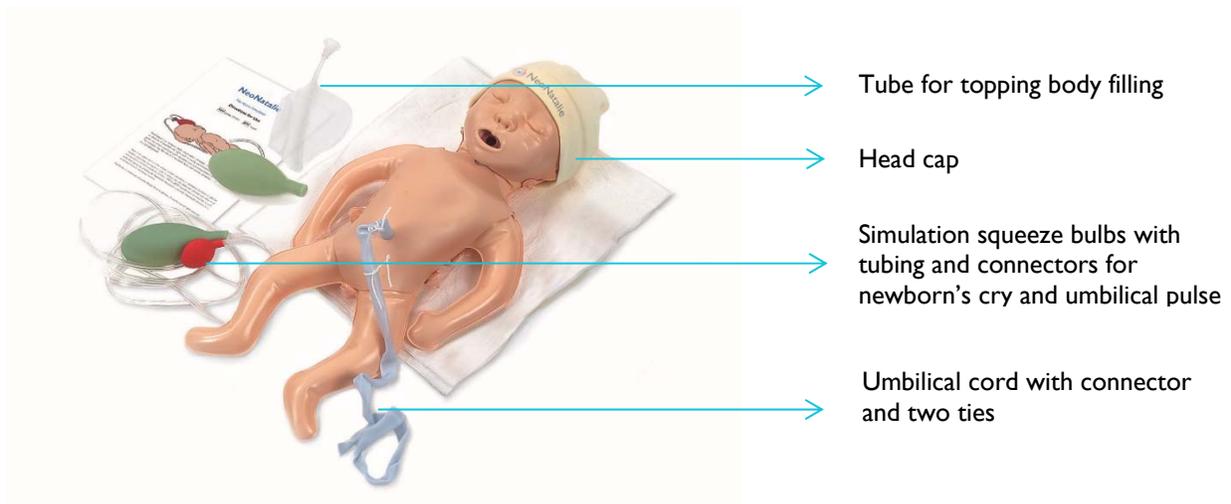


Uses and functions

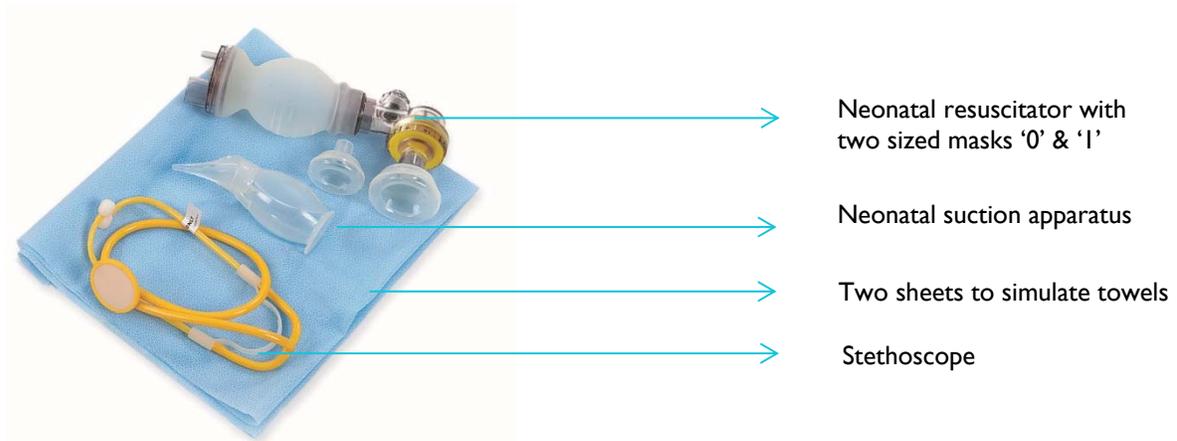
NeoNatalie is realistic in size and appearance with natural weight and when filled with lukewarm water, it gives the feel of a newborn. It consists of the following features:

- Spontaneous breathing (by pumping the breathing bulb)
- Palpable umbilical pulse
- Spontaneous crying of baby (by pressing the squeeze bulb)
- Immediate new born care
- Standard resuscitation with Ambu bag
- Resuscitation measures including positive pressure ventilation and closed chest compression

Specifications:



- Tube for topping body filling
- Head cap
- Simulation squeeze bulbs with tubing and connectors for newborn's cry and umbilical pulse
- Umbilical cord with connector and two ties



- Neonatal resuscitator with two sized masks '0' & '1'
- Neonatal suction apparatus
- Two sheets to simulate towels
- Stethoscope

Instructions to Handle the Mannequin

Preparation

Assembling the mannequin

Filling NeoNatalie with water –

- Place NeoNatalie across a firm surface to provide support
- Pull out the filling extension from over the face
- Open the valve and blow air into the valve using bag mask ventilation device until the body is partially inflated. This will help the foils to separate from the body and allow easy filling of water
- Unscrew the filling cap and use a circular mask as a funnel while filling the water
- Fill approximately 2 litres of water from a tap or suitable container

Screw the filling cap and open the air valve. Apply bag valve ventilation and inflate the open valve, inflate air until body feels firm

- Close the air valve, bend the filling extension forward and push it under the face skin until it clicks into the holder

OR

Fill with air for immediate readiness

- Open air valve and inflate air until the body feels firm, close the valve and bend the filling extension forward and push it under the face skin until it clicks into the holder

During procedure

Binding, clamping and cutting the cord –

- Attach the connector end of the separate umbilical cord to the umbilical stump
- Apply an umbilical tie or clamp around the cord, approx. 2 cm over and under the connector towards the NeoNatalie's abdomen. Put the second clamp at 5 cms from the NeoNatalie's abdomen.
- Simulate cutting the cord by detaching the cord at the connector, leaving the ties or clamps in place. (Actual cutting of the cord would quickly reduce the provided cord length hence should not be done)

Pulse palpation

When the simulation bulb set is attached, pressing the small red bulb rhythmically creates pulse beats in the sealed umbilical stump which extends from the mannequin.

Pulse can be felt by the examiner when the stump is held between forefinger and thumb.



Clamping and cutting the cord



Observing spontaneous breathing and palpating umbilical pulse



Newborn resuscitation using bag and mask

Storage and maintenance

- Clean the mannequin's exterior with a soft cloth wet in soapy water
- Wipe dry with a clean cloth or paper towel
- If NeoNatalie is deflated transport conveniently in its original cardboard box and storage pouch
- Each time after procedure empty the inflated water and air
- If a leak is developed, suspect incomplete closure of the filling air valve, or a puncture in the body, try to locate the puncture, close the puncture with a soft PVC patch and apply glue which is compatible with PVC.



3. Zoe® Gynec Simulator

Introduction

The ZOE® is a full-sized, adult female lower torso (abdomen and pelvis) model. It is a versatile training tool developed to assist health professionals to teach and learn the processes and skills required to perform certain gynaecologic procedures.



Uses and functions

Zoe® model facilitates the following procedures-

- Bi-manual pelvic examination of normal and pregnant uterus
- Vaginal speculum examination
- Visual recognition of normal cervixes and cervical abnormalities
- Uterine sounding
- IUD insertion and removal
- PPIUCD insertion and removal
- Diaphragm sizing and fitting
- Manual vacuum aspiration (MVA)
- Laparoscopic inspection and occlusion of fallopian tubes.
- Minilaparotomy (both interval and postpartum tubal occlusion)

Parts and attachments



Adult female torso



Uterus with round ligaments, ovarian ligaments, tubal fimbriae, and ovaries



Interchangeable uteri with normal and abnormal external pathologies



Normal and abnormal cervixes



Early pregnancy uteri



Interchangeable uteri

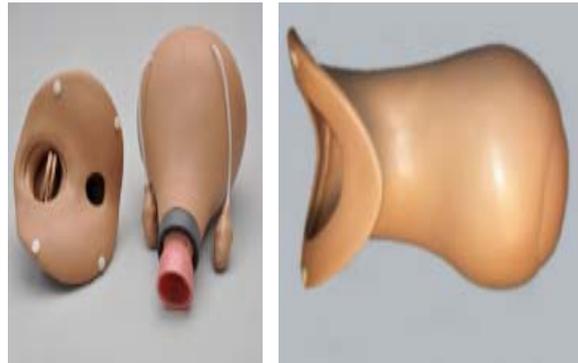
1. Palpation Kit

- One normal non-pregnant uterus
- 6 uterus with externally palpable pathologies



2. Post-partum IUCD insertion kit

- Uterus for manual and instrumental placement of IUCD immediately after delivery of placenta
- Uterus for insertion using instruments during the first 48 hours of delivery



3. Hysteroscopy simulator Kit

- One normal non-pregnant uterus
- 6 uteruses with internal pathologies – these pathologies can be viewed through a hysteroscopy



4. MVA kit

- 6 to 8 weeks uterus with round ligaments and patent os
- 10 to 12 weeks uterus with round ligaments and patent os
- Patent cervixes for 6-8 weeks and 10-12 weeks uterus

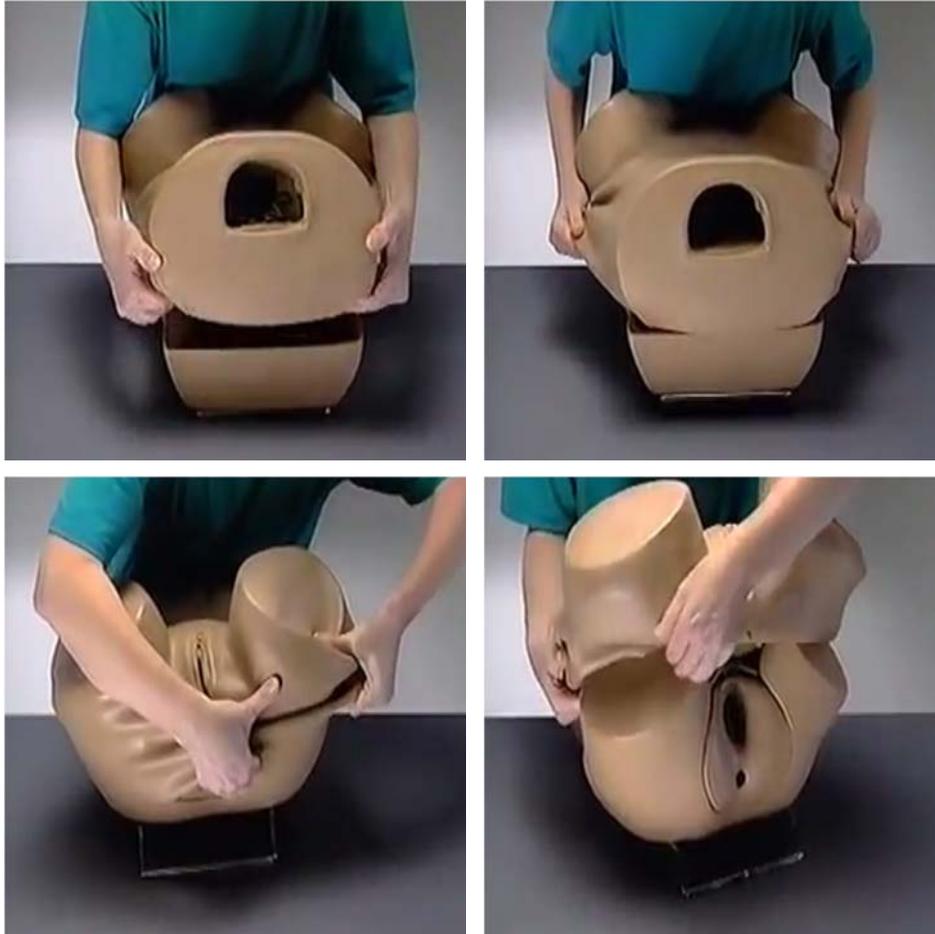
Instructions to Handle the Mannequin

Assembling

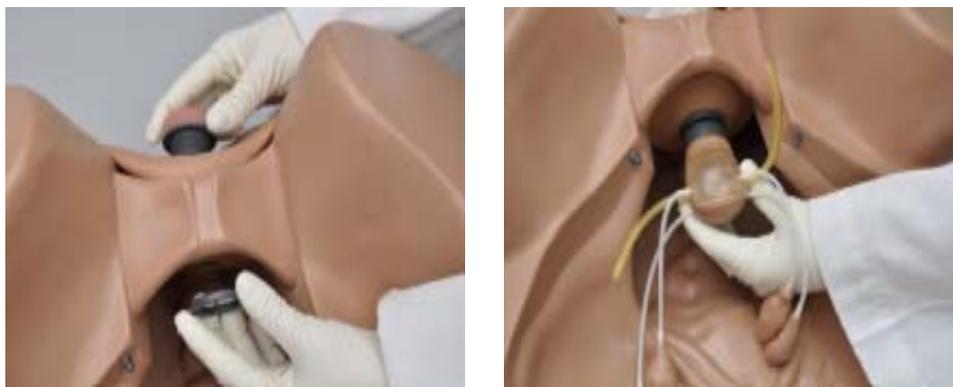
To view the Anatomical models inside the Zoe®:

- Remove the skin first
 - Start at the top of the model
 - Pull the skin and its foam lining away from the rigid base as one unit
 - Lift the skin up and over the leg (one leg at a time) and be as gentle as possible
- To change the uterus (attached to Zoe® and normal cervix)
 - Remove the uterus first
 - Pull the round ligament away from the wall
 - Hold the uterus steady while turning the wide grey ring counter clock wise until the cervix and uterine body are separated
- To remove the cervix
 - Turn the thin grey ring counter clock wise until it comes off
 - Then push the cervix out through the vagina
- To re-assemble the cervix and uterus
 - Select the type of uterus and cervix to be attached
 - Tighten the thin grey ring after attaching the cervix through the vagina and ensure that the cervix is locked firmly
 - If you choose the anteverted or retroverted uterus, attach the ovaries and tubal fimbriae and round ligaments with the uterus
 - If it is a postpartum uterus, only attach the fimbriae
- To replace the skin and foam lining
 - Start by pulling them around the legs (one leg at a time)
 - Make sure the rectal opening is aligning with the corresponding opening in rigid base
 - Pull the skin and foam over the top of the model
 - Finally make sure that both are pulled down firmly around the rigid base and the skin is smoothly fitted over the body

Once you understand how Zoe®'s anatomical parts fit together, it is advised to change the parts through the upper opening of the mannequin to preserve Zoe®'s outer shell.



Removing the skin from the body



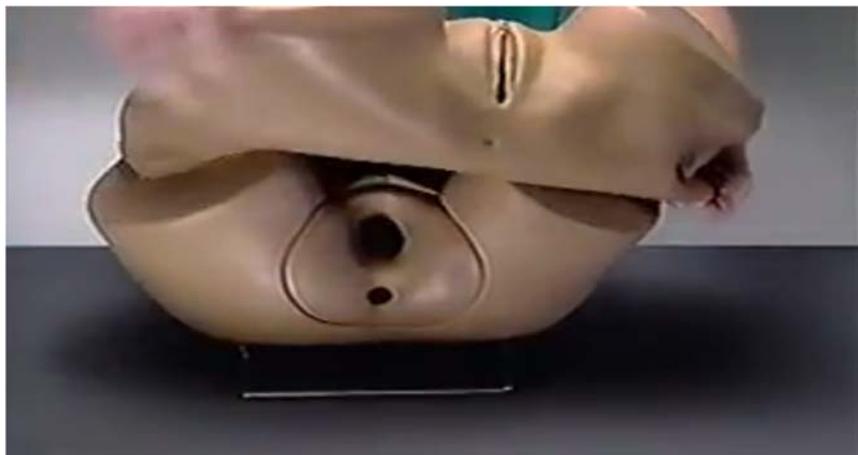
Separating the cervix and uterus from the body



Attaching Introitus with Vagina and Rectum



The duckbill cervix is already attached to the introitus with the vagina and rectum. To install the uterus, hold the cervix with one hand, and gently screw the wide locking ring with the other hand to set the body of the uterus in place.



Attach the skin & bring the duckbill cervix through the Vagina



Reinserting the cervix



Changing the parts through the upper opening of the mannequin

Storage and maintenance

- To avoid tearing Zoe®'s skin during procedures use a dilute soap solution to lubricate the instruments like speculum and your gloved fingers.
- Do not mark Zoe® with any markers or pen as these marks will never wash off.
- Do not use betadine or any other antiseptics.
- Clean Zoe® after every training session using a mild detergent followed by a clean water rinse.
- Store Zoe® in the plastic bag and blue nylon carrying case provided with your kit.



Cleaning and storage of the mannequin

4. Noelle® (Maternal and Neonatal Birthing Simulator)

Introduction

The Noelle® maternal and neonatal birthing simulator permits trainees to appreciate the complete birthing experience from the onset of labour, to delivery and treatment of the mother and neonate after delivery; it provides capabilities in Advance Life Support (ALS), obstetric and neonatal resuscitation protocols.

Uses and functions

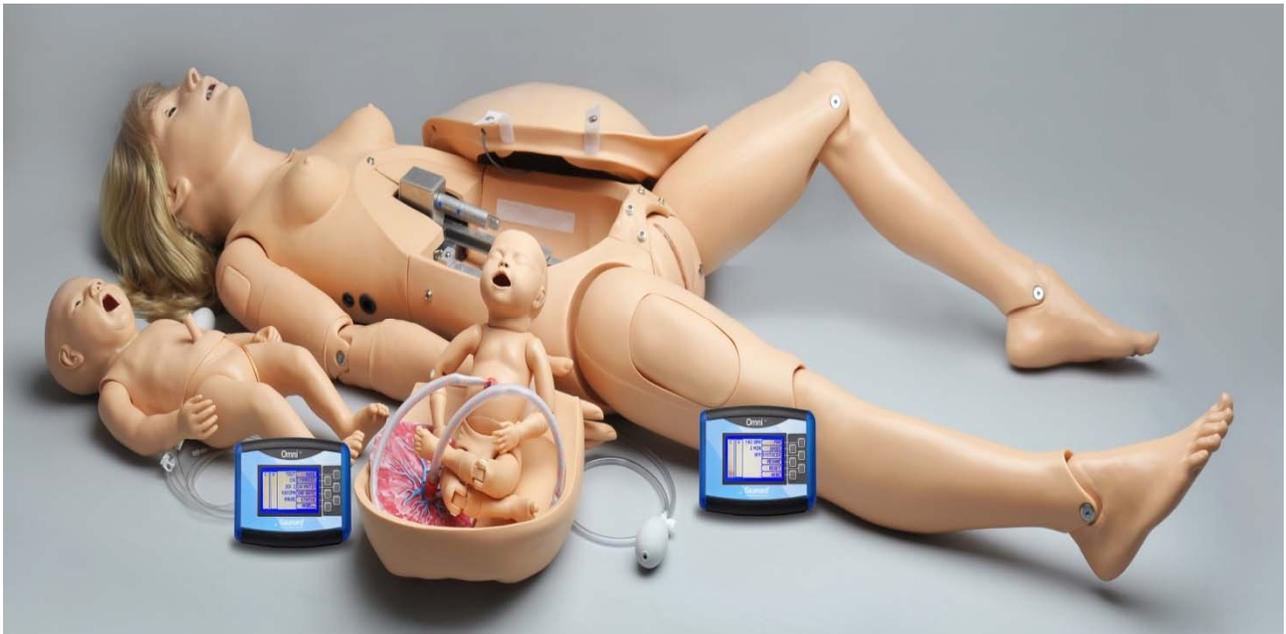
It helps to demonstrate and practice:

- Intubation (orally/nasally)
- Positive pressure ventilation
- Manual chest compression
- Bag Valve Mask (BVM)
- Suctioning
- IM injection
- IV infusion
- Leopold Maneuvers
- Vaginal delivery
- Shoulder dystocia
- Caesarean delivery
- Complete, frank and footling breech deliveries
- External version
- Cord prolapse
- Placenta Previa
- Vacuum or forceps delivery
- Foetal heart sound
- Episiotomy repair
- Postpartum haemorrhage

Parts and attachments

- Mother mannequin
- Articulating foetus
- Abdominal cover
- Inflatable cushion for Leopold maneuvers
- Automatically dilating cervix
- Bilateral arm with venous network in forearm

- Bilateral quadriceps and deltoid intramuscular injection sites
- Bilateral radial, carotid and brachial pulses
- Postpartum perineum insert
- Vulva insert for episiotomy repair
- Umbilical cord
- Adult IV filling kit
- OMNI- controller of the mannequin



Instructions to handle the mannequin

Assembling of the mannequin

Noelle® mannequin is partially assembled; the birthing foetus and neonate are fully assembled.

I. Assembling of legs

- Place the mannequin on a flat surface
- Remove the abdominal cover and attachments inside the abdomen
- Remove the wing nuts, washers and springs from bolt on hips
- Remove IM site from each leg and slide bolt through hole
- Reach through the IM site and attach it to bolt the washer, spring, second washer and lastly the wing nut
- Tighten the wing nut until the spring is compressed slightly

2. Power supply

- Connect the power supply to the power input located on the right side of the mannequin, and then connect the power supply to the wall outlet

3. Operating Omni Controller

Omni controls the mannequin with the touch of a button

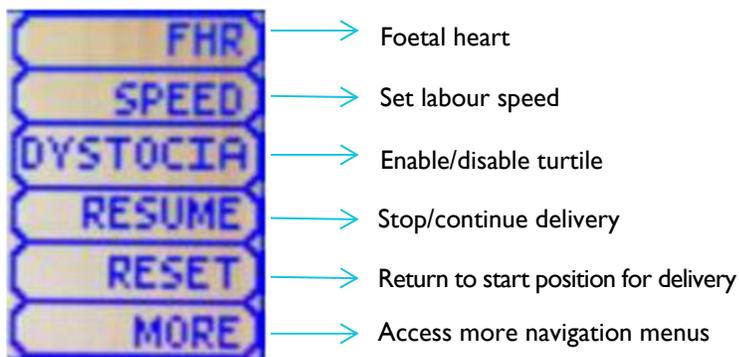
- Connect the communication cable to Noelle® and to Omni
- Start-up screen is shown while Omni is detecting the simulator features
- After start up screen Omni will automatically proceed to the main menu
- Pressing each button in Omni will display each menu item in detail
- Select a menu item by processing the soft key buttons located on the right side of the controller
- Each menu has additional submenus, use the submenus to increase, decrease, accept or cancel values



Omni main screen



FHR control menu



Omni Menu



Labour speed control menu

4. During Leopold Maneuvers

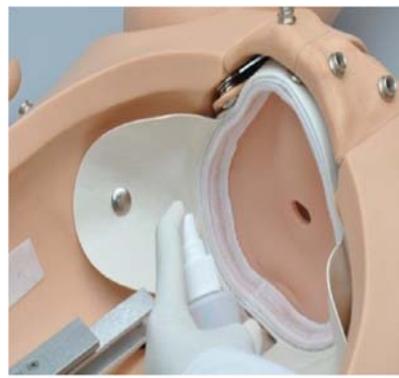
- Retract the birthing mechanism and remove the articulating birthing baby
- Place elevating pillow within the simulator
- E/route the inflation bulb outside the mannequin through any space provided on the left
- Place the birthing foetus in the desired position (vertex, breech or transverse) inside the elevating pillow and lift the foetus anteriorly using squeeze bulb
- Place the abdominal cover in place
- Lift foetus using squeeze bulb
- Conduct the Leopold maneuvers

5. During Normal Labour and Delivery

- Remove the abdominal cover
- Lubricate the head and shoulder of the foetus
- Lubricate the vulva and cervix internally and externally
- Attach the umbilical cord to the baby and the placenta
- Attach the placenta to the abdominal wall using the fastener in the site
- Connect the cylindrical adapters, with the blue markers aligned to an automatic birthing mechanism
- Attach foetus to the birthing mechanism
- If the baby is positioned like the head faces towards the right side of the mannequin then there may be a need for some assistance from the part of instructor during delivery
- Connect the communication cable to the mannequin and the Omni controller
- Select the FHR and speed of the delivery in the Omni controller and set them by increasing or decreasing the minutes
- After confirming the settings of labour, instructor can resume the procedure at any time by pressing the resume button
- Foetal heart sound can be heard by placing the bell of a conventional stethoscope on to the abdomen



Lubricating the head of the foetus



Lubricating the cervix



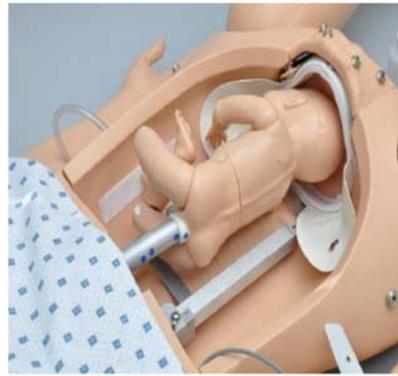
Connect the umbilical cord to foetus



Connect the placenta to the abdominal wall



Cylindrical adapter with blue mark aligned



Attaching foetus with birthing mechanism

6. Breech delivery

- Fully retract the birthing mechanism
- Remove the soft scalp from the foetal head
- Insert the birthing mechanism into the foetal head using one or two adapters
- Place the foetal legs in either extended position to simulate “footling” delivery or retract the legs for a frank breech delivery



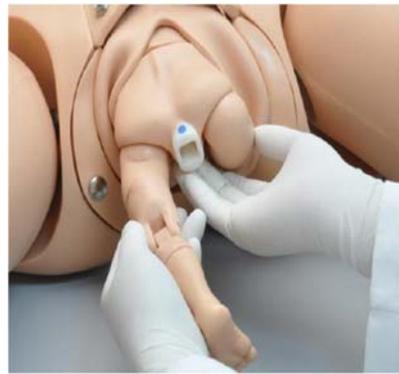
Removing the soft scalp



Inserting birthing mechanism to head



Connecting foetal head to machine



Foot delivery

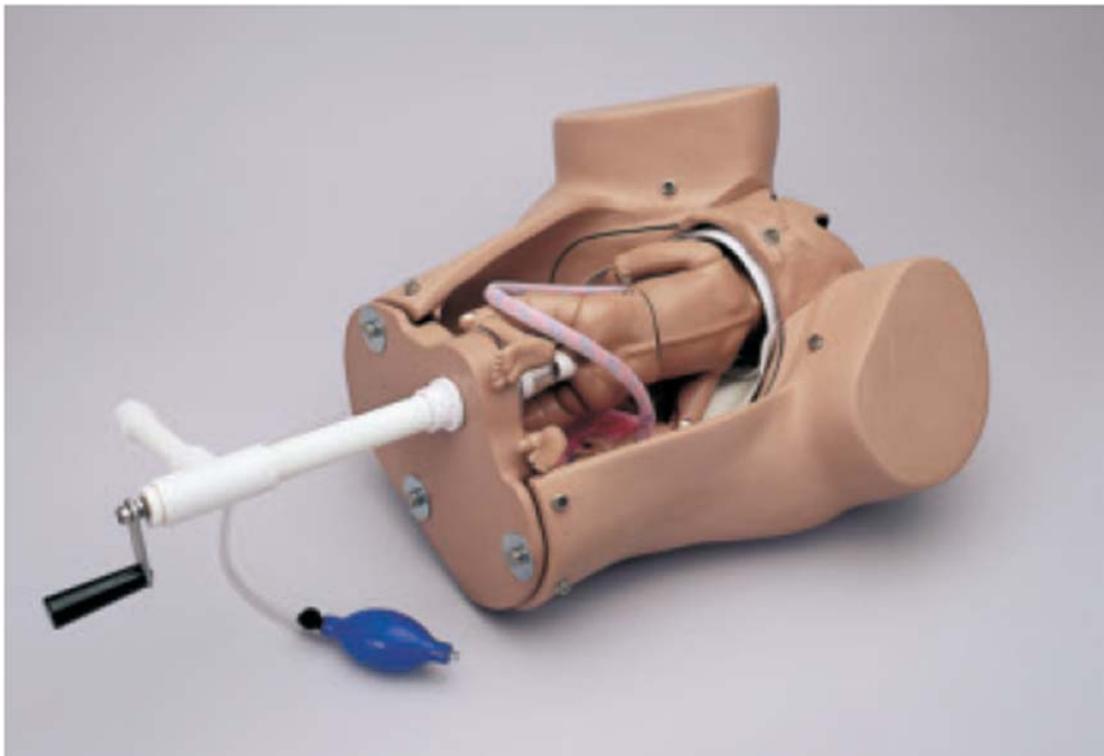
Maintenance and storage

- Do not wrap the mannequin in news print
- The birth canal insert can be cleaned by wiping with a mild solution of soap and water
- Store the mannequin in a cool and dry place
- After the procedure, remove the baby from birthing canal
- Do not perform procedures without lubrication
- Operate the mechanism a with an abdominal cover always
- Remove all traces of lubricants before storing

5. Obstetric Susie

Introduction

Obstetric Susie provides training in vaginal delivery (normal or breech) and postpartum care. Vaginal delivery can be demonstrated with Leopold maneuvers, Cord prolapse, Placenta previa and Shoulder dystocia



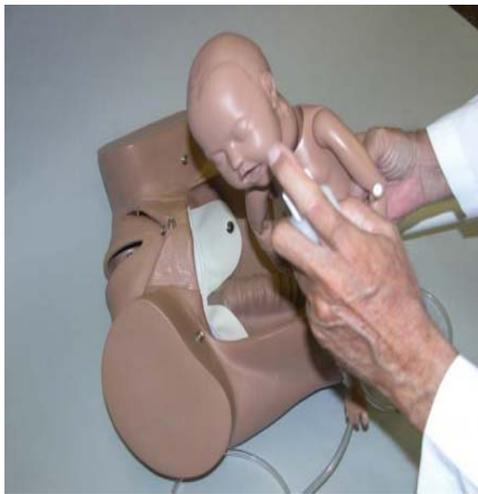
Uses and functions:

- Normal or breech deliveries
- Leopold Maneuvers
- Intrauterine manipulation
- Cord prolapse
- Placenta Previa
- Fundal massage
- Postpartum care
- Shoulder dystocia

Instructions to handle the mannequin

Assembling of the mannequin

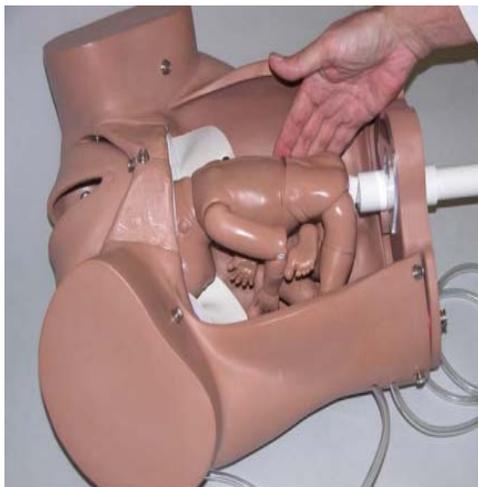
- Place the mannequin on the simulation table
- Remove the abdominal cover
- Install the manually operating birthing mechanism
- Lubricate the foetal head and shoulders and also the inner surface of the vulval insert
- Attach the umbilical cord to the baby and attach it to the pelvic cavity using the fastener
- Manually rotate the birthing mechanism counter clock-wise to advance the foetus.
- Rotate the handle in either direction to demonstrate internal and external rotation
- Use the side handle to provide internal rotation as well as external rotation



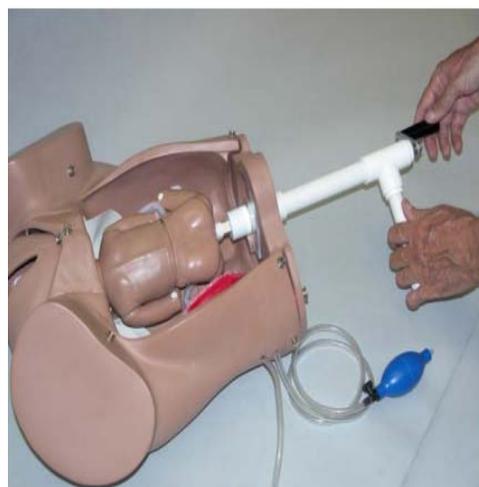
Lubricate the foetal head and shoulders



Fold the foetal arms and foetal legs



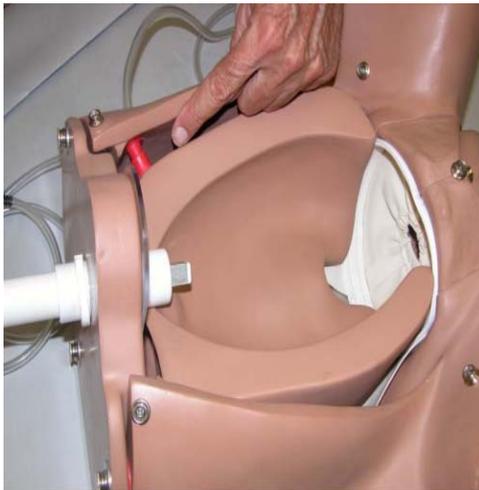
Connect the foetus to birthing mechanism



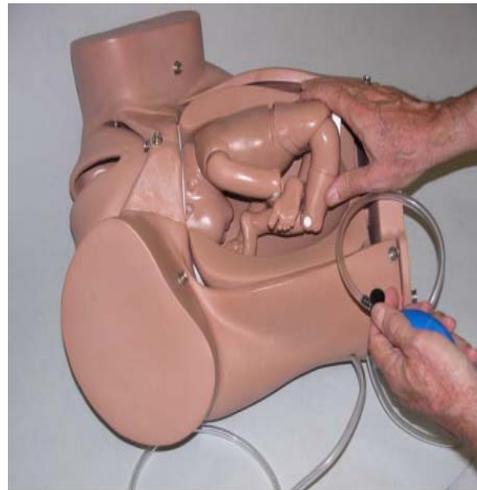
Rotate the crank counter clockwise to move the foetus downwards

Leopold Maneuvers

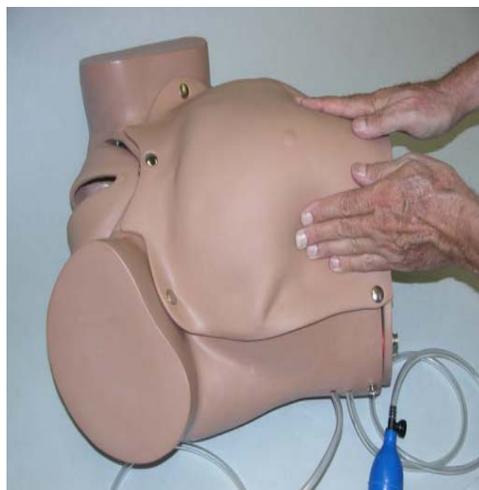
- Retract the birthing mechanism fully and remove the baby from birthing mechanism
- Place the elevating cushion within the birthing simulator
- Take out the inflation bulb outside the birthing simulator
- Place the birthing baby inside the elevating cushion in a desired position
- Place the tummy cover on the mannequin
- Inflate the elevating cushion until the foetus is felt within the abdomen.
- Conduct Leopold maneuver



Place the elevating pillow with in the simulator



Lift foetus anteriorly using squeeze bulb



Snap abdominal cover into place



Conduct the Leopold Maneuver

Maintenance and storage

- After the procedure, clean the mannequin with mild detergent and remove all lubricants
- Dry the mannequin
- Store the mannequin in a cool area in the provided bag
- Do not wrap the mannequin in news print
- Do not use povidone iodine in the mannequin
- Use lubricants during procedure

6. Advanced Childbirth Simulator

Introduction

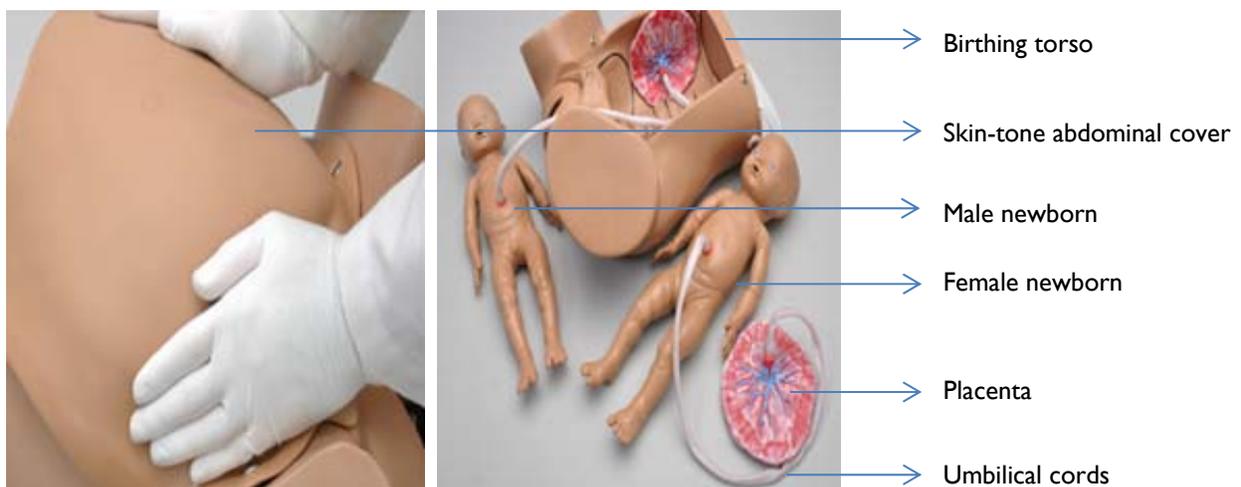
Child birth simulator offers reliable, realistic training for child birth maneuvers and emergency response when time is short and team work is essential. The advanced child birth simulator offers the ability to demonstrate a variety of obstetric techniques.

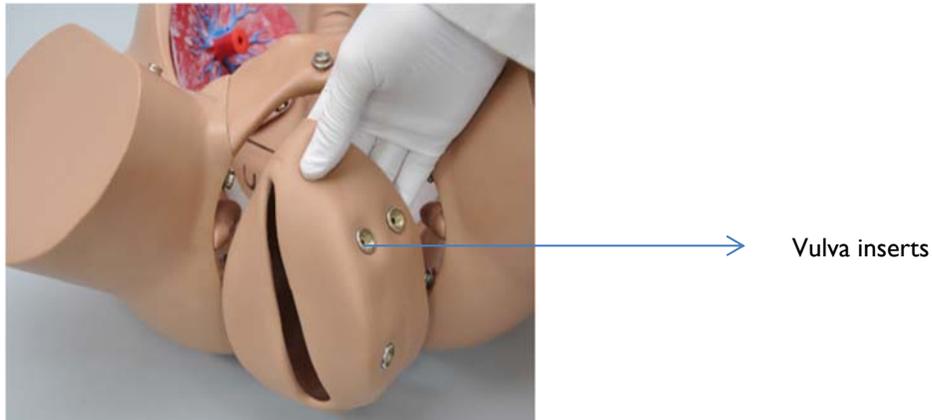
Uses and functions

Child birth simulator facilitates

- Palpation of the head, shoulders, backbone, knees and elbows of the foetus
- Vaginal delivery
- Caesarean section delivery
- Complete footling and breech deliveries
- Pinards Maneuver
- Intrauterine manipulation
- Prolapse of umbilical cord
- Normal delivery of umbilical cord and placenta
- Placenta Previa-total, partial, and marginal
- Palpation of foetal fontanelles
- Simulated suction of the nose and mouth of the neonate
- Ritgen's Maneuver
- Combination of vertex and breech presentation in multiple births

Parts and attachments





Instructions to handle the mannequin

Assembling of the mannequin

1. Removing the end plate

- Remove the three wing nuts and washers that hold the end plate in place by unscrewing the nuts
- Remove the screw from one side first
- After removing both the screws pull out the end plate

2. Replacing the vulva insert

- Detach the insert by unplugging the metal snaps connected to the torso
- Place the new vulva into position by plugging in the metal snaps

3. Connecting placenta and the foetus inside the mannequin

- Connect the cord with the umbilicus of the baby
- Attach the placenta inside the abdomen on the right or left side of the torso in the specified area
- Place the baby inside the torso by folding the legs of the baby
- Use lubricants on the head part of the baby for smooth passage through the birth canal

During Procedure

4. Normal Delivery

- Select a vulva insert and snap it into the place
- Connect the cord with the umbilicus of the baby

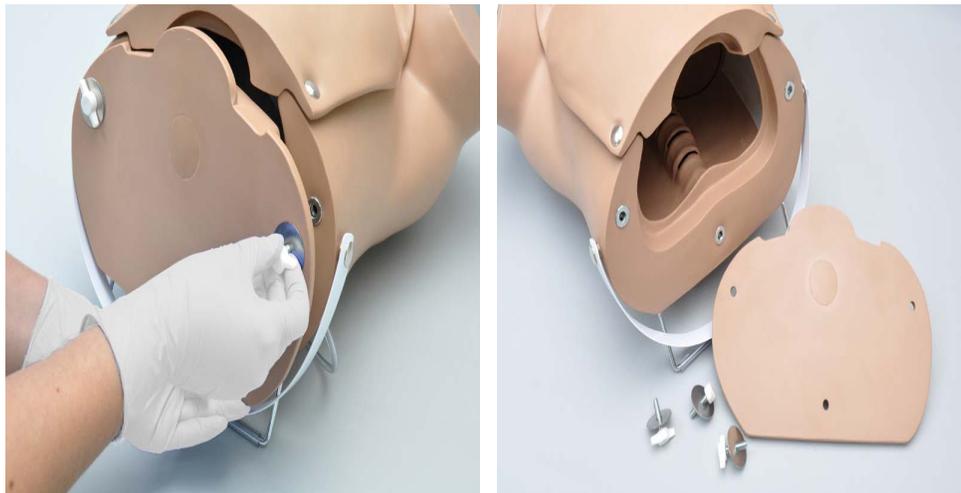
- Place the baby inside the abdomen and fix it in the correct position (head towards cervix)
- This can be done either by removing the abdominal cover or through the outer opening after removing the end plate
- Abdominal wall has two placental sites in the sides to attach the placenta
- Lubricate the head and shoulder of the baby with the lubricant provided
- To demonstrate nuchal chord, the umbilical cord can be wrapped around the foetal neck
- Crowning of the foetal head can be seen
- The foetal shoulders must remain aligned with the long axis of the vulva insert at delivery
- Deliver the head and shoulder, later the trainer/learner can deliver the baby and the placenta

5. Shoulder dystocia

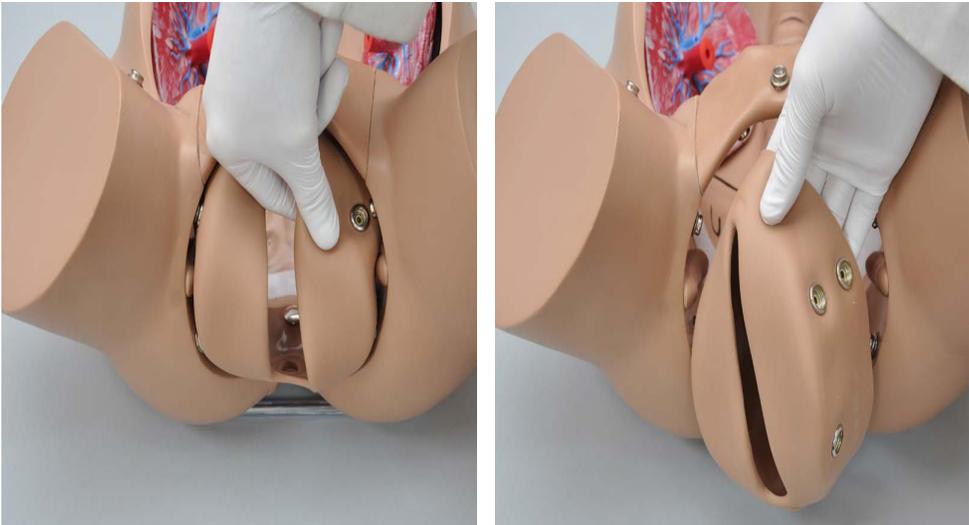
- Place the birthing baby in the abdominal cavity
- Simulate dystocia at any time during the delivery by manually locking the birthing baby inside the birthing simulator

6. Breech birth

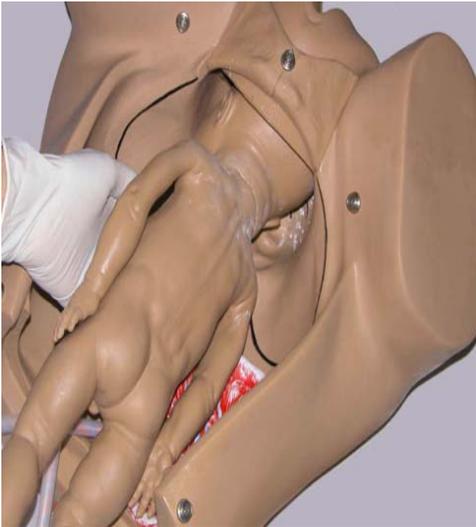
- Remove the abdominal cover and the foetus
- Thoroughly lubricate the inside surface of the abdominal cover and the foetus
- Place the lubricated foetus inside the abdominal cavity
- Place the foetal legs in an extended position to simulate footling
- Lubricate the lower torso and legs of the foetus



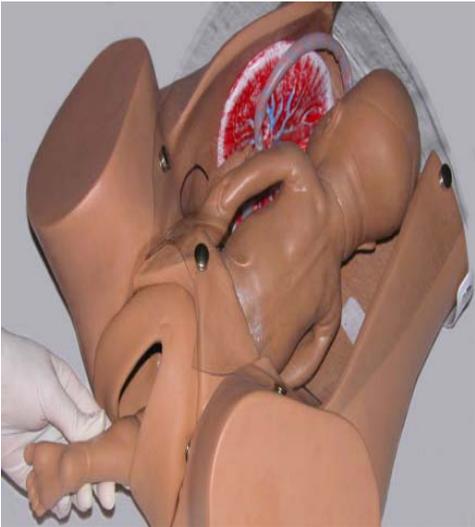
Remove the screws and pull out the end plate



Replacing the vulva insert



Normal delivery



Breech birth

Postpartum Suturing Trainer

The postpartum suturing trainer includes three suturing modules which enables the trainer to demonstrate the repair and suturing of episiotomy using the standard suturing needle holder with “00” or “000” chromic sutures.

Postpartum suturing trainer include three models



Medial lateral episiotomy
with peri-urethral tears



Medial episiotomy with tears
in the labia minora



Standard MEDIO Lateral
episiotomy

During procedure

- Remove the vulva insert by detaching the insert by unplugging the metal snaps connected to the torso
- Place the postpartum suturing trainer module by plugging into the metal snap
- Use the desired postpartum trainer module as desired for the training

Storage and Maintenance

- Clean the skin of the simulator after every training session
- The skin should be cleaned with a cloth that has been dampened with diluted liquid dish washing soap dried thoroughly
- Remove all traces of any lubricant
- Do not clean with harsh abrasives
- Do not use povidone iodine on the simulator
- The simulator is not water proof only “splash proof” so do not submerge or allow water to enter the interior of the simulator
- Keep the mannequin stored in the box/bag that has been provided

7. Abdominal Palpation Model

Introduction

This simulator offers reliable, realistic training for abdominal palpation for Leopold maneuvers. The model features with a foetal baby with palpable fontanels, spine, shoulders, elbows and knees. The mannequin can be used for demonstration of cephalic, breech presentation and transverse lie.



Uses and functions

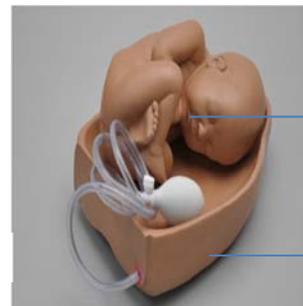
- To conduct Leopold Maneuvers
- To demonstrate cephalic and breech presentation and transverse lie.

Parts and attachments



→ Skin toned outer

→ Female lower torso



→ Foetal baby

→ Lower cushion

Instructions to handle the mannequin

Assembling the mannequin

- Remove the abdominal cover, birthing baby, umbilical cord and placenta
- Place the lower inflatable cushion with-in the simulator and place the foetal baby in a normal, breech or transverse lie position
- Inflate the lower cushion using the squeeze bulbs attached
- Place the outer skin cover over the abdomen and snap it to the clips in the lower torso
- The baby can be placed in different positions like breech, normal or transverse lie to demonstrate the different presentations



Placing the baby inside the abdominal cavity (normal presentation)

Placing and clipping the outer skin over abdomen



Breech presentation

Storage and Maintenance

- Clean the skin of the simulator after every training session
- The skin should be cleaned with a cloth that has been dampened with diluted liquid dish washing soap and dried thoroughly
- Remove all traces of any lubricant
- Do not clean with harsh abrasives
- Do not use povidone iodine on the simulator
- The simulator is not water proof only “splash proof” so do not submerge or allow water to enter the interior of the simulator
- Keep the mannequin stored in the box/bag that has been provided

8. Newborn Advanced Care Simulator

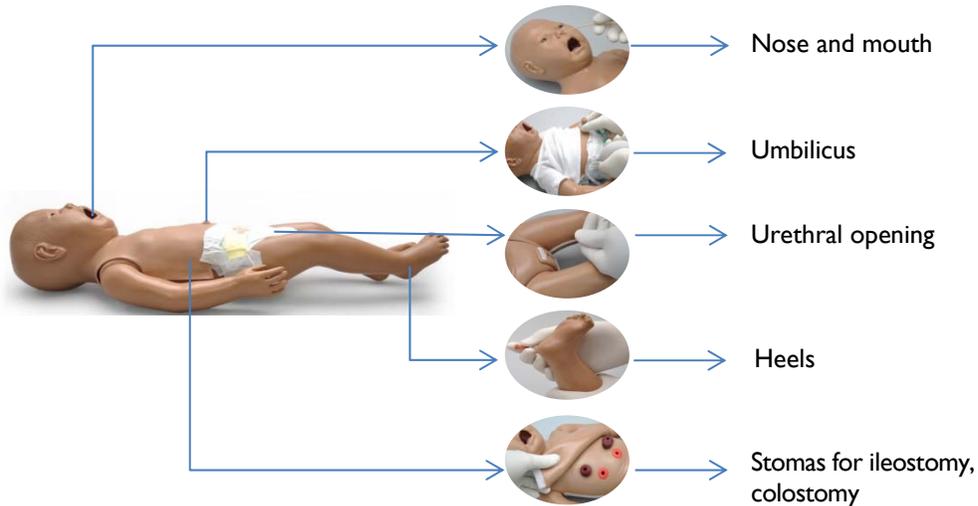
Introduction

Advanced new born care simulator is designed to simulate a child of 0 to 2 months of age. The simulator offers the ability to demonstrate a variety of procedures.



Uses and functions

- Nasogastric (NG) tube insertion training
- Heel stick exercise
- Eyes and ophthalmic exercises
- Range of movement
- Enema administration
- Urinary system
- Injection sites
- Bandaging

Parts and attachments:**Specifications**

- Realistic airway with tongue, trachea and oesophagus
- Nasogastric feeding
- Ear canal for otic drops and irrigation
- Realistic eyes
- Nasal intubation
- Ostomy care
- Umbilical Catheterisation
- Interchangeable genitalia
- Heel stick and finger prick technique

Instructions to handle the mannequin**1. Nasogastric tube feeding (NG tube exercise)**

- Select the appropriate sized catheter to demonstrate tube feeding
- Always use lubricants before introducing catheter
- Nasal and oral openings are connected with the stomach reservoir and enables for demonstrating tube feeding and gastric suction.

2. Enema administration

- Place the simulator on its back side
- Introduce the enema with an anal nozzle of small diameter
- The non-return valve in the anal passage prevents fluid spillage during enema administration.

3. Bandaging

- Separate the fingers and toes from the mannequin (it is designed in a way that it can be separated for bandaging exercise).
- Perform the procedure.

4. Umbilical catheterisation

- Use appropriate sized umbilical catheter
- Lubricate the distal tip of the catheter
- Insert the tip just below the level of the skin in the umbilicus.
- Infuse/administer the desired medicine
- Reservoir within the simulator collects the fluid.
- Drain the fluid with the help of the port on the mannequin

Storage and maintenance:

- To remove the remaining fluid from bladder after the catheterisation exercises, place the model up over a bedpan with the catheter in place. Squeeze out the fluid.
- All internal reservoirs can be removed for cleaning
- The skin of the mannequins can be cleaned with a mild detergent, or with soap and water.
- Do not use povidone iodine on the mannequin
- Store the mannequin in a cool and dry place inside the bag that has been provided.

9. Adult Cardio-Pulmonary Resuscitation (CPR) Training Mannequin (Little Anne)

Introduction

Little Anne CPR Training mannequin is designed to provide realistic CPR training for the trainees.



Uses and functions

Little Anne is used for demonstrating

- CPR training
- Mouth to mouth ventilation

Parts and attachments



Back section



Compression clicker



Rib Plate



Head and jaw assembly



Compression spring



Head complete



Chest cover

Instructions to handle the mannequin

Assembling the mannequin

To remove the airway and lung bag

- Start by removing the mannequin's face
- Unclip the chest skin of the mannequin and fold it over
- Remove the jaw assembly
- Unclip the jaw assembly from the lung bag of the airway
- Take a new airway
- Connect the airway in two places, first with the hook in the abdominal area
- Clip the other end of the airway into the jaw section correctly
- Clip the jaw section into place
- Fold the chest skin back down to the mannequin
- Place the face skin back down onto the mannequin
- Connect the face skin at the ears, where clips are present
- Disinfect the face set, if needed



Remove the face skin of the mannequin



Unclipping chest skin of mannequin



Removing jaw assembly



Unclipping the jaw assembly from lung bag



Connecting airway to the abdominal clip



Clip the other end of the airway into the jaw section

Storage and maintenance

- Never leave any fluid inside the mannequins after use and remove any stoppers to aid air circulation and to help dry the parts
- Never use ink on the mannequins nor wrap in newspaper as it is impossible to remove the ink
- Never use iodine or iodine substitutes on the mannequins
- After use, pack the mannequins in the boxes/suitcases in which they were delivered.

10. Female Catheterization Simulator

Introduction

An effective training tool for simulating female catheterization and bladder irrigation

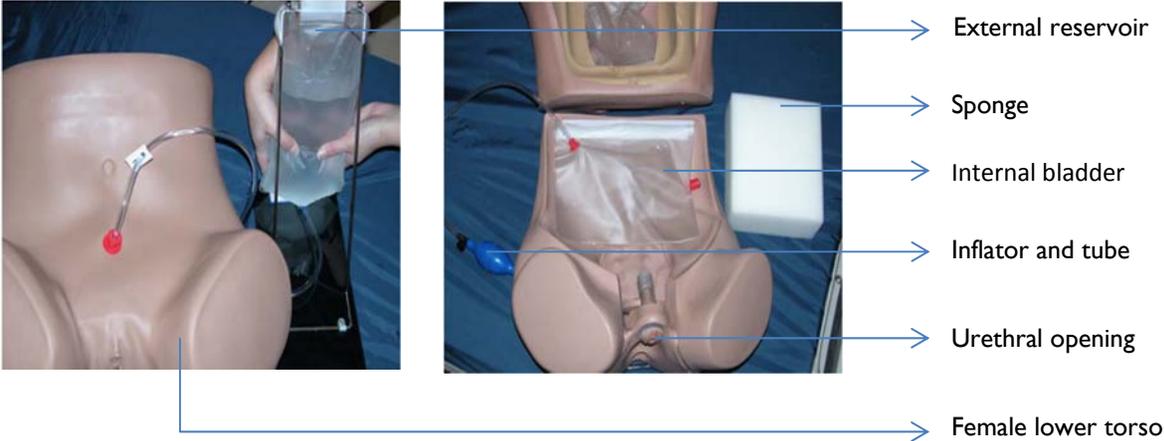


Uses and functions

- Female catheterization
- Appearance of an ostomy opening in a patient with suprapubic stomach
- Bladder irrigation

Parts and attachments

- Female lower body with realistic vulval space
- Internal bladder reservoir for standard catheterization exercises
- External bladder reservoir mounted on Lucite stand
- Standard channel valve
- Sponge
- Outer skin with attached bladder
- External connecting tube and inflator



Instructions to handle the mannequin

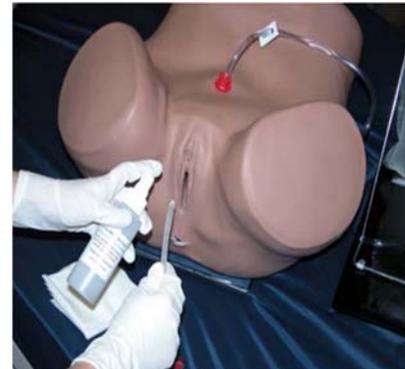
Assembling the mannequin

1. Filling the bladder and setting up of mannequin

- Use talcum powder to lubricate and to attach skin over the sponge part
- The bladder attached to the skin part has two openings, one to umbilicus and one to urethra
- First connect the bladder opening to the urethra
- After connecting, attach the skin part over the spongy body part
- Fill the external bladder with water and position it on the stand next to the simulator, making sure the valve is closed
- Insert the hose of the external bladder tank into the umbilical opening (simulator stoma) on the mannequin
- To fill the internal bladder, raise the external bladder tank above the mannequin and open the valve
- When the internal bladder is filled, close the valve and place the external bladder tank on the stand

2. During catheterization

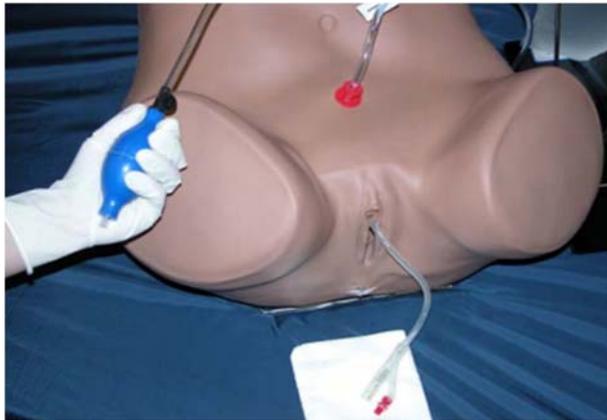
- Remove the urethral cap
- #18 French catheter is recommended for most effective use
- Lubricate the catheter well before inserting
- Insert the catheter, by no-touch technique
- After insertion, if a strong flow of urine not seen, use the squeeze bulb to inflate the internal bag that lifts the bladder anteriorly there by increasing its internal pressure causing the urine to flow freely.



Inserting urinary catheter

3. After procedure:

- Deflate the air from the bag
- Remove the catheter
- Empty the bladder



Using squeeze bulb to inflate an internal bag that helps urine to flow freely



Connection to the bladder, vagina and locking cervix



Removable urinary assembly

Maintenance and storage

- After procedure, place the model up over a bedpan or towel to drain out the dripped from the urethra during procedure
- The mannequin can be cleaned with mild detergent, soap or water
- Store the mannequin in a cool area in the box provided
- Any water should be removed before storage
- Catheters and lubricants to be removed after use otherwise they work as mild adhesives after a while
- Solvents or corrosive materials will damage the simulator
- Printed paper or plastic or ink will produce indelible stains
- If airlock/blockage occurs, simply inject air through the catheter to retain the airflow after catheterization

I I. Adult Intravenous Training Arm Kit

Introduction

This is a training arm that provides complex venous access for IV therapy. An extensive eight line vascular system allows trainees to practice vein puncture at all primary and secondary locations including starting IVs and introducing IV catheters. The venous system simplifies set up with only one external fluid bag supplying artificial blood to all veins.



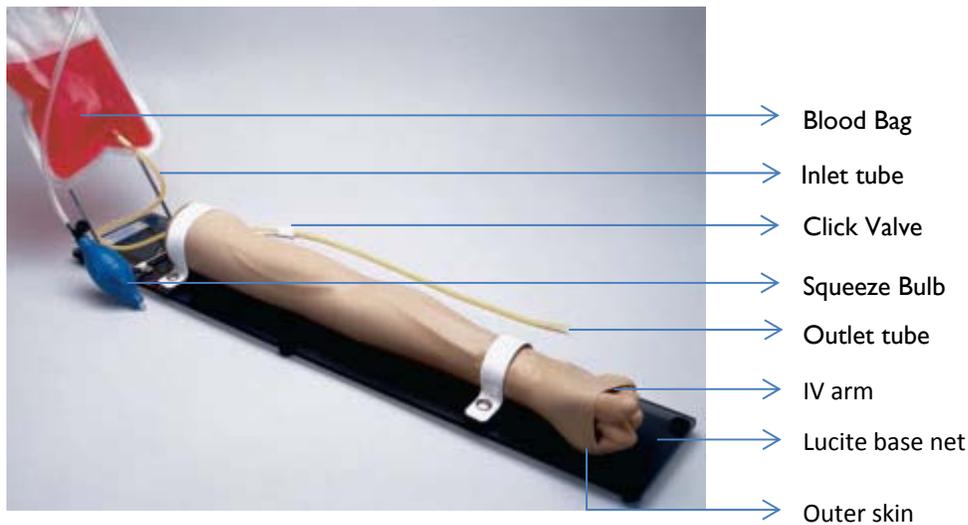
Uses and functions

- Intravenous injections
- Subcutaneous injection areas on the volar side of the fore arm and the lateral side of the upper arm
- Intramuscular injection site in deltoid area
- Three veins in the dorsum of the hand for additional intravenous training techniques
- Administration of medicine
- Simulation of clenched fist or tourniquet position
- Simulation of collapsed veins
- Realistic “Pop” as needle enters vein
- Resealing veins and outer skin
- Blood collection exercise with simulated blood

Parts and attachments

- Adult arm
- Skin
- Base with stand for blood bag
- Lucite base net for arm
- Synthetic blood
- Squeeze bulb, tubing and flange
- Click valves
- Rubber stoppers

The training arm contains simulated cephalic, basilic, antecubital, radial and ulnar veins.



Instructions to handle the mannequin

Assembling the mannequin

- Place the arm on a table or any other flat surface
- Lift the hinged metal stand supporting the blood dispenser and move the metal stand into position until it rests on the Lucite base
- Check that the tubing is not kinked
- The veins of this simulator are designed to leak a small amount of fluid if the needle is not inserted correctly
- Pour the artificial blood in the dispenser using a small funnel
- Remove entrapped air in the veins by locating a small cut off valve near the shoulder of the arm. This valve is normally closed to prevent leakage
- Release this valve and we will be able to observe the flow of fluid
- As soon as the bubble stops, the lines are completely filled with fluid
- Close the outlet

During procedure

Setting up an IV Line

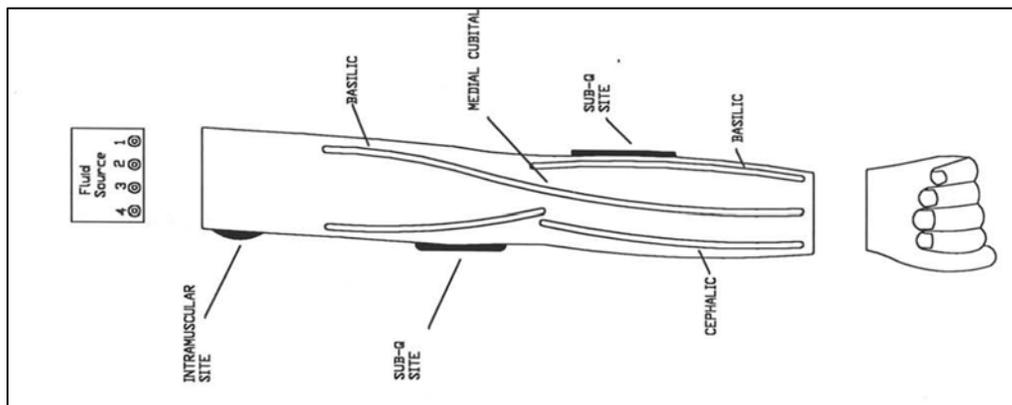
- Apply the desired pressure to the veins via squeeze bulb
- Select appropriate vein site and clean the skin with alcohol
- Avoid use of povidone iodine as it will cause discolouration of skin and make it brittle
- Apply the tourniquet of the skin if needed
- Puncture the skin and the underlying vein with the needle

- Operator will feel a pop as the needle enters the vein and the operator will be able to note blood return
- Stabilise the entry site as desired
- Release of pressure simulates the collapsed vein
- Catheter can be advanced over or through the needle
- Remove the needle and attach the infusion tubing to the catheter

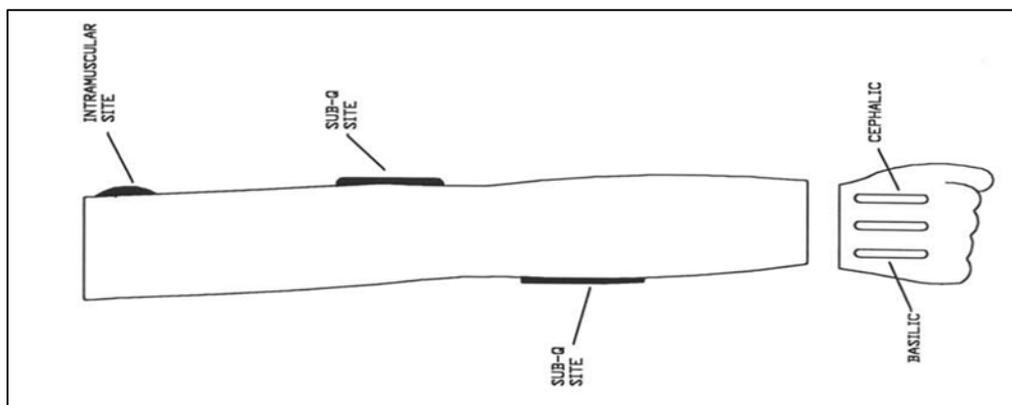
Disassembly and re-assembling of the mannequin

Removing the skin

- Starting at the top of the arm, remove the skin by rolling it down and over the wrist
- Use talcum powder to lubricate for easy movement
- Remove the veins from the grooves in the arm
- Replace the veins as required
- The skin is washable
- Dry the mannequin



View of the training arm with injection sites in palm down position



View of the training arm with the injection sites

Maintenance and storage

- Training arm can be cleaned with mild detergent or soap with water
- After drying the arm, lightly dust it with talcum powder
- If the intra venous system is blocked, first check the tubes are not kinked
- If blockage persists, remove shoulder and flush veins with water
- Do not wrap the mannequin in news print
- Store the mannequin in a cool area in the box that has been provided

12. Paediatric IV Training Arm

Introduction

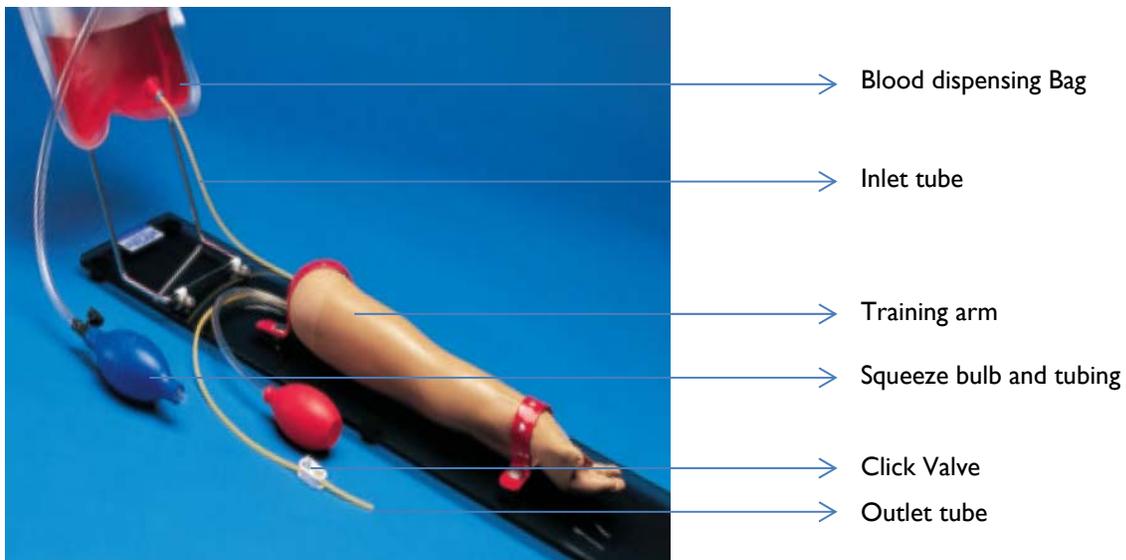
An effective training tool for simulating intravenous and arterial procedures, it simulates the arm of a five year old child. The training arm contains anatomically located venous and arterial grooves which are fitted with soft latex tubes closely simulating the consistency of veins.

Uses and functions

- Intravenous injections and infusion
- Blood collection simulation
- Subcutaneous injection
- Squeeze bulb simulating either collapsed or distended veins
- Simulating clenched fist or tourniquet situation

Parts and attachments

- Training arm
- Blood dispensing bag attached to a metal stand
- Synthetic blood concentrate
- Skin
- Squeeze bulb, tubing and flange
- Click valves



Instructions to handle the mannequin

Assembling the mannequin

- Place the simulator on a flat surface
- Raise the vinyl bag into position
- Open the inlet “click valve” between the bag and the arm
- Close the outlet; fill the system with water initially. Once you are familiar with the system, mix the blood concentrate
- Open the outlet and allow air bubbles to escape
- Close both the outlet and inlet

During procedure

Setting up an IV line:

- Apply desired pressure to the veins via squeeze bulb
- Squeeze the appropriate vein site
- Avoid use of povidone iodine, as this will cause the latex skin to become discoloured
- Apply the tourniquet of the skin if needed
- Puncture the skin and the underlying vein with the needle
- Operator will feel a pop as the needle enters the vein and you will be able to note blood return
- Stabilise the entry site as desired
- Release pressure, this will simulate the collapsed vein
- Catheter can be advanced over or through the needle
- Remove the needle and attach the infusion tubing to the catheter

Disassembly and re-assembling of the mannequin

Removing the skin

- Starting at the top of the arm, remove the skin by rolling it down and over the wrist
- Use talcum powder to lubricate for easy movement
- Remove the veins from the grooves in the arm
- Replace the veins as required
- The skin is washable
- Dry the mannequin

Maintenance and storage

- Training arm can be cleaned with mild detergent, soap or water
- After drying the arm, lightly dust it with talcum powder
- If the intra-venous system is blocked, first check the tubes are not kinked
- If blockage persists, remove shoulder and flush veins with water
- Do not wrap the mannequin in news print
- Store the mannequin in a cool area in the box provided

13. Adult Intra Muscular Training Mannequin

Introduction

Adult intra- muscular (IM) training mannequin is a life like model of human lower torso; the simulator is used for teaching IM and subcutaneous injections.



Features

- Intra- muscular injection site in the upper outer quadrant of gluteal region
- Intra- muscular injection site in ventro gluteal site below iliac crest
- Intra- muscular injection in lateral thigh
- Hand-painted anatomic artwork of the structures of head and shaft of the femur
- Hand-painted anatomic artwork of the sciatic nerve, major blood vessels of the region, and the deep underlying layer of muscles
- Hand-painted anatomic artwork of the bony pelvis
- Self-resilient outer skin

Uses and functions

- IM injection (intra-gluteal)
- Subcutaneous injection
- Placement of femoral line
- Palpation of gluteal region

Instructions to handle the mannequin

Assembling the mannequin

The mannequin is always set and is in an assembled form



Preparation for the procedure



During the IM injection process

Maintenance and storage:

- After the procedure, dry and clean the mannequin
- After drying, pack the mannequin in boxes/case with which they are delivered
- Store the mannequin in a cool area
- Do not wrap the mannequin in news print
- Use 22 gauge needle for injection simulation



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