INSTRUCTION MANUAL

THE S105 PEDI®
NEWBORN PALS SIMULATOR
FOR ADVANCED LIFE SUPPORT

SIMA® MODELS
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Revised August, 1998

PLEASE READ THE FOLLOWING INSTRUCTIONS PRIOR TO COMMENCING TRAINING EXERCISES ON YOUR NEW MANIKIN.

HANDLE YOUR SIMULATOR IN THE SAME MANNER AS YOU WOULD HANDLE YOUR PATIENT - WITH CARE AND CONSIDERATION.

SHOULD YOU HAVE ANY QUESTIONS AFTER READING THIS INSTRUCTIONAL MANUAL, PLEASE CALL OUR TOLL-FREE NUMBER (800) 882-6655.

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[1]Available Option

SECTION I - FEATURES AND CAPABILITIES

The size of this model is designed to simulate a child (0-2) months of age. It may be an effective training tool for CPR, intubation, suctioning, trauma care, and advanced life support exercises. It is to be used only as part of an approved training program for pediatric emergency and trauma care.

The simulator features the following:

- ▲ Realistic intubatable airway
- ▲ Heart, lungs, ribs, stomach, and liver
- ▲ Arterial sites in the arms and legs
- ▲ Intraosseous infusion site
- ▲ Intravenous access through umbilicus
- ▲ Injection training arm for intravenous, subcutaneous, and intramuscular injections
- ▲ Custom carrying bag

The available essential features of this model are:

INTUBATION AND CPR

- ▲ Realistic mouth, tongue, vocal cords, trachea, and esophagus
- ▲ Fully articulating head, neck, and jaw
- ▲ Oral and nasal intubation plus suctioning
- ▲ Suction either airway or esophagus
- ▲ Crico prominence facilitates Sellick maneuver
- ▲ Endoscopically examine airway to level of bronchi
- ▲ Easily accessible chest cavity
- ▲ Chest compliance achieved through realistic heart, lungs, and ribcage
- ▲ Look, listen, and feel for bilateral lung expansion
- ▲ Palpable and visual landmarks for CPR
- ▲ Realistic chest rise
- ▲ Simulated brachial, radial, and femoral pulse

INTRAOSSEOUS INFUSION (I/O)

- ▲ Venous access of choice in trauma care of children
- ▲ Tibial bone in right leg
- ▲ Palpable landmarks include tibial tuberosity, tibia, and patella
- ▲ Sixteen (16) interchangeable bones with anatomic landmarks
- ▲ Pressurized system provides realistic "pop" when needle enters bone marrow cavity
- ▲ Pull fluid through needle, verifying correct position

ARTERIAL SYSTEM

- ▲ Pulse may be determined at the left or right brachial or at either the right radial or the right femoral artery
- ▲ The brachial pulse is normally taken during CPR. The available femoral arterial site in the right leg may be cannulated to ascertain blood gas levels without interfering with the CPR effort

FEMORAL VENOUS ACCESS

- ▲ Simulated blood can be supplied in the right femoral vein
- ▲ The right femoral vein may be infused, since it is relatively easy to cannulate without interfering with the CPR effort
- ▲ Two quick venous "sticks" are recommended prior to attempting intraosseous techniques. Therefore, both intravenous and intraosseous techniques can be practiced

UMBILICAL VENOUS ACCESS

- ▲ Simulated blood can be supplied to umbilicus
- ▲ Cannulate and infuse liquid

INJECTION TRAINING ARM

- ▲ For intravenous training on arm and hand
- ▲ Palpable brachial and radial arteries
- ▲ Simulated blood supplied to arm and hand
- ▲ Veins stand out or collapse
- ▲ Easily replaceable skin, veins, and arteries

SECTION II - INTUBATION AND CPR

1. Respiratory and Cardiovascular System

The degree of pulmonary ventilation and cardiac compression achieved by the trainee can be judged by connecting the **Code Blue® Life Monitoring System.** Attach the blue tube from the lungs to the **ventilation** port at the rear of the monitor. Attach the red tube from the heart to the **compression** port at the rear of the monitor. Both tubes are located at the left side of the upper torso.

2. Code Blue Life Monitoring System - Instructions for Use

*The **Code Blue Life Monitoring System** is to be used with a **Gaumard** CPR/Patient Care Simulator only. It was designed to help teach CPR simply and effectively. It coaches the student through CPR training. A manual from the American Heart Association is provided by Gaumard with your CPR simulator. This system is to be used as a part of an approved CPR training program.*

Connect the color-coded red and blue tubes to the compression and ventilation ports on the rear of the monitor. Select the infant mode, set the Coach/Reset switch to Coach, and turn on the monitor. The student will immediately see coaching lights and hear pitched tones. The pitched tones and lights are synchronized. The low tones indicate timing of ventilations; the higher tones indicate the timing of chest compressions. The sequence is consistent with recommendations provided by the American Heart Association and the Red Cross for infant CPR.

Once in the infant mode, the student will observe the following:

A. 1 - 2 second pause
B. 2 low tones followed by 5 higher tones

Then:

C. 1 low tone followed by 5 higher tones.

Again, the low tones indicate lung ventilation. The higher tones indicate chest compression. Note that both the cycle and the timing of CPR for infant is very different from the adult sequence.

Once the student is familiar with the Infant sequence, the instructor should teach the proper amount of lung inflation and chest compression.

Ask the student to ventilate the lungs using an infant "AMBU" bag. Note that too little ventilation will cause the bar graph to illuminate only the yellow range. Correct ventilation is in the green range. Too much ventilation is in the red range. Now, ask the student to compress the chest. Insufficient chest compression will cause the bar graph to illuminate only in the yellow range. Correct compression is in the green range. Too much compression is in the red range, and may damage the patient's ribs. Stay in the green range for both ventilations and compressions.

Depending upon the mode selected, the monitor will adjust for the differences in both the timing cycle and the amount of ventilation/compression required.

NOTES:

A. The **Code Blue Life Monitoring System** available with this simulator may be used for both toddler and infant modes. *For the newborn, normally select the **INFANT** setting.* When changing modes, always switch from Coach to Reset and back to Coach. This resets the electronics and starts the timing sequence.

B. While teaching the correct amount of lung inflation or chest compression, the instructor may elect to turn off the Tone and Light Option by switching to Reset. In this mode, the student can practice proper ventilation or chest compression by monitoring progress on the bar graph. Remember to stay in the green range.

C. The **Code Blue Life Monitoring System** is powered by a conventional 9-volt battery. Note that the Low Battery indicator is next to the Power switch.

3. CPR Training

For instructions, refer to the enclosed manual prepared by the American Heart Association. For additional information, refer to the course book offered by your organization.

4. Intubation

NOTE: Your simulator is equipped with a realistic airway having a soft, floppy epiglottis and vocal cords. The student MUST treat the simulator like a PATIENT. BUT, if the airway is DAMAGED, it is designed to be REPLACED by the customer.

OPENING THE AIRWAY

During your BLS training the ABC's of resuscitation were emphasized again and again. Recall the "A" stands for airway and "B" stands for breathing. Therefore, the mechanics of properly opening the airway are essential.

Remember the following during pediatric intubation:

- Children require more oxygen per amount of body weight than adults.
- The airway of a typical newborn child is only 3.8 millimeters in diameter at its narrowest point, located below the vocal cords. An adult's airway may be 20 millimeters in diameter.
- The tongue occupies a relatively larger portion of the mouth.
- A towel placed under the shoulders is essential to extend the infant's neck.

Intubation may be indicated in the unconscious patient or when the patient is not breathing properly. Successful intubation provides:

- means for oxygen and positive pressure ventilation
- alternative route for providing certain medications if IV is not available
- access for suctioning the trachea and bronchi

The **KEYS** to successful intubation are:

- Hyperventilation before intubation
- Patient position
- Using laryngoscope to visualize the vocal cords
- Passing the endotracheal tube between vocal cords
- Practice, practice, practice

HYPERVENTILATION BEFORE INTUBATION

During intubation attempts, the patient will **NOT** receive adequate oxygen. Therefore, the rescuer must provide 100% oxygen before attempting intubation, **AND MUST HYPERVENTILATE BETWEEN EACH ATTEMPT.**

PATIENT POSITION

The objective is to position the patient so that the rescuer will have the **BEST VIEW OF THE VOCAL CORDS.** Inserting an endotracheal tube (ET tube) must be a well-rehearsed procedure. Each **CORRECT** step makes the **NEXT STEP** that much easier.

Remember to ventilate the patient **BEFORE** and **BETWEEN** each intubation attempt.

Place the patient on his back. Use the **"SNIFFING POSITION"** or **JAW THRUST** shown below. A towel must be placed under the infant's shoulders. This places the patient in the so-called **"SNIFFING"** position. This provides the rescuer with the **BEST VIEW** of the vocal cords. **HEAD TILT/CHIN LIFT** is to be avoided in the newborn.

VISUALIZING THE VOCAL CORDS

The rescuer is normally positioned above and behind the head of the patient so that the line of sight is across the forehead, over the nose and along the axis of the patient's airway. The laryngoscope is used to lift the tongue and epiglottis out of the line of sight so that the vocal cords may be **CLEARLY** seen.

The laryngoscope may be fitted with two types of blades; the straight Miller or the curved Macintosh. The Miller traps the top edge of the epiglottis against the tongue while the Macintosh lifts the epiglottis by lifting the tongue at the vallecula. The **straight** blade is widely **preferred** for pediatric intubation.

In the event that you can **STILL** not see the vocal cords, use the **SELLICK** maneuver as follows: have an associate depress the crico cartilage - this forces the airway posteriorly, providing a better view of the vocal cords; locate the cricoid by finding the "Adam's Apple" or thyroid cartilage; move the hand lower and feel the crico-thyroid membrane; move further below and locate the cricoid cartilage.

POSITIONING THE ENDOTRACHEAL TUBE

With the patient in the sniffing position, and the rescuer behind the patient, place an uncuffed ET tube approximately 3.0mm I.D. by 10 to 12 centimeters in length as follows:

1. Use the left hand to insert the blade along the right side of the mouth, sweeping the tongue to the **LEFT** until the blade is midline
2. Lift the tongue and the epiglottis up and away
3. Keep low behind the patient and observe the vocal cords
4. It is a good idea to have 2 ET tubes ready for use; one WITH A GUIDEWIRE in place and the other without the guidewire.
5. Use Sellick maneuver and/or guidewire if necessary
6. Slide ET tube along the right side of the blade and between the vocal cords
7. Position the tip of the ET tube midway between the vocal cords and carina.
8. Carefully withdraw the guidewire as the ET tube moves through the trachea
9. Carefully withdraw the laryngoscope blade
10. Attach oxygen supply and check for bilateral lung expansion

CONFIRMING CORRECT PLACEMENT

- ▲ Look, listen, and feel for bilateral lung expansion
- ▲ In a patient
  Auscultate for chest sounds and air entry
  Observe ET tube - note fogging of the expelled air - you should **NOT** see the gastric contents
- ▲ Secure the ET tube and **VENTILATE**
- ▲ Check the patient
  for **COLOR**
  for the **EFFORT** of breathing
  is the **RESPIRATION RATE** reasonable?
  for **BLOOD PRESSURE** and **HEART RATE.**

FOR ADDED REALISM:

- ▲ Gastric contents and other fluids may be added to the stomach
- ▲ Suctioning may be practiced in either/or the esophagus/trachea
- ▲ Placement of the ET tube should also be attempted while fluids are present in the vicinity of the vocal folds
- ▲ Placement of the ET tube using the naso-tracheal route should also be demonstrated using an ET tube several centimeters LONGER.

SECTION III - TRAUMA CARE

1. Intraosseous Infusion and Injection Simulator

The Intraosseous Trainer may be an effective tool for instruction in intraosseous infusion. This model also contains a simulated femoral artery and vein in the upper thigh so that the student can appreciate both a femoral entry and the intraosseous entry into the venous system. This dual system design is useful since the intraosseous entry is recommended after two quick unsuccessful attempts at peripheral venous cannulation. This simulator is to be used only as a part of an approved program for the care of pediatric patients. The Intraosseous Trainer includes a set of sixteen (16) modified tibial bones, a fluid dispensing syringe, synthetic blood concentrate, and two (2) spare skin covers.

Instructions for Use

CAUTION

The tibia bones supplied with your simulator are made from hard plastic that can be pierced by an Intraosseous needle. Once holes have been made in the tibia it **CAN** leak. We have minimized leakage by controlling fluid pressure in the bone using inlet and drain valves. Proceed as follows:

1. Fill tank with water, open the inlet and drain valves and allow water to flow thru the system into a catch basin.

2. Once water is seen draining, close the inlet valve.

3. Perform IO exercises.

4. After about 10-20 sticks you may need to add water to the tibia bone. To do so, open the inlet valve a few seconds and reclose the valve.

5. Continue your IO exercises.

6. To change the tibia bones, first open the outlet and drain the fluid, remove the skin cover and remove the bone. Either use one end of the used bone or insert and re-attach the skin. Return to step 2.

7. When the training session is completed, open the outlet and drain the fluid.

8. Remove the syringe and drain the fluid.

9. Replace the bones and dry them for next session.

10. Instructor may seal the holes in the bone(s) that are made by the IO needle with "superglue."

INTRAOSSEOUS ACCESS

Intraosseous infusion is the infusion of fluids, blood, and/or drugs directly into the bone marrow of the tibia or other large bone. It is a quick, simple solution to venous access in children when the alternate peripheral veins are barely visible or palpable. Contraindications to intraosseous access include bone disorders, infected burns, cellulitis, or recent fractures.

THE TIBIA ACCESS IS THE CHOICE IN THE EVENT THE VICTIM ALSO REQUIRES CPR INTERVENTION. THE HUMERAL ACCESS IS ONE CHOICE IN THE EVENT SEVERE ABDOMINAL TRAUMA OR BILATERAL FRACTURES ARE EVIDENT.

Setting up an intraosseous access line is an invasive procedure requiring an aseptic technique. The site most recommended for the tibia is the anterior medial aspect of the tibia. Although any portion of the tibia can be used, the preferred site for properly locating the point of insertion of the needle is two (2) to three (3) centimeters below, and one (1) centimeter medial to the tibial tuberosity (the tibial tuberosity is the bump below the kneecap). Note that each tibial bone provided is modified, having a tibial tuberosity at the top and bottom of the tibial bone. This allows the bone to be rotated after repeated needle sticks. You may wish to apply conventional "superglue" or PVC sealant to the holes created by the needle sticks to prevent fluid leakage from the needle sticks.

The site recommended for the distal femur is 2 - 3 centimeters above the external condyles.

Locate the tibial site and clean the area with alcohol. Avoid the use of povidone-iodine, as this will discolor the simulator. Simulate anesthetization of the area if needed. The needle recommended for this procedure is a 16 gauge disposable bone marrow aspiration needle.

Caution must be used when inserting the needle. Once the insertion point is located, insert the needle and cannula by applying downwards pressure while rotating the needle back and forth until the bony cortex has been penetrated. A "pop," or sudden decrease in resistance signal entrance into the cavity. Now remove the central needle, leaving the cannula in place. If the needle/cannula has been properly inserted, fluid may be withdrawn using a standard syringe. In the event "blood" return is not observed, the student may not have penetrated the bone marrow cavity. The intraosseous access is only marginally stable and is easily dislodged from the pediatric patient. Therefore the student should practice stabilizing the needle using, for example, a hemostat clamped to the needle hub and taped to the leg of the patient.

Once stabilized, the intraosseous access may be used to infuse fluids, drugs, and blood products. Be sure to flush the cannula with saline after each use.

It is recommended in the literature that the intraosseous infusion be conducted for the briefest amount of time, usually an hour or two, until a more secure intravenous line has been established.

2. Femoral Venous Access

During CPR, the preferred access site is the largest and most accessible site that does not interrupt resuscitation of the victim. Venous access can be obtained through the intraosseous route discussed previously, or the femoral, internal jugular, external jugular, or subclavian veins. Of the latter four sites, the femoral is preferred because, like the intraosseous site, it provides less interference with the resuscitation efforts. To cannulate the femoral vein, a suggested procedure is shown below:

Accessing the femoral vein:

1. Restrain the right leg with slight external rotation.
2. Identify the femoral artery by palpation or, if pulsations are absent, by finding the midpoint between the anterior superior iliac spine and the symphysis pubis.
3. Scrub the area thoroughly with an antiseptic solution.
4. Wash hands and wear sterile gloves.
5. Anesthetize the skin with 1% lidocaine.
6. Puncture the skin with a hollow needle **one finger's breadth below the inguinal ligament, and just medial to the femoral artery**. During chest compressions, pulsations in the femoral area are as likely to originate from the femoral vein as from the artery, and needle puncture should be attempted at the point of pulsation. Direct the needle toward the head at a 45° angle and advance it slowly until a free flow of blood is obtained. Insert the through-the-needle catheter or catheter-introducing sheath. Remove the needle, or guide wire and dilator and secure.

3. Umbilical Catheterization

At birth and for only a few hours thereafter, the umbilicus can be used for intravenous access, and for measuring arterial blood gases/pressure. This simulator features umbilical venous access.

You may access this using an appropriately-sized umbilical catheter. Lubricate the distal tip and insert the tip JUST BELOW the level of the skin. Infusion exercises may then be practiced. A reservoir within the simulator collects the fluid, which can be drained via a port on the torso.

4. Arterial System

Once spontaneous circulation is restored, arterial access may be used to monitor blood gases, chiefly ph, pO_2, pCO_2. Indwelling arterial catheters can be placed in the radial, femoral, or posterior tibial arteries.

As supplied, the arterial system in this simulator was designed for pulse detection only, using the standard squeeze bulb technique. However, the instructor may wish to connect the line leading to the squeeze bulb to the blood bag instead. The arterial system will now fill with blood and arterial sticks can be practiced. Remember to flush the system with water and purge the system of air when arterial exercises are complete.

5. Pediatric Injection Training Arm

The **Susie**™ and **Simon**™ Pediatric Training Arm simulates the arm of a newborn child. It is an effective training tool for intravenous and certain arterial exercises. It is only to be used as part of an approved program for patient care.

The Pediatric Training Arm includes a blood dispensing syringe, synthetic blood concentrate, and a spare arm skin. The training arm contains anatomically located venous and arterial grooves which are fitted with soft latex tubes closely simulating the consistency of the veins. A translucent, pliable latex skin, which is removable and washable, is stretched over the training arm.

The Pediatric Training Arm provides:

1. A medial venous antecubital vein for IV exercises
2. Radial and brachial arteries
3. Two veins in the dorsum of the hand for additional intravenous training techniques.

Applying pressure via the syringe permits the veins to stand out, simulating a clenched fist or a tourniquet situation. Release of the pressure simulates collapsed veins. Use of the syringe permits the palpability of the veins to be varied as seen in routine hospital or emergency situations.

INSTRUCTIONS FOR USE OF THE PEDIATRIC TRAINING ARM

1. Place the simulator on a level surface.

2. Open the inlet "click valve" between the syringe and arm. Close the outlet. Fill the system, using water initially. Once you are familiar with the system, mix the blood concentrate.

3. Open the outlet and allow air bubbles to escape.

4. Close both the outlet and the inlet.

5. Perform the appropriate exercises. See the detailed instructions described below.

6. When the training session is completed, open the outlet and drain the fluid.

7. Remove the syringe and drain the fluid.

INTRAVENOUS EXERCISES

Setting up an IV line is an invasive procedure requiring an aseptic technique. The normal procedure for setting up an IV line using the simulator is as follows:

1. Apply desired pressure to the veins via the syringe.

2. Squeeze the appropriate vein site and clean the skin with alcohol. Avoid use of povidone-iodine, as this will cause the latex skin to become discolored and brittle.

3. Omit tourniquet use if possible. If required, apply the tourniquet a few inches above the selected site.

4. Simulate anesthetization of the skin if needed.

5. Select a 22 gauge cannula and 23 gauge needle. Larger needles will damage the veins.

6. Apply finger pressure to the vein distal to the puncture site.

7. Puncture the skin and the underlying vein with the needle. The bevel of the needle should be up and the needle should be angled at a 20 - 30 degree angle. You can feel a "pop" as the needle enters the veins and you can note the blood return.

8. Stabilize the entry site as desired.

9. Apply ointment and dressing, and remove tourniquet, if used.

DISASSEMBLY AND RE-ASSEMBLY

1. Remove the latex skin starting with either the hand or shoulder. Use talcum powder on the latex skin to ease movement. Remove the skin, exposing the veins and arteries.

2. Remove the veins and arteries from the grooves in the simulator. Replace the veins and arteries as required (see sketch on following page).

3. Assemble in reverse order, being certain to powder the inside of the skin before it rolling it on.

CLEANING AND REPAIR

1. The skin of the simulator can be cleaned with a mild detergent, or with soap and water. After drying the arm, lightly dust it with talcum powder. This will keep the training arm supple and easy to use. Note: dust the inside and outside of the latex skin lightly with talcum powder for ease in assembly.

2. If the venous system is blocked, first check that the tubes are not kinked. If blockage persists, remove the fist and flush the veins with water.

3. Indelible marks made with ballpoint pens, ink, or markers will remain.

SECTION IV - GENERAL NOTES

1. Lubrication

When introducing any invasive device, always use a lubricant, such as one of the following:

- ▲ a drop of soap with water
- ▲ non-stick cooking spray

For the intubatable airway, USE A NON-AEROSOL CORN SPRAY.

2. Cleaning

The skin of the manikin may be cleaned with a mild detergent, or with soap and water. Do not clean with harsh abrasives.

Indelible marks made with ballpoint pens, ink, or markers will remain.

Do not wrap the manikin or any **Gaumard** product in newsprint.

Do not use povidone-iodine on this manikin or any **Gaumard** simulator.

3. Suggested References

1. *Golden Hour: The Handbook of Advanced Pediatric Life Support*, Nichols et al, Mosby Yearbook, 1991.

2. *Textbook of Pediatric Advanced Life Support*, American Heart Association, 1990.

3. *The HSC Handbook of Pediatrics, Eighth Ed.*, Alison G. Sheler, Mosby Yearbook, 1992.

4. *Pediatric Emergency Skills*, Jill French, Mosby Yearbook, 1995.

If you have any questions pertaining to this or any Gaumard product, please call the Customer Service Department at (800) 882-6655 for additional assistance.

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INSTRUCTION MANUAL

S221
CLINICAL CHLOE™
ADVANCED PATIENT CARE SIMULATOR
WITH OSTOMY

S220
CLINICAL CHLOE™
ADVANCED PATIENT CARE SIMULATOR
WITHOUT OSTOMY

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Revised: November 2000, November 2001

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SECTION I - INTRODUCTION

The **Clinical Chloe**™ is an advanced multipurpose simulator. Its features are as follows:

- Articulating head, neck, and jaw with removable dentures
- NG, OG, and otic exercises
- Interchangeable male and female breasts; left female breast has malignancy
- Realistic eyes and hair
- Vaginal douching and pap smear exercises
- Male and female genitalia to perform catheterization
- Stomas for transverse colostomy, ileostomy, and suprapubic exercises (S221)
- Enema administration
- Injection site in buttocks and upper arms

The **Clinical Chloe** comes detached at the waist for ease of shipping, and can be stored easily. The upper torso contains the following: ribcage; heart; left and right lungs; a stomach; and a liver.

To assemble the manikin, unscrew the two knobs at either end of the waist rod, located in the lower torso. Within the upper torso of the manikin you will find a vinyl bag connected by two clear tubes to the mouth and nose of the manikin. This is the stomach reservoir, and it **MUST BE CONNECTED TO THE LOWER TORSO BEFORE ANY EXERCISES MAY BE PERFORMED USING THE MANIKIN.**

To attach the stomach reservoir to the lower torso, connect the open red flange on the stomach bag to the red flange located on the uppermost portion of the lower torso. You may connect these by slipping the red flange on the stomach reservoir **INTO** the red flange on the lower torso.

You are now ready to attach the lower torso of the manikin to the upper torso. Ease the right half of the lower torso into the upper, being careful not to disengage the stomach reservoir. Line up the holes on that side and slide the rod through the hole on the upper torso. Replace the waist knob. Now repeat the procedure on the left side of the manikin, pulling the waist rod slightly out of the right side of the manikin to ease the assembly. Replace the waist knob.

To disassemble the manikin, reverse this procedure.

SECTION II - HOSPITAL CARE CAPABILITIES

1. Bandaging

The fingers and toes of this simulator are separated to permit bandaging exercises. The surface of the manikin is smooth and resistant to water, oil, and liniments.

2. Eyes/Ophthalmologic Exercises

The head has separately inset and removable eyes, permitting the following exercises:

- Administration of orbital medicines, including instillation of drops or ointment into the conjunctival sac.
- Removal of foreign bodies.
- Eye irrigation.

3. Teeth and Tongue

The simulator is supplied with removable upper and lower dentures. To remove teeth gently insert one finger into the upper or lower jaw and tap lightly. Dentures will immediately snap out. To reinsert, gently hold lower or upper lip and replace dentures. The tongue of the manikin can be moved gently from side to side.

- Note: Dentures are attached with Velcro, and **NO FORCE** is required for their removal

4. Hygienic Care

The head is supplied with a wig, permitting instruction in combing, shampooing, and head draping. The manikin surface is water resistant so that bathing exercises may be practiced.

5. Injection Sites

The site in the upper left and right arms allows administration of both intramuscular and subcutaneous injections anywhere on the circumference of the arm. There is also a site in the upper gluteal region to permit intramuscular injections in the buttocks. All injection sites are easily removed and replaced.

6. Breast Palpation and Examination

The manikin is provided with interchangeable male and female breast inserts. The soft vinyl permits breast palpation for tumor detection. The left female breast contains a simulated tumor. The right female breast is normal. If your manikin includes the detachable **S260** Breast Option, please see the included Instruction Manual for this option.

7. Male and Female Organs

The male organ attachment is a reproduction of the external genitalia of the adult male, complete with scrotum. The simulator is shipped with a red adaptor at the opening of the urethra for female catheterization exercises. The male organ is not attached when shipped. For attachment of the male organ, this red adaptor **MUST** be removed. Replacement adaptors are included. To attach the male organ, remove the red adaptor and set it aside. Please do not throw the red adaptor away, as it is necessary to perform female catheterization exercises. Gently slide the tube attached to the male organ into the opening of the urethra on the manikin, and attach the Velcro.

8. Range of Simulated Movement

The joints are strong and their movements are lifelike and realistic. The manikin bends at the waist. The head and jaw articulate.

9. Ears, Nose and Throat

- Left ear - the interior of the ear contains a simulated ear canal with a capacity of 10 ml, facilitating syringing exercises.

- Nasal/oral openings: both are connected to the stomach reservoir/tank, so that a #10 Levine tube may be used to demonstrate tube feeding and gastric suction. A gastric reservoir (capacity: 850 ml) is provided, with an opening for gastrostomy.

REMEMBER TO ALWAYS USE A LUBRICANT PRIOR TO INTRODUCTION OF A LEVINE TUBE OR ANY OTHER INVASIVE DEVICE.

NOTE: The nostrils can be pinched for exercises in CPR.

10. Stomach and Liver (S221)

The upper torso contains a realistic stomach and liver. The upper torso also includes a stomach tank into which a #10 Levine tube may be used to demonstrate NG/OG exercises such as tube feeding and gastric suction. A gastrostomy port connects directly to the stomach tank from the red flange located near the waist. **ALWAYS USE A LUBRICANT WHEN INTRODUCING THE LEVINE TUBE.**

11. Transverse Colostomy, Ileostomy, and Suprapubic Cystostomy (Model S221)

The creation of an ostomy port, a temporary or permanent excretory opening, is an important part of abdominal surgery. The simulator demonstrates the appearance of ostomy openings. The **S221 Clinical Chloe™** has anatomically sculptured stomas of a transverse colostomy, ileostomy, and suprapubic cystostomy, which may be performed as a result of abdominal surgery. Conventional ostomy drainage and irrigation exercises can be performed on the **Clinical Chloe™.**

The ostomy sites connect to reservoirs of appropriate size, and disposable or permanent ostomy bags may be applied to all openings. Exercises in skin preparation and stoma hygiene, as well as treatment of skin conditions around the sites may also be practiced. The reservoirs may be cleansed by introducing a solution of soap and water or detergent with a 60 cc. syringe. Alternatively, the reservoirs can be removed from the lower torso and cleaned. If the stomas are not in use, please be sure to seal them with the stoppers provided in the set-up kit.

12. Enema Administration

Administration of an enema may be performed on this manikin. The legs articulate sufficiently to permit enema exercises with the manikin on its back. The enema should be introduced with an anal nozzle of small diameter. Remember to use a lubricant.

PLEASE NOTE: A non-return valve is built into the anal canal to prevent fluid spilling during instillation. The enema reservoir capacity is approximately 800 ml.

13. Urinary System

The urethral passage and the bladder (capacity: approximately 2000 ml) are connected by a valve assembly to make catheterization exercises more lifelike. Fluid can be withdrawn from the bladder after the insertion of a #18 French catheter. The suprapubic opening may be used for filling the bladder or for drainage exercises. Please note that repeated sterilization can cause a variance in catheter diameters. An older device might permit fluid leakage. Therefore, different catheters should be inserted to determine a proper fit.

NOTE: ALWAYS USE A LUBRICANT WHEN INTRODUCING A CATHETER.

For additional information, see the sections on "Male and Female Catheterization."

14. Female Catheterization

One of the most important elements of nursing care is bladder catheterization: the removal of urine from the bladder by introduction of a catheter. This procedure must be conducted under aseptic conditions, to prevent the subsequent infection or inflammation of the urinary tract. **Clinical Chloe**™ permits catheterization with the simulator lying on its back. A suprapubic cystostomy opening is also present for practice in cystostomy management and maintenance. When practicing catheterization, the labia minora must be separated to examine the urethral opening, as in the female patient. The realistic simulation of the vulva area also permits instruction in asepsis and disinfection. When actually performing catheterization on the simulator, a "**one eye**" #18 French catheter is recommended for the most efficient use of the simulator. Catheterization exercises are carried out with the aid of an auxiliary bladder reservoir on a stand. The gravity feed of the fluid simulates the contraction of the bladder and adds to the realism of the procedure. The auxiliary reservoir with stand is provided with each simulator.

NOTE: ALWAYS USE A LUBRICANT WHEN INTRODUCING A CATHETER.

15. Male Catheterization

The **Clinical Chloe™** permit catheterization of the male in the upright or recumbent position by the attachment of the male organ. The flexible vinyl male organ contains the urethra, which is connected to an internal urinary bladder through a one-way valve. A suprapubic cystostomy opening is also present for practice in cystostomy management and maintenance. When performing catheterization, the penis must be manipulated to permit passage of the catheter, as in the male patient. The realistic simulation of the male genitalia also permits instruction in asepsis and disinfection. When actually performing catheterization, a "**one eye**" #18 French catheter is recommended for the most efficient use of the simulator. Catheterization exercises are carried out with the aid of an auxiliary bladder reservoir on a stand. The gravity feed of the bladder adds to the realism of the procedure. This auxiliary reservoir with stand is provided with each simulator. The simulator also demonstrates the appearance of the ostomy opening in the patient who has had a suprapubic stoma as a result of surgery on the bladder or prostate. All suprapubic cystostomy drainage and irrigation exercises can be performed on the **Clinical Chloe™**.

NOTE: ALWAYS USE A LUBRICANT WHEN INTRODUCING A CATHETER.

16. Decubitus Ulcers

A decubitus ulcer is caused by prolonged pressure in a patient confined to bed and in one position for a long period of time. They are also known as **pressure sores** or **bed sores**. The simulator is supplied with two of these ulcers. These ulcers are anatomically accurate. The first decubitus ulcer illustrates the initial stage of ulceration. The second decubitus ulcer illustrates the suppuration or pus/deeply infected stage.

SECTION III - GENERAL NOTES

1. Lubrication

ALWAYS USE A LUBRICANT WHEN INTRODUCING A CATHETER OR INVASIVE DEVICE. IN ADDITION, PLEASE NOTE THAT REPEATED STERILIZATION OF OLDER CATHETERS CAN CAUSE A VARIANCE IN CATHETER DIAMETER. SEVERAL CATHETERS SHOULD BE TRIED TO DETERMINE A PROPER FIT.

2. Catheters - Troubleshooting

There may not be an immediate outflow of water on introduction of the catheter, especially if catheterization is performed with the manikin in the supine position. Should an airlock/ blockage occur, simply inject air through the catheter. This should cause the reservoir to function normally.

The **Clinical Chloe**™ is designed to simulate the sensitivity of the human urinary system. For this reason, the bladder tank will disengage internally in the event that a catheter is inserted with excessive force. In this case, remove the catheter, reattach the bladder tank, and reinsert the catheter more gently, applying lubricant as necessary.

3. Emptying the Reservoir System

A) To remove the remaining fluid from the bladder reservoir after catheterization exercises are complete, sit the model up over a bedpan with the catheter in place.

B) Purging the entire system of fluid may be accomplished by removing the waist rod, separating the upper torso from the lower torso, and "squeezing" out the fluid.

4. Filling of the Bladder

The bladder should be filled through the suprapubic opening. This may be done in one of two ways. Instillation of water (approximately 500 ml into the 2000 ml tank) through introduction of an appropriate funnel at the suprapubic site; or, by using a catheter with a large syringe.

5. Cleaning

- The skin of the manikin may be cleaned with mild detergent, or soap and water
- Indelible marks made with ballpoint pens, ink or magic markers will remain.
- Do not wrap this or any GAUMARD simulator in newsprint.
- Do not use povidone-iodine on the simulator.
- Improper storage may damage the manikin - keep the manikin stored in the box provided.
- Do not stack or keep heavy materials on top of the box.
- Keep the manikin in a cool area.

If you have any questions regarding the simulator described in this manual, please call
Customer Service for further assistance.

800-882-6655 USA
305-971-3790 Worldwide
305-667-6085 Fax

e-mail: sima@gaumard.com

Internet Catalog: www.gaumard.com

ASSEMBLY TIP

WHEN ASSEMBLING THE UPPER AND LOWER TORSO:

- FIRST INSERT THE THREADED ROD COMPLETELY THROUGH THE LOWER TORSO
- PLACE UPPER TORSO ABOVE LOWER TORSO.
- SLIP ONE END OF THE ROD THROUGH THE HOLD ON THE **LEFT** SIDE OF THE UPPER TORSO - ATTACH LOCKING NUT.
- NOW SLIP THE OTHER END OF THE ROD THROUGH THE HOLE ON THE **RIGHT** SIDE OF THE UPPER TORSO - ATTACH SECOND LOCKING NUT.

For additional information call:

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