High Tech Mannequins – Pediatrics

Laerdal SimBaby and SimNewB

The SimBaby is designed to simulate working with an approximately 6 month to 1 year old child while the Sim NewB should be used for a scenario that calls for a child of less than 10 days old. Each have a variety of features listed below for comparison. Here at NYSIM, the NewB is usually set up in an infant warmer while the SimBaby can be in a Transport Isolette (Draeger Caleo), in a carseat for prehospital scenarios or on a stretcher, depending on your needs for the scenario. Neither SimBaby nor SimNewB are completely wireless, however we are able to have the instructor in a separate control room from the learners. We have four SimBaby patients and one SimNewB newborn.

Please scroll all the way down for our congenital anomaly moulage set available for use with the SimNewB.

Airway features	Baby	NewB
Airway occlusion (head tilt/chin lift, jaw thrust)	✔	NO
Obstructed airway simulation	✔	NO
Instructor controlled mechanical airway closure	✔	NO
Chest tube insertion - left midaxillary	✔	NO
Right mainstem intubation	✔	✔
Oral/nasal airway insertion	✔	✔
Endotracheal tubes - insertion, securing & care	✔	✔
Intubation, Oral & Nasal	✔	✔
Oro- & nasopharyngeal airways - insert & suctioning	✔	✔
Sellick maneuver	✔	✔
Oxygen delivery procedures	✔	✔
Suctioning techniques	✔	✔
Auscultation of lung sounds	✔	✔
Individual lung or bilateral sound selection	✔	✔
Needle chest decompression - Left Side Only	✔	✔
Stomach decompression	✔	✔
Laryngeal mask airway	✔	✔
Auscultation of lung sounds during ventilation	✔	✔
Lung sounds, synchronized with breathing rate	✔	✔
Meconium Aspiration Module	NO	✔
Co2 exhalation	✔	✔
Positive pressure ventilation	✔	✔
Airway complications (instructor controlled)	✔	✔
Realistic chest rise and fall	✔	✔

Inflatable tongue edema	✔	NO
Pulse oximeter/SpO2 Saturation	✔	✔
Circulation	Baby	NewB
Instructor controlled ECG rhythm	✔	✔
ECG monitoring	✔	✔
Defibrillation (manual/automatic)	✔	NO
Auto conversion of ECG w/defibrillation	✔	NO
Defibrillation sensors	✔	NO
Auscultation of heart sounds	✔	✔
Cyanosis	✔	✔
Heart sounds, synchronized with programmable ECG	✔	✔
Spasm / Seizure	✔	✔
Pacing	✔	NO
Blood pressure / pulses	Baby	NewB
Adjustable pulse strength	✔	NO
Pulses only active when palpated	✔	NO
Umbilical and right brachial pulses	NO	✔
Bilateral femoral, left radial and brachial pulses	✔	NO
Adjustable Heart rate	✔	✔
Synchronized with ECG	✔	✔
Pulse strengths dependent on BP	✔	NO
Adjustable bp levels (systolic/diastolic)	✔	✔
Blood pressure auscultation	✔	✔
Korotkoff Sounds, synchronized with ECG	✔	✔
Blood pressure / pulses	✔	✔
Circulatory skills and IV drug administration	✔	✔
Volume infusion	✔	✔
Realistic flashback	✔	✔
Umbilical cord catheterization	NO	✔
IV insertion	✔	NO
IO insertion	✔	✔
CPR	Baby	NewB
Anatomical landmarks	✔	✔
Head tilt/chin lift sensors	✔	NO
Ventilation with bag-valve-mask	✔	✔
Ventilation measurement and feedback	✔	✔
Closed chest compressions	✔	✔
Compression measurement and feedback	✔	✔

Gastrointestinal	Baby	NewB
NG Tubes - insertion, care and removal	✔	✔
Gastrostomy tube - placement and care	NO	✔
Eye features	Baby	NewB
Interchangeable pupils	✔	✔
Gender, age, size	Baby	NewB
Pediatric - Approx 1 year old	✔	NO
Newborn	NO	✔
Female	NO	✔
Full-body manikin	✔	✔
Vocal sounds	Baby	NewB
Pre-recorded vocal sounds	✔	✔
Other	Baby	NewB
Variable fontanelles	✔	NO
Body movement	✔	✔
Different sounds	✔	✔
NewB Congenital Anomaly Set:	NO	✔
Foreceps Laceration Head Skin (1)	NO	✔
Cleft Lip Head Skin (1)	NO	✔
Cystic Hygroma Head Skin (1)	NO	✔
Polycystic Kidney Modules (2)	NO	✔
Myelomeningocele Module (1)	NO	✔
Omphalocele (1)	NO	✔

Gaumard HAL – 5-Year-Old

HAL is designed to simulate an early school age child, generally 5 – 7 years old. Our only African American patient, HAL is completely wireless and is operated from a tablet style computer that the instructor can easily carry. The mannequin control software is entirely touchscreen using a stylus.

General
Tetherless and fully responsive even while being transported
Powered from an internal rechargeable battery or wall outlet
Simulator receives commands from a wireless tablet PC and operates at distances up to 300 feet.
Simulator can operate automatically using optional Automatic Mode or by the Instructor
Training Guide with both basic and advanced interactive scenarios
Use pre-programmed scenarios, modify them or create your own quickly and easily
Installation and training worldwide
Airway
Programmable airway
Tongue edema
Multiple upper airway sounds synchronized with breathing
Nasal or oral intubation
Right mainstem intubation
Sensors detect depth of intubation
Airway may be obstructed
Block right lung, left lung, or both lungs
Head tilt/ chin lift
Suctioning techniques can be practiced
Bag-Valve-Mask Ventilation
Placement of conventional airway adjuncts
Endotracheal intubation using conventional ETTs
Retrograde intubation
Sellick maneuver brings vocal cords into view
Perform tracheostomy
Tracheostomy care and suctioning
Breathing
Control rate and depth of respiration and observe chest rise
Automatic chest rise is synchronized with respiratory patterns
Select independent left and right upper lung sounds
Chest rise and lung sounds are synchronized with selectable breathing patterns

Accommodates assisted ventilation including BVM and mechanical support
Ventilations are measured and logged
Gastric distension with excessive BVM ventilation
Chest compressions generate palpable blood pressure wave form and ECG artifacts
Detection and logging of ventilations and compressions
Simulated spontaneous breathing
Variable respiratory rates and inspiratory/expiratory ratios
Bilateral chest rise and fall
Unilateral chest rise simulates pneumothoraces
Normal and abnormal breath sounds
Cardiac
ECGs are generated in real time with physiologic variations never repeating textbook patterns
Heart sounds may be auscultated and are synchronized with ECG
Circulation
Measure blood pressure by palpation or auscultation
Use real modified BP cuff to measure blood pressure
Korotkoff sounds audible between systolic and diastolic pressures
Pulse sites synchronized with BP and heart rate
Bilateral IV arms with fill/drain sites
Realistic flashback
SubQ and IM injection sites
Intraosseous access at tibia
Chest compressions are measured and logged
ECG monitoring using real devices
Defibrillate, cardiovert and pace using real devices
Multiple heart sounds, rates and intensities
ECG rhythms are generated in real time
Heart sounds synchronized with ECG
Dynamic rather than static 12 lead ECG display available with Automatic Mode
Pacing may be practiced anteriorly to avoid having to roll the patient during delivery
Bilateral carotid, radial, brachial and femoral pulses synchronized with ECG
Pulses vary with blood pressure, are continuous and synchronized with the ECG even during a paced rhythm
Neural Responses
Eyes are controlled automatically by physiologic model or directly by the Instructor
Eyes open and close
Select blink rate
Select pupillary response to light

Speech
Pre-recorded sounds and speech in child's voice
Optional wireless streaming audio
Articulation and Movement
Seizure/convulsions
Realistic rotation of the shoulder and hip joints
Legs bend at the knees
Supine or semi-recumbent positions
Other
Central cyanosis
Fill bladder and perform Foley catheterization
Interchangeable genitalia
Insert feeding tubes
Remains fully functional even while in transit
Bowel sounds
User Interface
Sensors track student actions
Changes in condition and care provided are time stamped and logged
View the actions of up to 6 care providers using a responsive menu or write narrative
Generate and share diagnostic lab results
File sharing through Vital Signs Monitor
Links with optional Pro+ recording and debriefing system integrating the event log with cameras and patient monitor
Supplied with wireless tablet PC
12 pre programmed scenarios which can be modified by the instructor even during the scenario
Create your own scenarios - add/edit

Moulage

NYSIM has the capability for a wide range of moulage to be applied to our mannequins. Use of moulage increases realism for the scenario and helps further emotionally engage the learner. In addition to the SimNewB congenital abnormalities listed in the Laerdal SimBaby and SimNewB (LINK) section above, we have the Moulage Kit by CAE Healthcare, which can be used to simulate traumatic injuries with any of our patient simulators from burns to fractures and lacerations.