



Gaumard[®]
Simulators for Health Care Education

S109

NEWBORN PEDI[®]

USER GUIDE



Newborn PEDI[®] is an interactive educational system developed to assist a certified instructor. It is not a substitute for and not intended for clinical decision making.

User Guide 17.9.2
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1. INTRODUCTION

1.1 SPECIFICATIONS

Newborn PEDI®

- 8 lbs.
- 19.5 inches
- 33" x 7" x 7" inches

Newborn PEDI® S109 is a full term newborn skills trainer for procedural training that includes airway intubation, resuscitation, IV cannulation, umbilical catheterization, IO infusion, chest tube insertion, lumbar puncture, and pulse palpation.

1.2 TERMINOLOGY

Facilitator: The person conducting the simulation; an instructor or lab staff member

Provider: A person participating in the simulation as a healthcare provider

Fill kit: Syringe and tubes used to fill urinary and hemorrhage reservoir.

Lumbar Insert: A representation of a newborn spinal segment. The insert is composed of the skin layer, subcutaneous layer, simulated ligamentum flavum, and lumbar vertebrae.

Stoma blank: An insert simulating healthy skin that covers the ileostomy, colostomy, and suprapubic stoma sites.

1.3 CARE AND MAINTENANCE

The lubricants and other accessories provided are for use with the accompanying patient simulator only. The lubricants and other accessories are not suitable for human use or medical treatment/diagnosis and should never be used for such purposes.

CAUTION: Damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines.

General

- Do not wrap this or any other Gaumard product in newsprint.
- Marks made with ballpoint pens, ink or marker cannot be removed.
- Replacement parts are available from Gaumard or from your distributor.
- Do not use povidone iodine or Betadine type antiseptic solutions as these may permanently stain the simulator.
- Only use simulated blood provided by Gaumard. Other simulated blood containing sugars and other additives may cause blockage of the vasculature system.

Cautions

- Treat the simulator with the same precautions used with a real patient.
- Have providers wash their hands prior to use to prevent dirt and oils from clinging to the material.
- Do not palpate using fingernails as this may tear the skin: palpate using the pads of the fingers.

- Do not attempt to intubate without lubricating the airway adjunct with mineral oil lubricant. Failure to lubricate the device will make intubation very difficult and is likely to result in damage to the simulator.
- Mouth to mouth resuscitation without a barrier device is not recommended as it may contaminate the airway.

Storage

- Store the simulator in a cool, dry place. Extended storage above 85° F (29° C) will cause the simulator to soften and slowly warp.
- Humidity: 40% - 60% (non-condensing)
- Do not stack or store heavy materials on top of the box. Please store and ship it in the clear bag provided.

Cleaning

- Remove all traces of lubricant at the end of each simulation session.
- Remove the fluid using the fill kit provided.
- Flush the fluid reservoirs with a 30:70 mix of isopropyl alcohol to water after each day of simulation letting it drain through the drainage tube. Reference Section 3.5 “Draining the Fluid System” for more details.
- Push air through the filling tube and out of the drainage port to ensure mold does not form in the vasculature or other reservoirs.
- The simulator is “splash-proof” but not water proof. Do not submerge in water.
- The simulator should be cleaned with a cloth dampened with diluted liquid dishwashing soap.
- Do not clean with harsh abrasives.
- Dry thoroughly after every cleaning.
- After drying, application of talcum powder can return the simulator to its lifelike feel.

2. OVERVIEW

2.1 FEATURES

- Anatomically accurate oral cavity and airway for airway training
- Visible chest rise with assisted ventilation
- Realistic chest compression and recoil
- Fontanelle, umbilical, brachial, and femoral pulses
- IV cannulation, umbilical artery catheterization, lumbar puncture, and IO infusion

2.2 PROCEDURES

General

- Full term neonate has full range of motion with smooth, full body skin and articulating joints that includes palpable lumbar landmarks, and a flexible spine
- Practice lumbar puncture with the help of realistic lumbar landmarks
- The lumbar puncture insert facilitates catheterization, infusion and sampling

- Rehearse IO tibial infusion with replaceable IO bones
- Simulate IM injections on the anterolateral thigh
- Perform urinary catheterization on male or female genitalia with return

Airway

- Anatomically accurate epiglottis, glottis and trachea provides realism for endotracheal intubation and supports the Sellick maneuver
- Patent trachea supports use of suctioning and airway adjuncts
- Perform airway exercises with an ET Tube, BVM, or LMA device

Respiratory

- Practice unilateral chest tube insertion
- Positive pressure ventilation provides a visible chest rise

Cardiac

- Practice palpating pulses at the fontanelle, right brachial and right femoral regions, and the umbilical cord
- Perform CPR with realistic chest recoil

Vascular Access

- Perform heel stick with blood draw in both feet
- Practice drug administration
- Train on IV cannulation in the hand, scalp and umbilicus
- Umbilical access for catheterization exercises, continuous infusion and sampling.

Gastrointestinal

- Patent esophagus supports gastric (NG/OG) feeding and suctioning
- Simulate gastric suctioning
- Practice stoma care with three stoma types; ileostomy, colostomy and suprapubic

3. INITIAL SETUP

3.1 CARE AND CAUTIONS WHEN UNBOXING

- Lift the simulator from the box with both hands at the body and remove the clear bag it is shipped in.
- Avoid lifting or dragging the simulator by the arms or legs as this may cause damage to the joints.
- Rest the simulator on a bed or clean, flat surface for use.

3.2 PACKAGE CONTENTS



1. Full size neonate
2. Male and female genitalia (female installed)
3. (3) Stoma blanks (installed)
4. (3) Stoma sites
5. Normal umbilicus (installed)
6. (3) Umbilical stumps (clamp not included)
7. (3) Chest tube sites (1 installed)
8. IM insert
9. (3) Lumbar insert (1 installed)
10. (7) Left IO bones (1 installed)
11. (7) Right IO bones (1 installed)
12. (3) Left legs with heel stick inserts (1 installed)
13. (3) Right legs with heel stick inserts (1 installed)
14. IV bag with tubing and stand
15. Fluid reservoir fill kit
16. IO fill kit
17. Drainage kit
18. Squeeze bulb with tubing
19. Baby onesie
20. Diaper
21. Mineral oil lubricant
22. Blood concentrate

3.3 ASSEMBLY

Newborn PEDI® is provided with three stoma blanks, normal umbilicus, IO bones, and replaceable legs with heel stick inserts pre-installed.

3.4 FILLING THE FLUID SYSTEM

1. Connect the drainage tube to the black drain port located on the simulator's left side. Make sure the drainage tube drains into a receptacle and that the clamp is open.



2. Connect the fill tube to the white fill port located on the simulator's left side.
3. Insert the air rods provided into the chest tube port and the urinary catheter port to release air pressure to prepare for filling.

NOTE: The umbilical cord is connected with this fluid system. It must be clamped before filling to avoid leaks.



4. Fill the syringe from the fill kit with fluid and attach it to the fill tube connected to the white fill port on the simulator's left side, then fill the fluid system until it is draining out of the air rods and drainage tube without any bubbles.



5. Once the fluid system is completely filled, clamp the drainage tube.

NOTE: Drain and flush the fluid system at the end of each day of simulation. See the Section 3.5 "Draining the Fluid System" for more details on flushing and cleaning the reservoir.



CAUTION: If you are using simulated blood, use only Gaumard simulated blood provided with the simulator. Any other brands of simulated blood may contain sugar and other additives that may cause blockage and/or interruption of the fluid system.

3.5 IV BAG & STAND ASSEMBLY

1. Place the dispensing IV bag on the stand provided
2. Purge all air from the fill tube prior to filling the bag with fluid using the syringe in the fill kit.

The dispensing bag holds up to 1.5 Liters. Connect the fill tube to the white fill port for continuous flow into the simulator.

NOTE: If the IV bag is connected to the simulator and fluid is being introduced, the drainage tube must be connected to the black port to allow the fluid to flow freely through the fluid system.



4. WORKING WITH THE SIMULATOR

4.1 AIRWAY TRAINING

- When using any tool for intubation or nasal and oral suctioning, lubricate the tool to ensure easy insertion and avoid damage to the simulator.
- The recommended sizes for the airway devices used on the Newborn PEDI are Miller size 0, LMA size 1-2, a 3.0mm endotracheal tube with no cuff.



CAUTION: Do not insert fluids into the simulator's nose or mouth. The oral and nasal passages are for placement exercises only.

4.2 RESPIRATORY

- Use an infant sized mask to create a secure seal around the simulator's face to achieve visible chest rise.
- When inserting a chest tube, lubricate it to avoid unnecessary pulling or tearing of the skin.
- To replace the chest tube insert, simply remove the chest tube site and gently press the new chest tube site into place.



4.3 PULSES

- Connect the squeeze bulb and tube to the port on the right side of the simulator. The pulse sites are located at the fontanelle, the umbilicus, and the right brachial and femoral arteries.
- To generate a pulse, gently squeeze the squeeze bulb at the desired pulse rate.



Fontanelle



Right femoral



Right brachial



Umbilical

4.4 GENERAL

Filling the IO Reservoir

1. Remove the skin from the foot by gently rolling it back.



2. Lift the IO bone from the socket and unscrew one end.



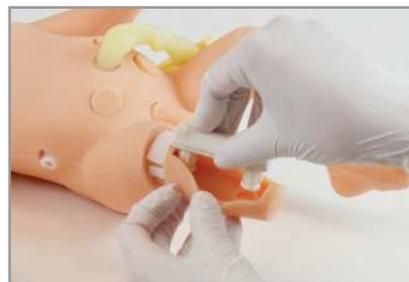
3. Fill the syringe from the fill kit with fluid and inject it into the reservoir.



4. Once the IO reservoir is filled, screw the cap back onto the end of the bone.



5. Place the IO bone back into the socket.



6. Roll the leg skin back onto the lower leg and gently press down the Velcro edges to secure it.

- It is recommended to use a 16 - 18 gauge needle to perform IO exercises.
- IO leg accommodates other needle sizes, though larger needles may affect the longevity of the bone insert and skin.

NOTE: Holes made during IO exercises can be sealed with a cyanoacrylate adhesive.

- To flush the reservoir, repeat steps 1 and 2 and push air through the bone using the syringe. Reference Section 1.2 “Cleaning” for more details.
- Make sure to have both caps of the bone off.



Lumbar Puncture

- The silicone skin is supple and has anatomical landmarks that can be palpated for positioning of the needle. The lumbar insert has a self-contained reservoir.
- Using a 22-25 gauge needle can help to extend the uses of the lumbar puncture insert.

1. To fill the lumbar puncture insert, lift the insert from the socket and uncap one side of the reservoir.



2. Use the syringe to fill it with fluid.



3. Once it is filled, place the cap back onto the end of the lumbar insert.



4. Align the insert's edges to the receiving grooves in the simulator and slide it into place.



To replace the lumbar puncture insert, follow steps 1 and 4 in this section.

NOTE: Apply alcohol to the lumbar insert if the materials are sticking to ease the insertion.



Intramuscular Injection Site

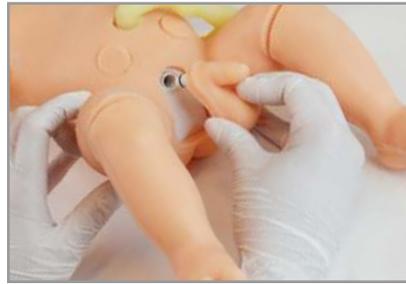
IM site to practice placement is located on the left anterolateral thigh



CAUTION: Do not inject fluids into the IM site as this may cause mold and damage the insert.

Urinary Catheterization

- The male and female genitalia are interchangeable.
- To change the genitalia, gently pull the genital off the simulator. Align, the chosen genital to the pelvis, Velcro side down, and press it down.
- The recommended catheter gauge is 5-8 Fr.
- Lubricate the catheter before each exercise.
- When draining the simulator, you may catheterize it to remove any excess fluid from this region.



NOTE: If the fluid system is filled with simulated blood, the fluid released through the catheter will be the same simulated blood.

4.5 VASCULAR ACCESS

IV Hand

- The left IV hand is attached to the lower arm with a magnet and a self-contained reservoir not associated with the fluid system; it includes a pre-filled vein.
- Once the vein is empty, it cannot be refilled.
- Depending on the needle size used, the hand may be used several times for IV exercises.
- To change the IV hand, gently pull it from the lower arm and attach the new hand by aligning it to the magnet on the end of the lower arm.



Scalp Vein

- It is recommended to use a 23 gauge needle to access the scalp vein on the left side of the scalp.
- If practicing infusion exercises, be sure to unclamp the drainage tube connected to the fluid system.



Filling the Umbilical Stump

Fill the umbilical cord separately using the syringe provided before attaching it to the fluid system's fluid line.

1. Fill the umbilical stump with the syringe provided in the fill kit over a receptacle from the end until it drains without any interruption.
2. Clamp it once it is full and gently push a little more fluid ensuring it is sufficiently filled before connecting it to the fluid line.



Changing the Umbilicus

The umbilicus is interchangeable with the umbilical stumps.

1. To change the either, gently lift it out of the abdomen to reveal the clear fluid line.
2. Gently twist the fluid line from the end of the umbilicus and attach it to the umbilical stump.
3. Once the fluid line is attached, gently press the umbilical stump into the abdomen.

NOTE: Lubricate the catheter before inserting it into the umbilical cord.



Heel Stick

- The heel stick inserts are pouches inside the heel of each foot embedded in the skin.
- Once the heel stick insert is out of fluid, replace the lower leg skin by folding it down and gently pulling it off.
- To attach the new insert, roll it back onto the lower leg and gently press down to secure the Velcro.

NOTE: Apply alcohol to the leg skin cover and the lower leg if the materials are sticking to ease the assembly.



4.6 GASTROINTESTINAL

Nasogastric and Orogastric Intubation

The newborn's nostril and mouth connects to the throat and lungs. NG tubes can be inserted for placement exercises.

NOTE: Lubricate the tubes before placement, to avoid damage to the simulator.



CAUTION: Fluids should not be introduced into these areas since there is no drainage connected to them. Fluid in the lungs may cause the lungs not to rise or mold to form.

Gastric Suctioning

- The newborn's patent esophagus supports exercises for gastric tube placement and simulated suctioning.
- If an OG tube is used and it is inserted past the valve, fluids may be added as it connects with the fluid system.



Stoma Care

- There are three stoma types provided with the simulator: ileostomy, colostomy and suprapubic.
- The stoma sites are attached with Velcro. To change a stoma site, lift it from the abdomen and gently press down.
- Use stoma blanks to cover the stoma sites that are not being used in a simulation.
- Reference Section 1.2 “Cleaning” for details on cleaning the stoma insert.



4.7 DRAINING THE FLUID SYSTEM

1. Unclamp the drainage tube and umbilical cord.

NOTE: The umbilical cord is connected with this fluid system. It must be detached and drained separately before draining the fluid system.

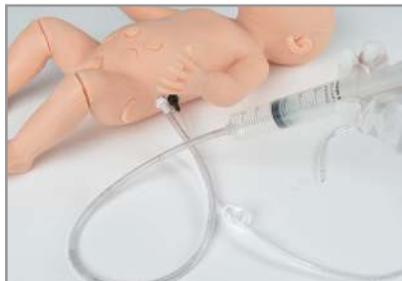
If the fluid system has been filled with simulated blood, fill the syringe from the fill kit with a 30:70 mix of isopropyl alcohol to water.



2. Attach the syringe and fill tube to the white fill port and push the solution through the reservoir system until the solution is clear.



3. If simulated blood was not used, skip steps 2 and 3 and attach the empty syringe and tube to the black drain port and suction all fluid out. The syringe can also be attached to the white fill port to push air through to drain from the black port.



4. To ensure there is no fluid left in the system, push air through the fill port until the fluid system is dry.



5. APPENDIX

5.1 CONSUMABLE PARTS LIST

Product	Item Number	Contents
Left arm assembly	S109.803L	Set of 3 left IV hands
Chest Decompression Site	S109.926	Set of 3 chest decompression sites
Stomas	S109.868	Set of 3 stom sites
Stoma Blanks	S109.868.1	Set of 3 stoma blanks
Umbilicus	S109.840	1 normal umbilicus
Umbilical Stumps	S109.840.1	Set of 3 umbilical stumps
Lumbar Insert	S109.716	Set of 3 lumbar inserts
I/O Bones	S109.835R S109.835L	Set of 7 right interosseous tibial bones Set of 7 left interosseous tibial bones
Heel Stick Inserts	S109.717R S109.717L	Set of 3 right heel stick inserts Set of 3 left heel stick inserts
Mineral Oil	S109.181	Mineral oil lubricant
Blood Concentrate	S109.080	Artificial blood concentrate

5.2 EXCLUSIVE ONE-YEAR LIMITED WARRANTY

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

This limited warranty covers all defects in material and workmanship in the Gaumard product, except:

- Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
- Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product; and
- Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

This one-year limited warranty is the sole and exclusive warranty provided by Gaumard for the accompanying Gaumard product, and Gaumard hereby explicitly disclaims the implied warranties of merchantability, satisfactory quality, and fitness for a particular purpose. Except for the limited obligations specifically set forth in this one-year limited warranty, Gaumard will not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory regardless of whether Gaumard has been advised of the possibilities of such damages. Some jurisdictions do not allow disclaimers of implied warranties or the exclusion or limitation of consequential damages, so the above disclaimers and exclusions may not apply and the first purchaser may have other legal rights.

This limited warranty applies only to the first purchaser of the product and is not transferable. Any subsequent purchasers or users of the product acquire the product "as is" and this limited warranty does not apply.

[This limited warranty applies only to the products manufactured and produced by Gaumard. This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third parties.](#)

For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. However, third-party products are covered by the warranties provided by the respective third-party manufacturers and such warranties are transferred from Gaumard to purchaser upon purchase of the Gaumard product. Defects in third-party products are covered exclusively by the warranties provided by the third-parties. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Please contact the third-party manufacturer for information regarding the availability of extended warranties for third-party products. Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard.

In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:

1. Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the
2. Gaumard product to Gaumard without prior authorization.
3. Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.

If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

5.3 CONTACT GAUMARD

Before contacting technical support, please make sure to have your simulator and user guide readily available.

Email: support@gaumard.com

USA: 800-882-6655

INT: 01-305-971-3790

5.4 GENERAL INFORMATION

E-mail: sales@gaumard.com

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