MamaNatalie (Torso) Set up and Maintenance

Hemorrhage prep

- Fill the blood tank with *up to* 1.5L of simulated blood. Device comes mock blood – mix per instructions on bottle. Utilize white fluid drain and protectant mat for scenario.
- Ensure the blood tube is connected to the nipple on the back of the skeleton and that the nipple is twisted 90 degrees to lock it in place.
- Utilize white fluid drain and protectant mat for scenario.
- Facilitator adjusts slider from none (left) to moderate (middle) to severe (all the way to the right).
- Positioning Tip: If you are lying flat while wearing the simulator, you must tilt your body forward to maintain the gravity-fed flow of blood toward the vaginal opening.

Catheter set up

- Optional set up for urine simulation
- Fill syringe with 5mL of water (yellow food color for fidelity). Utilize catheter to inject into urethra.

Cervix:

- Use the ribbon to set the desired dilation (e.g., fully dilated for immediate delivery).

Uterus

- Ensure uterus is secured on a hook near fill tank to keep from progressing down with baby decent.
- Attach placenta with cord to back of uterus using Velcro patch.
- Attach placenta cord to infant cord.
- Insert baby in delivery position (vertex / breech).
- Close uterus and pull stomach skin back over device.
- Strap the simulator securely to the facilitator's waist or utilize as tabletop demonstration.

Infant crying bulb

- Optional use for squeaker device within straps.

Materials

- Included in kit are stethoscope, drape, and one set of gloves.
- Gather facility routine supplies based on scenario, such as, precipitous delivery kits, hemorrhage cart, quantified blood loss tools, etc.

MamaNatalie (Torso) maintenance and storage

- Flush the Blood Tank: Drain any remaining simulated blood. Fill the tank with clean, lukewarm water and flush it through the tubes and valves until the water runs clear.
- Dry the Reservoir: Hang the blood tank upside down with the cap open. Ensure the delivery tubes are draped downward so no water traps in the "loops."
- Textile Parts: If the dark green cloth or "stomach skin" got wet/bloody, machine wash them (cold/gentle) or hand wash with mild soap. Air dry only—do not put them in a high-heat dryer.
- Avoid Plastic Bags for storage. Never store a damp simulator in a sealed plastic bag or airtight container; this creates a greenhouse for mold.
- Loose Packing: Store the components loosely in the provided carry bag. Do not fold the "skin" parts sharply, as this can cause permanent creasing or tearing over time.
- Temperature: Keep in a cool, dry place away from direct sunlight (UV rays can degrade the specialized plastics).

Set Up Torso Video

MamaNatalie User Guide

NeoNatalie (Baby) Set up and Maintenance

Inflate and fill

- Pull the filling nozzle from under the face skin and open the valve.
- Blow into the valve to partially inflate the body (this separates the internal foils).
- Unscrew the cap at the top of the head and pour in approximately 2 liters of water until firm.

Attach hard skull

- Fold the skull sides upward and place the triangular fontanel on the forehead.
- Fold the sides back down to cover the ears.
- Feed the strap under the airways and secure it through the small hole on the opposite side; do not tighten it over the airways as this prevents ventilation.

Connect umbilical cord

- Click the umbilical cord connector from the placenta into NeoNatalie's connector.

Set Up Baby Video

MamaNatalie User Guide

(Image per Laerdal)

Remove breathing simulation tubes on right side

- Option to apply after birth for breathing and interventions.
- Green tube is for infant breath.
- Red tube is for cord pulsations.

Materials

- Included in kit is a stethoscope, infant hat, white blanket, and bulb mock 'cry' device.
- Gather facility routine supplies based on scenario; CPAP, PPV, ETT/ LMA, Laryngoscope, SpO2, EKG, Epinephrine, UVC, mock cord clamps and other NRP materials.

NeoNatalie (Baby) maintenance and storage

- Drain Water: Unscrew the cap at the top of the head and pour out all water.
- Prevent Mold: Add a small drop of bleach or Milton solution to the last bit of rinse water if the unit will be stored for a long period.
- Air Dry: Leave the head cap off and the filling nozzle open. Hang the baby upside down by the feet to allow all internal moisture to evaporate.
- Skin Care: If the "skin" feels sticky, apply a light dusting of talcum powder or cornstarch.
- Avoid Plastic Bags for storage. Never store a damp simulator in a sealed plastic bag or airtight container; this creates a greenhouse for mold.
- Loose Packing: Store the components loosely in the provided carry bag. Do not fold the "skin" parts sharply, as this can cause permanent creasing or tearing over time.
- Temperature: Keep in a cool, dry place away from direct sunlight (UV rays can degrade the specialized plastics).

MamaNatalie Routine Birth Guide

Fetal Heart Tones (FHT)

- Use finger to tap on back part of plastic frame to simulate desired heart rhythm. Team may use fetoscope provided.

Maternal status

- Standardized Patient display maternal pain response per scenario.
- Facilitator verbal or visual relay vital sign status to participants.

Dilation

- As set per cervical ribbon in set up. As baby progresses, this will adjust for birth.
- Effacement is not an option to simulate with this model

Contractions

- Standardized Patient place hand under skin at fundus so 'firm' to palpation then respond with discomfort per scenario.

Stage/decent

- Standardized Patient places hands under skin to push on baby chin/body with thumbs while holding on to straps on either side of uterus. Mimic rotational maneuvers with crowning.
- *Facilitator Action*: Ensure team is supporting the birthing person and partner physically and emotionally.

Neonatal cry

- Use squeaker to simulate baby cry. Apply right sided breathing tubes for breath/ cord pulsation fidelity.
- *Facilitator Action:* After birth, conr baby with a weak cry or apneic, requiring further interventions per NRP algorithms.

Placenta

- Standardized Patient removes placenta Velcro and allow placenta to descend as participant performs fundal massage and mild cord traction.

Uterus

- Tighten cervical ribbon and control tone using same process as contraction simulation.

Vaginal bleeding

- Standardized Patient slides blood valve to half way or less to simulate 'normal' bleeding.
- *Facilitator Action:* Ensure team assesses vital signs, quantitative blood loss, fundal tone and full placenta passing for maternal wellbeing. In addition, ensure the prophylactic administration of postpartum oxytocin for prevention of hemorrhage.

Routine Birth Video

(Image per Laerdal)

MamaNatalie Complicated Birth Guide

Shoulder dystocia

- Position NeoNatalie with the head in the pelvis and the buttocks at the fundus.
- The "Turtle Sign": After the head is delivered, the standardized patient slightly pulls the baby back and holds the body firmly to prevent delivery of the shoulders.
- Require learners to demonstrate determined maneuvers before releasing the body (i.e. McRoberts Maneuver, Suprapubic Pressure or internal maneuvers).

Breech presentation

- Placement: Lie the baby with the buttocks in the pelvis and the head at the fundus.
- Standardized Patient controls the descent of the baby through the pelvis as the learner practices "hands-off" breech delivery until the umbilicus is visible.
- If the head or arms get stuck, provider to demonstrate the Lovset (for arms) or Mauriceau-Smellie-Veit (for head) maneuvers.

Vacuum delivery

- Identify need for operative vaginal delivery per scenario.
- Provider to apply vacuum device and assist delivery with maternal pushing efforts.
- See *Vacuum Delivery* Video via QR code.

Vacuum Delivery Video

Hemorrhage Demonstration Video

Postpartum Hemorrhage (PPH) & uterine tone

- Atonic Uterus: Use the squeeze bulbs to keep the "uterus" (air reservoir) soft/boggy.
- Hemorrhage Control: Slide the blood valve to the "Full" (far right) position to simulate severe bleeding. See video.
- Once the learner performs effective Fundal Massage or Bimanual Compression, the standardized patient squeezes the bulb to make the uterus firm and slide the blood valve to "Closed".
- Utilize mock meds and IV fluid replacements.
- See *Hemorrhage Demonstration Video* via QR code.

(Image per Laerdal)

Retained placenta

- Full Retention: Standardize patient does not detach the placenta from the internal Velcro patches.
- Partial Retention: Standardize patient keeps a small piece of the placenta (or a secondary accessory piece) attached to the Velcro while the main body is delivered.
- If the learner pulls the cord, hold the placenta in place to simulate it being stuck. Challenge the learner to identify that the delivered placenta is incomplete.

Newborn Anne Set Up and Maintenance

Set up

- **Umbilical Pulse Set Up:** attach bulb for manual pulse attached to left buttock connection site. Then, fill the reservoir using IV bag (not provided) connected to tubing and attached to right button connection site with up to 40mL of saline (maximum volume for pulse and medication injections). Disconnect reservoir tubing. Trial palpate the umbilical pulse while pumping manual bulb to ensure function. During scenario, facilitator must squeeze bulb to simulate umbilical pulse.
- **Advanced Airway:** Lubricate the ET tube or LMA with provided product prior to intubation to protect manikin features. Recommended supplies include; size 1 straight laryngoscope, 3.5 endotracheal tube [ETT] or size 1 laryngeal mask airway [LMA]) to achieve depth of 9.5 from the upper lip. NOT designed for automatic ventilators.
- **IV Access:** Consider medication volume to be administered so as not to fill past 40mL. Recommended UVC size 3.5F or 5F. Intraosseous (IO) access available in lower legs, up to 35mL of fluid per side.

Materials

- The kit includes a term newborn manikin (7 lbs and 21 in long), IV bag connector tube, pulse bulb with tube, meconium kit, umbilical cord, airway lubricant, baby powder, mock blood and diaper.
- Gather facility routine supplies based on scenario; infant warming device, CPAP, PPV, ET / Laryngoscope, SpO2, EKG, Epinephrine, UVC, mock cord clamps and other NRP materials.

Maintenance after use

- **Drain fluids:** Drain medication and pulse fluids using empty IV bag and tubing connected to drainage reservoir. Drain IO fluids by opening plug behind each knee. Drain abdominal reservoir by removing umbilical cord, suction reservoir and add clear or soapy water until clean.
- **Tuck neck skin:** If neck has been extended, ensure edge tucked proprerly into the collar line.
- **Powder:** use a small amount of powder to lightly dust exterior, especially neck, shoulder and hip joints to prevent sticking.

Newborn Anne User Guide

(Image per Laerdal)

Newborn Anne Skills Guide

Skill practice opportunities

- **General**
  - Participants may assess umbilical pulse, extremity range of movement and perform gastric suction and chest compressions.
- **Airway**
  - Participants may demonstrate effective suctioning and meconium suctioning.
  - Ventilate with visible bilateral chest rise using CPAP, PPV, and/or an advanced airway (ETT or LMA).
  - With continued mask ventilation or esophageal intubation, the abdomen will become visibly distended and audible with stethoscope.
  - In cases of mainstem intubation will result in unilateral chest rise.
- **Procedures**
  - Providers may demonstrate intubation, umbilical catheter placement, IO placement, and pneumothorax resolution via unilateral needle thoracentesis (anterior-axillary)
- **Drugs and IV**
  - Medication may be administered via umbilical vein up to 40mL (if not full from umbilical pulse set up)
  - Medication can be administered via IO in either leg (up to 35mL)

Newborn Anne User Guide

(Image per Laerdal)