

# Nursing Anne Simulator

User Guide





Nursing Anne Simulator is a realistic, interactive training simulator to educate healthcare professionals to initiate and maintain care for patients, within the fundamentals of nursing curricula.

It is tetherless, WiFi operated, with a flexible operating system depending on training needs. The simulator responds to clinical intervention, instructor control, and pre-programmed scenarios for effective practice.

Refer to the SimPad User Guide and LLEAP Help Files for more information on operation and connection.

Read the Important Product Information booklet before use.

Refer to the Laerdal Global Warranty for terms and conditions. For more information visit [www.laerdal.com](http://www.laerdal.com).

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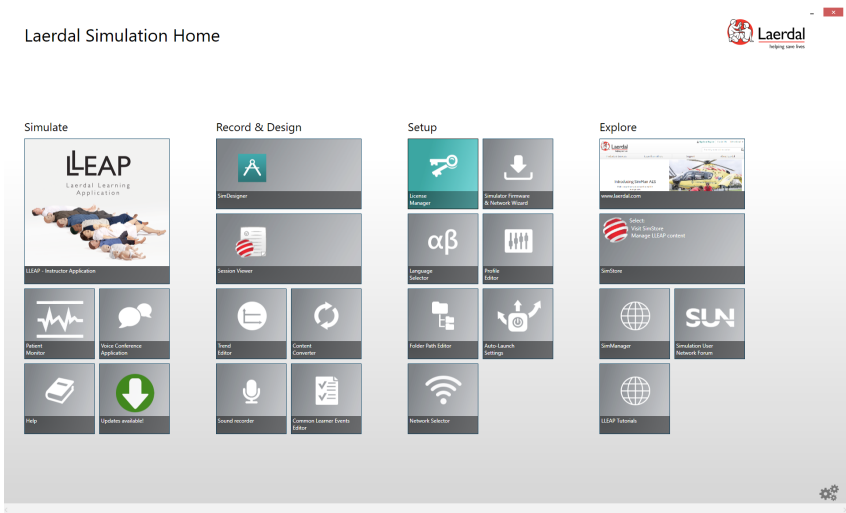


# Operating Software

Nursing Anne Simulator is operated and controlled by LLEAP - Laerdal Learning Application and SimPad.

## Laerdal Simulation Home

Laerdal Simulation Home is an application where LLEAP and other Laerdal programs related to patient simulation can be found and started. The help files are also opened from here. Laerdal Simulation Home is located in the Laerdal Medical folder under the Windows start menu (Windows 7) and can be launched using the desktop shortcut on Windows 8.



## LLEAP

LLEAP is the instructor's application from where the simulation session is run, controlled, and monitored. Installed on a laptop, PC or tablet, LLEAP can be operated in Automatic or Manual mode. Automatic mode is used for pre-programmed scenarios while Manual mode allows the instructor full manual control over the simulation session. Running simulations in Manual mode generally requires some medical expertise to create clinically sound simulations.

## SimPad

SimPad is a wireless customized tablet that controls relevant medical presentations for simulation training, including debriefing, in various user settings.

There are two ways to control simulations, Automatic Mode and Manual Mode allowing customized simulations to meet specific needs.



### Other Applications

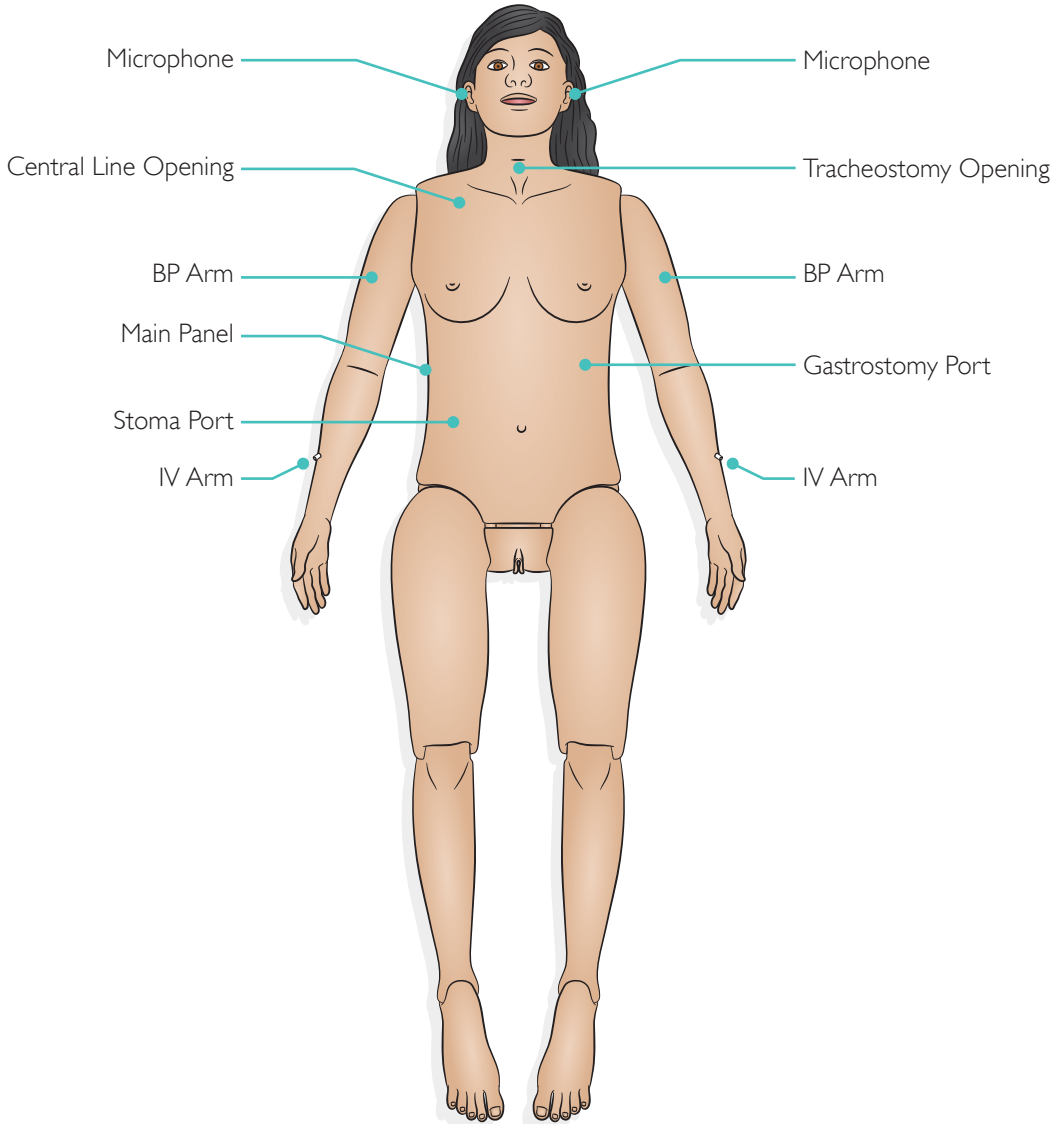
The following applications are available in conjunction with the simulation sessions:

- The Patient Monitor application emulates a typical hospital patient monitor. It is the learner's console and can be set up and controlled by the instructor, as well as by the learner, through on-screen touch menus.
- Voice Conference Application (VCA) transmits all vocal sounds used during simulation. It enables the instructor to communicate through the simulator during the session.
- Session Viewer, SimView Server and SimView Mobile are applications that record video and patient monitor screen captured during simulation, in addition to providing an interface to debrief your session. After a session is ended, log files generated in LLEAP and on SimPad are transferred and merged with the video files in Session Viewer, SimView Server and SimView Mobile for the debriefing.
- License Manager for handling program licenses
- Simulator Firmware & Network Wizard for updating the firmware of the simulators or troubleshooting network problems
- SimDesigner for configuring your own pre-programmed scenarios. It can also be used to analyze and print out a graphical representation of a scenario. SimDesigner must be installed to allow conversion of legacy instructor application files to LLEAP compatible file formats.
- Network Selector in Laerdal Simulation Home helps users connect LLEAP and Patient monitor to a wireless network and even host a network (Windows Hosted Network).
- Theme editor allows creation of themes for the SimPad system when operating using Manual Mode

For a full overview of all applications and their help files, start Laerdal Simulation Home.

# Overview - Nursing Anne Simulator

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### Airway and Breathing

- Spontaneous Breathing
- Head Tilt, Chin Lift
- Tracheostomy care and suctioning
- Oxygen delivery via BVM ventilation, Nasal Canula, Non-Rebreather Mask
- Oral and Nasal Intubation
- LMA Placement

### Assessment

- Blood Pressure (BP) Palpation and Auscultation
- Bilateral Carotid, Brachial, Radial, Femoral and Pedal Pulses
- Heart, Lung, Bowel and Vocal Sounds
- Palpable Anatomical Landmarks (Anterior, Posterior, Axilla)
- Blinking Eyes and Programable Eyelid Positioning
- Normal, Constricted and Dilated Pupils
- Normal, Dusky and Infected Stoma

### Nursing Interventions

- Nasogastric (NG) and Orogastic (OG) Tube insertion To Correct Measurement
- Ostomy Care
- Gastrostomy Port
- Central Line Care
- Complete Urinary Catheterization
- Bilateral Pre-Ported IV Arms
- Realistic Intramuscular (IM) Injection Sites

### Realism

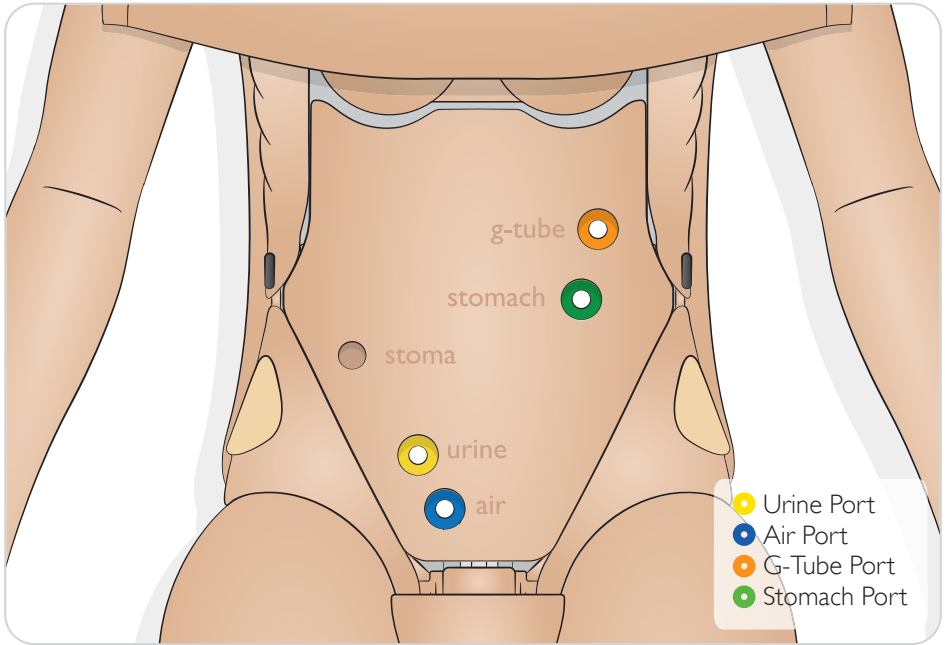
- Realistic Skin and Hair
- Sits Unassisted
- Fully Articulating Arms and Legs
- Practice of Transfer Techniques
- Anatomically Correct Female Genitalia

### Resuscitation

- CPR Capable

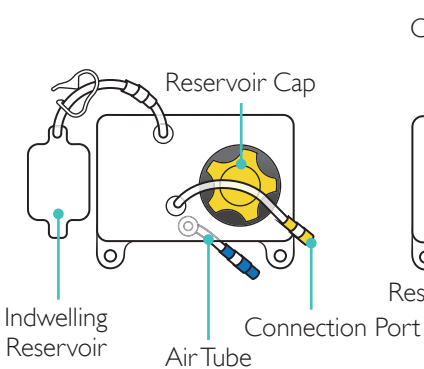
# Overview - Reservoirs

## Abdominal Plate Overview

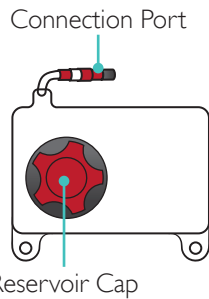


## Reservoirs

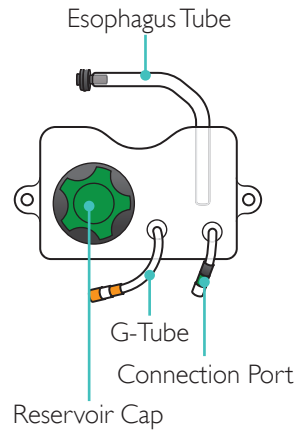
### Urine Reservoir

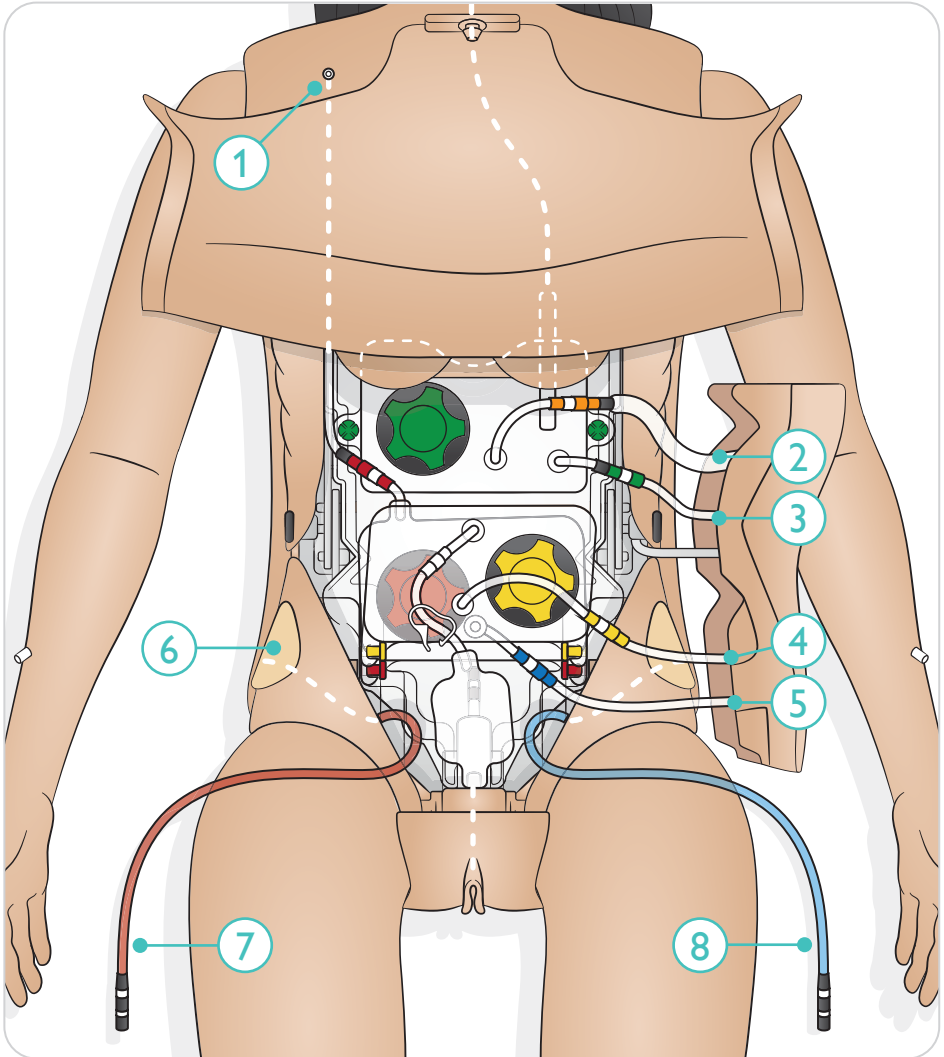


### Central Line Reservoir



### Stomach Reservoir



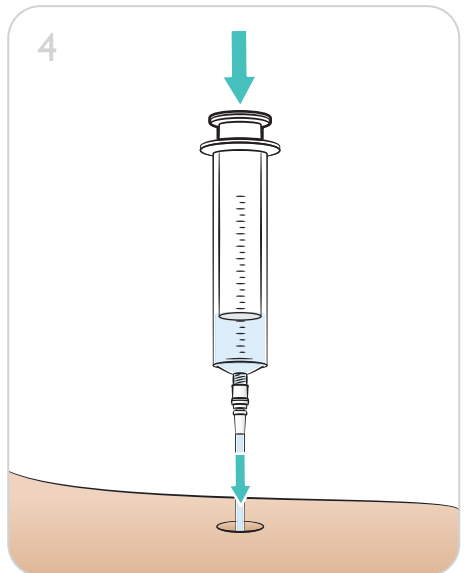
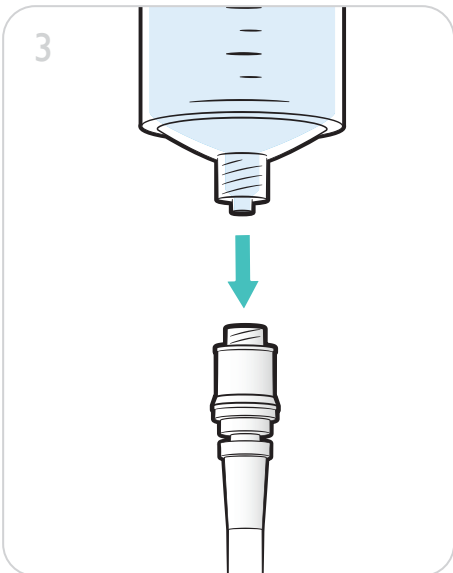
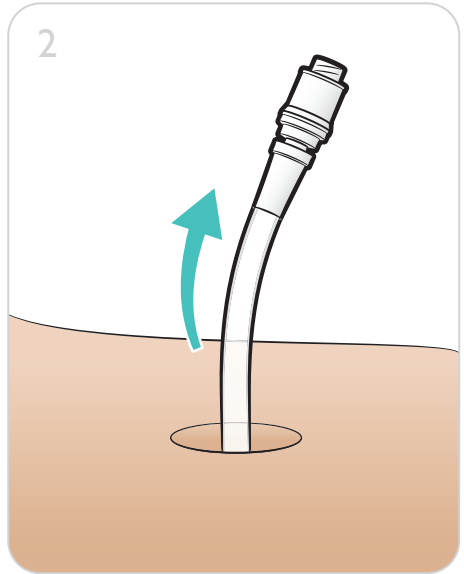
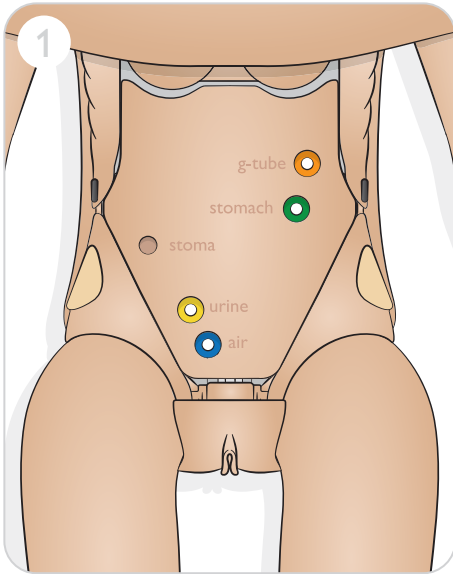


- |                             |                         |
|-----------------------------|-------------------------|
| 1. Central Line Port        | 5. Air Reservoir Tubing |
| 2. G-Tube                   | 6. Bypass Tubing Exit   |
| 3. Stomach Reservoir Tubing | 7. Bypass Tubing        |
| 4. Urine Reservoir Tubing   | 8. Bypass Tubing        |

# Preparing for Simulation - Reservoirs

To prepare for simulation, fill Urine (yellow), Central Line (red) and Stomach (green) Reservoirs with fluid as required.

## Filling Reservoir - Quick Fill



### Cautions

- Do not perform chest compressions with fluid in the stomach reservoir bag.
- Ensure the Indwelling Reservoir is connected to the genitalia before filling of bladders and catheterization is being performed.

### Notes

- Stomach and Central Line have 500 ml capacity.
- Urine Reservoir has 500 ml capacity for fluids and 300 ml for air.
- Do not introduce biological contents into the reservoir systems. Water with food colouring is recommended.

### Filling Reservoirs - Tap/Faucet Fill

1. Remove reservoir from mounting tabs.
2. Disconnect the luer lock connection from the quick fill port.
3. Remove cap and fill reservoir with water from the tap. Add desired colouring.
4. Replace cap.
5. Replace reservoir onto mounting tabs. Reconnect relevant luer lock connections.

### Pressurize Urine Reservoir

1. Locate the quick fill port for air.
2. Connect the luer lock Air Syringe to quick fill port and infuse up to 300 ml air to pressurize the system.
3. Once the system has enough air infused, the indwelling urinary bladder will fill with fluid.

### Notes

- Refill urine during catheterization training using the quick fill port. See 'Filling Reservoirs - Quick Fill' section.
- Air should not be replaced after initial fill for the session.

# Preparing for Simulation - Reservoirs

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## Central Line Reservoir

Nursing Anne Simulator features an opening for preplacement of a central line and a 500 ml reservoir for practice of infusion and dressing change.

1. Unzip both sides of torso skin to access abdominal plate.
2. Remove abdominal plate.
3. Spray catheter with manikin lubricant and insert central line through opening in skin below clavicle to simulate a previously inserted line.
4. Insert catheter into the white tube/valve opening a minimum of 50 mm (2 in).  
The valve is connected to the reservoir bag on inside of torso.
5. Replace skin.
6. Aspirate air out of the central line port until flash of fluid occurs.

## Large Volume Infusions - Bypass System

The bypass system allows high volume infusions to be given to the simulator, bypassing the internal reservoir system. Bypass tubes are located on each side of the simulator:

1. Unzip both sides of torso skin to access abdominal plate.
2. Remove the ventro-gluteal injection pad and locate the bypass tubing.
3. Attach the bypass tubing to the External Reservoir Bag (2000 ml).
4. Lift the abdominal plate.
5. Disconnect the luer lock connector of the desired reservoir (stomach, central line).
6. Connect the desired tubing directly to the bypass (red or blue) which is now attached to the overflow bag.
7. Replace abdominal plate and ventro-gluteal injection pad.
8. Replace skin.



### Note

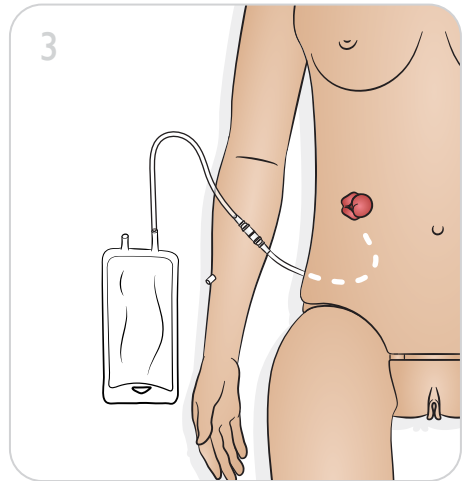
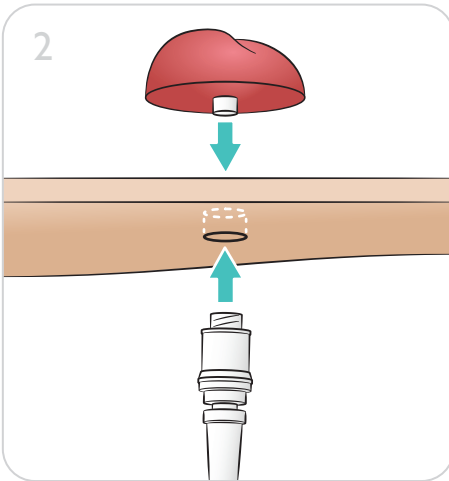
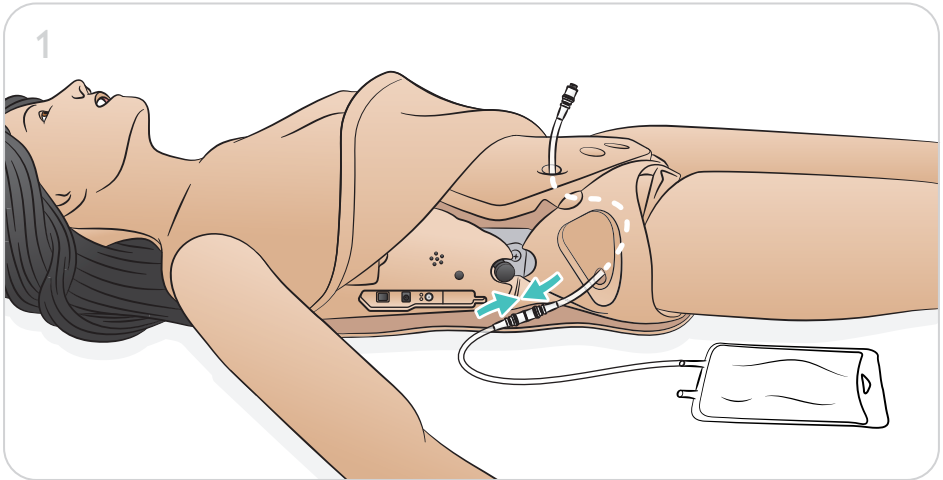
*The bypass system with the provided overflow bag will hold 2000 ml. Any standard urinary drainage bag can also be used with the bypass system.*



## Stoma Placement

Unzip torso skin on manikin's right side. Insert luer lock connection on back of selected stoma into skin opening on manikin's right abdomen.

For irrigation exercises:



### Note

Connect to Bypass System for large volume infusions. See Large Volume Infusions (Bypass system) section.

## Preparing for Simulation - IV Arm

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Nursing Anne Simulator's arms provide radial IV access through female luer fittings, and support training for IV drug or fluid administration.

### IV Drain Bag

Connect the IV outlet tube exiting back side of arm (black connector) to standard IV fluid collection bag (not included). This serves as a collection reservoir for the IV system.

## Preparing for Simulation - Blood Pressure (BP) Arm

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Nursing Anne Simulator features bilateral BP Arms for non-invasive measurement of blood pressure. The specially adjusted BP Cuff allows measurement of BP manually by auscultation of Korotkoff sounds or palpation of pulses.

### Attaching the BP Cuff

1. Attach the BP Cuff to the arm.
2. Connect the white connector exiting the cuff to the white connector exiting the back of the simulator upper arm.

### Calibration of BP

See the LLEAP/SimPad User Guide for calibration instructions.



#### Note

See *SimPad User Guide* or *LLEAP Help files* for complete blood pressure measurements and operating information.

# Preparing for Simulation - Enema and Suppository Administration

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## Enema

To prepare for enema administration, connect the enema connector to the bypass tubing and the external 2000 ml reservoir bag.

1. Unzip torso skin on either side.
2. Lift abdominal plate to access pelvis area. Locate overflow drain connection tube inside pelvis. Connect overflow drain connection tube to black tube connection inside manikin at the anal valve.
3. Remove ventral gluteal injection pad and locate overflow drain connection tube. Attach overflow drain bag to tubing. Replace skin.
4. Administer enema according to local protocol. After use, disconnect overflow drain bag from tubing. Push tubing back into recess and replace ventral gluteal pad.
5. Lift abdominal plate. Disconnect black connection from overflow drain tube. Replace skin.

## Suppository

### Rectal Suppositories

To prepare for administering Rectal Suppositories, remove tubing from the genitalia connection. Ensure chamber is connected.

### Vaginal Suppositories

To prepare for administering Vaginal Suppositories, ensure that the internal vaginal cap is in place.

## Preparing for Simulation - Trach Tube Insertion

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A concealed tracheostomy opening in the neck of the simulator allows for the care and maintenance of a placed Trach Tube. To prepare, remove Trach Plug.

1. Spread trach opening in neck skin to locate opening in trachea.
2. Remove trach plug.
3. Insert standard trach tube into trach opening.

## Preparing for Simulation - Eyes

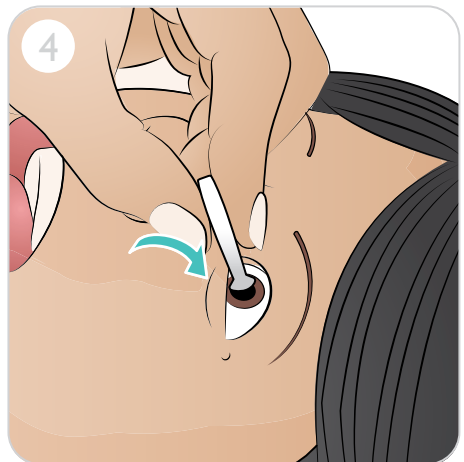
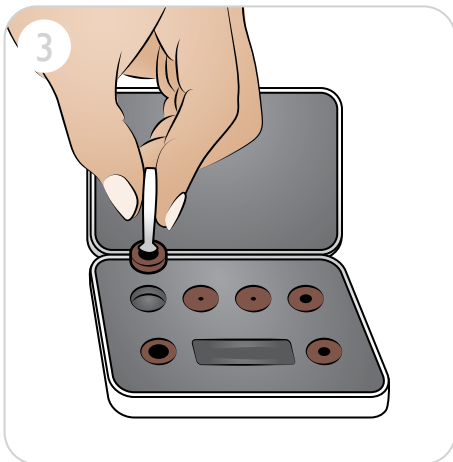
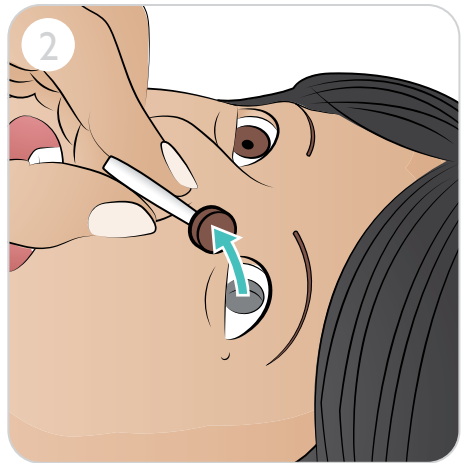
Nursing Anne Simulator's eyes blink automatically with synchronization between left and right. Eye lid position and blink settings are adjusted and controlled in the instructor software application. See SimPad or LLEAP User Guide for instructions.

### Caution

*Do not introduce fluid or objects into the eyes.*

### Pupil Replacement

Nursing Anne Simulator is supplied with a set of normal pupils mounted in the eyes. A separate case contains 3 sets of plastic pupil inserts (normal, constricted and dilated pupils) for use in simulating other conditions.

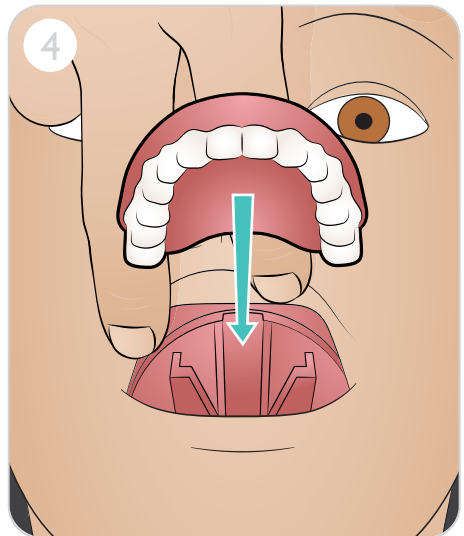
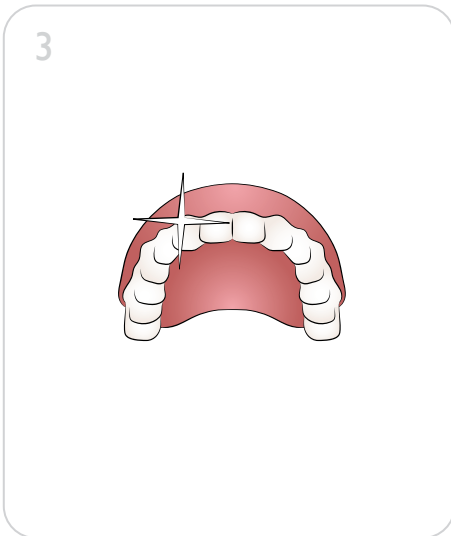
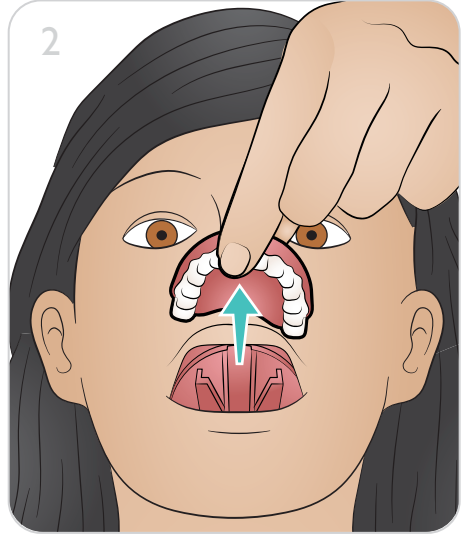
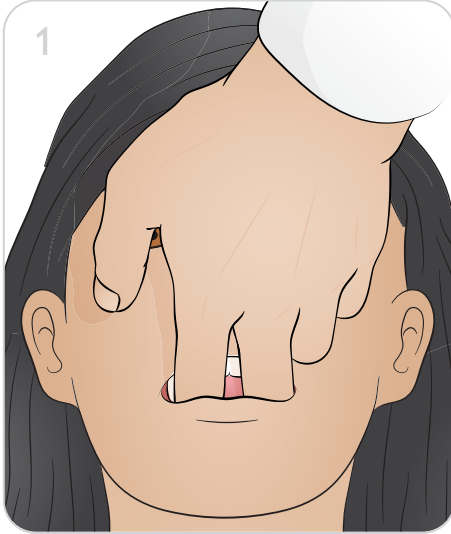


## Preparing for Simulation - Oral and Denture Care

To simulate denture care, the upper denture can be removed and cleaned.

### Changing the Upper Dentures

Nursing Anne Simulator comes with a set of upper teeth that may be removed for care and cleaning practice.



## Preparing for Simulation - Skin

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### Improving the Adhesion of Tapes and Dressings

For poor skin adhesion of dressings and tapes, Laerdal recommend the use of Mastisol (Eloquest Healthcare®) as an adhesion promoter (primer), applied prior to simulation activities undertaken on the Nursing Anne Simulator.

### To Prime the Skin Prior to Training

- Clean the area as normal and let dry
- Apply the Mastisol as per directions, to all areas to be covered by dressing and allow to dry for 30 seconds.



### To Prime the Skin During Training (applying dressings/tapes)

- Clean the area gently as per local protocol (eg, Alcohol Wipes)
- Apply dressing
- Gently remove dressing as to not remove too much Mastisol
- Clean area gently as per local protocol (Mastisol will last longer by using less aggressive solvent wipes)
- Apply dressing
- Repeat until you need to reapply adhesion promoter:

# Use - Patient Handling

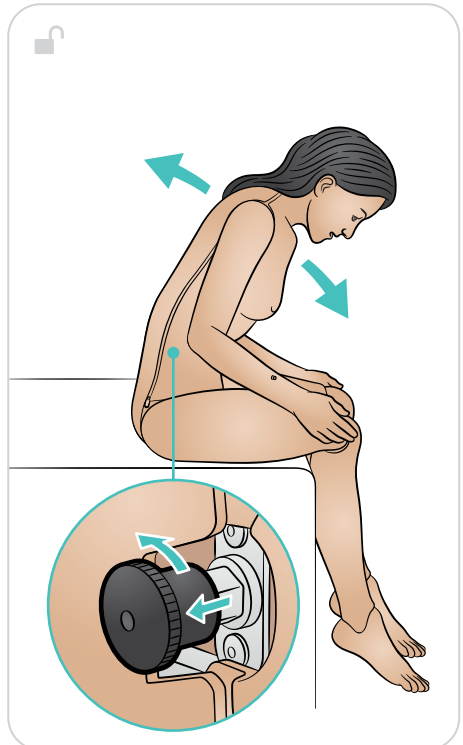
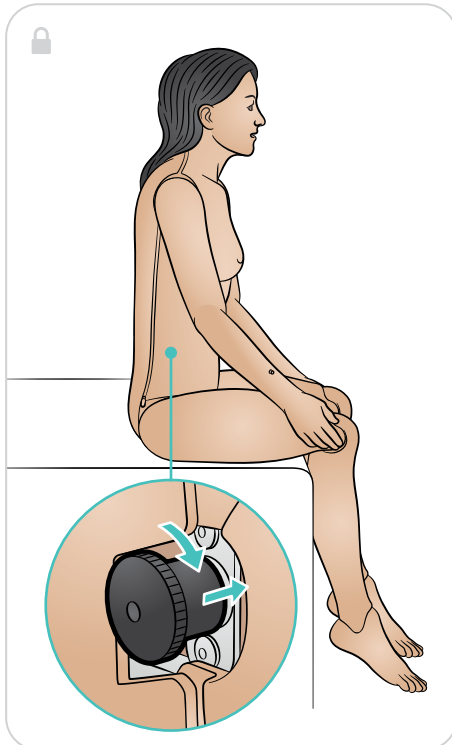
Nursing Anne Simulator has articulation for:

- Realistic patient handling procedures
- Protective positioning
- Patient transfer techniques
- Range of motion exercises
- Head can be flexed into chin to chest position and remain flexed until repositioned
- Sitting position and tripod breathing.

Nursing Anne Simulator has a waist lock mechanism to release waist and allow articulation to present labored (tripod) breathing. The simulator is shipped in the locked position. Ensure the waist is locked and secure for sitting up, movement and transport.

## ⚠ Cautions

- *The simulator is a fall risk. Do not leave simulator alone sitting unassisted or to remain in sitting position unbalanced.*
- *Arms should not be rotated in a circular motion.*



## NG Tube Insertion and Care

Nursing Anne Simulator features an esophagus and 500 ml stomach reservoir for practice of NG tube insertion and skills such as lavage and gavage.

An NG tube can be placed while the simulator is sitting upright with head positioned chin to chest. Anatomical landmarks allow caregiver to determine accurate measurement of tube length to be inserted using the nose to earlobe to xiphoid process.

The Nursing Anne Simulator allows for:

- Suctioning of simulated gastric contents through the NG tube
- Feeding through an NG feeding tube
- Bolus
- Intermittent bolus
- Continuous Feeding (recommended use of bypass system)
- Removal of an NG Tube.



### Notes

- *Recommended tube sizes: 16Fr Nasogastric Tube, and 12Fr Nasogastric feeding tube.*
- *The maximum capacity of the stomach reservoir is 500 ml. Take care when training in NG feeding not to overfill reservoir.*

## Trach Care and Suction

Simulate care and maintenance of a Trach Tube, including changing of the Trach Tube, cleaning of the inner cannula, site care and dressing procedures and decannulation.



### Cautions

- *Wet tracheal suction cannot be performed - simulate only. Only perform dry suctioning with clinical equipment.*
- *Do not introduce humidified air when setting up for tracheostomy humidification systems.*



### Notes

- *Tracheal plug should be replaced for ventilation procedures involving a BVM.*
- *Recommended tube size: Size 8 Shiley Trach Tube, cuffed.*

## Use - Wet Skills

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### Gastrostomy Tubes (Gastric/Jejunal)

Nursing Anne Simulator features an opening and reservoir bag for pre-insertion of G-and J-Tubes with capability for administering medication and feeding up to 500 ml. The concealed gastrostomy port is located in the upper left abdomen for pre-insertion of a PEG or G tube for feeding and medication administration.



#### Notes

- *Recommended tube size: 16F gastrostomy feeding tube.*
- *Connect to Bypass System for large volume infusions. See Large Volume Infusions (Bypass system) section.*

### Urinary Catheterization

Nursing Anne Simulator is fitted with realistic female genitalia. The pressurized urinary system allows for insertion of straight or indwelling catheters and intermittent closed catheter irrigation. Catheterization can be performed to the correct depth.

See Preparing for Simulation – Filling Reservoirs and Pressurize Urine Reservoir sections to prepare for catheterization.



#### Cautions

- *Only use glycerin or water-based lubricants with the urinary system. Silicone lubricant should not be used.*
- *Use of lubricants not approved by Laerdal may reduce functionality and cause damage to the urinary system.*



#### Notes

- *Common skin preparations such as chlorhexidine and povidone iodine-based products may be used safely without staining the genitalia. See Cleaning section for recommendations on cleaning.*
- *Recommended catheter size: 14Fr Urinary catheter.*

### Central Line

Nursing Anne Simulator features a pre-ported central line opening, and a 500 ml reservoir for fluid and drug administration. A central line can be placed prior to use, allowing the user to perform:

- Central Line site care
- Dressing change
- Fluid infusion
- Drug administration

## Enema Administration

Nursing Anne Simulator features realistic genitalia and an external enema reservoir bag for the practice of enema administration.

1. Administer enema according to local protocol. After use, disconnect overflow drain bag from tubing. Push tubing back into recess and replace ventral gluteal pad.
2. Lift abdominal plate. Disconnect black connection from overflow drain tube. Replace skin.

## Rectal Suppository Insertion

Nursing Anne Simulator will allow the insertion of real or simulated rectal suppositories.



### Note

*Only 1 suppositories should be used at any time. To insert additional suppositories, remove existing ones from the chamber.*

## Stomas/Ostomy Care

A concealed opening in the right abdominal area allows Practice of Assessment and care of normal, infected and non-perfusing stomas. Including changing and emptying ostomy appliances and irrigation. Irrigate stoma as per local protocol.

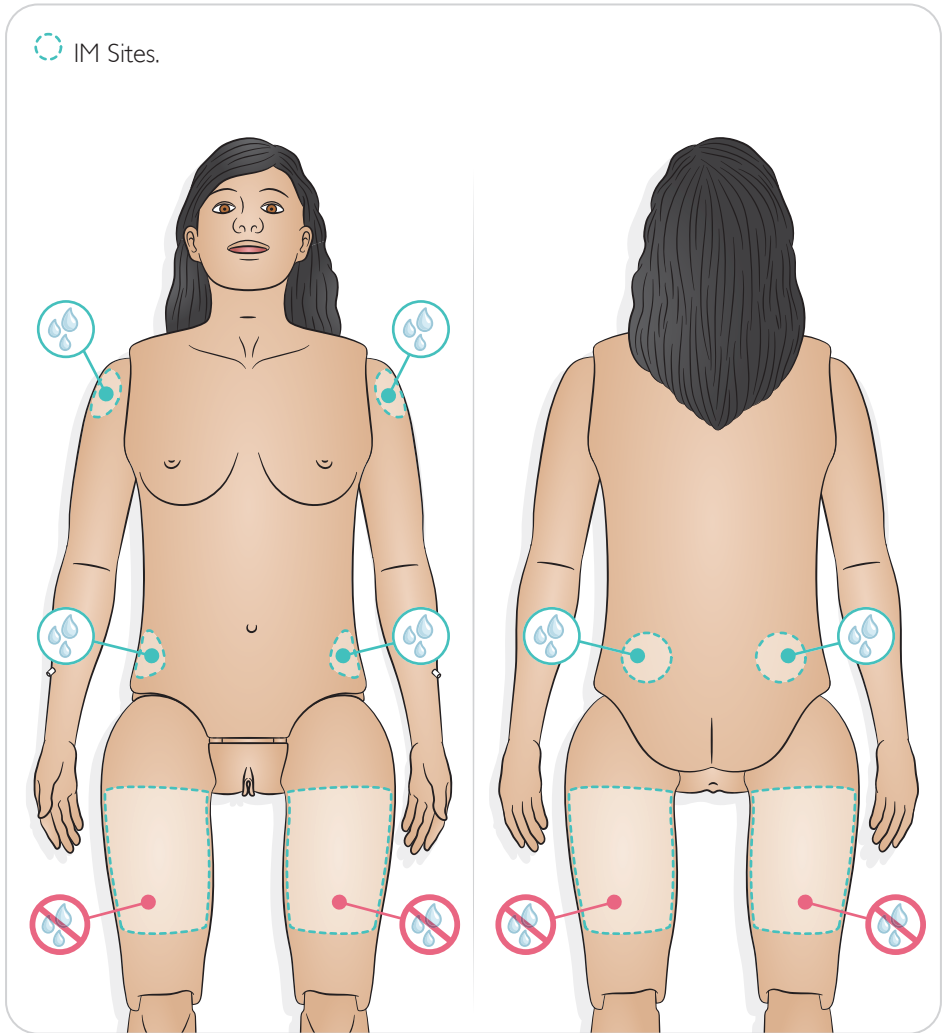


### Note

*Protective skin preparations and stoma adhesives are safe for use on simulator skin.*

# Use - Intramuscular (IM) Injections

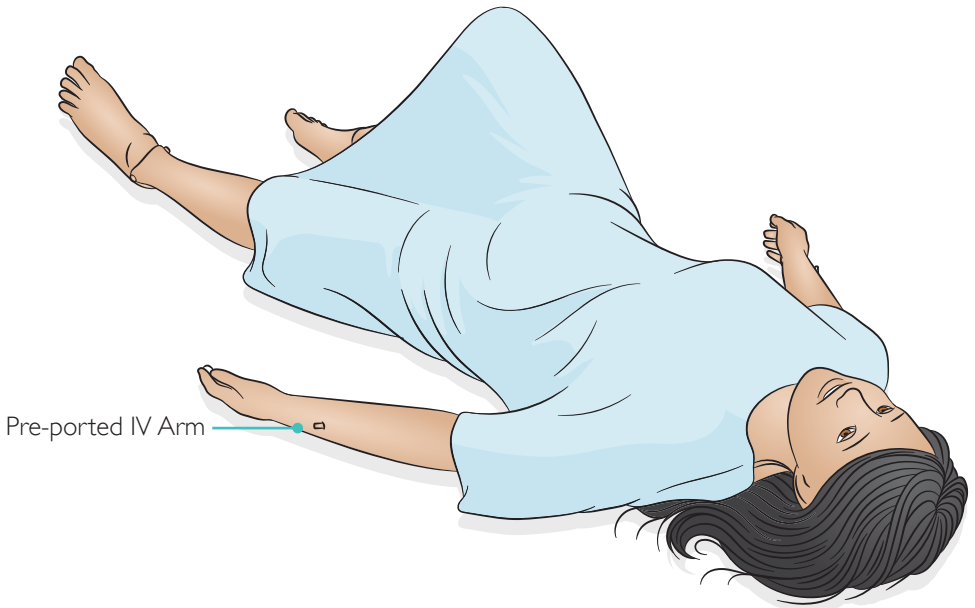
Simulated medications can be administered via intramuscular injections in several sites. Clean IM foam pads after each use. See 'Cleaning' section.



## Notes

- Do not inject fluids into thighs.
- Recommended: use 21G or smaller sharp needles.
- Only inject distilled water.
- Does not support subcutaneous injections.

Connect syringe or IV tubing (for medical administration and/or infusion) with luer locks to the pre-ported IV in the arm.



# Use - Airway Management and Resuscitation

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## Airway

Nursing Anne Simulator accepts a range of airway devices and airway techniques, and is CPR capable.

The following can be practiced:

- Head tilt/Chin lift
- Jaw thrust
- Cricoid pressure and manipulation (Sellick's Maneuver)
- Oral and nasal intubation

Oxygen delivery can be achieved using the following methods:

- Nasal cannula (retain O<sub>2</sub> tubing behind ear)
- Simple, Partial Re-breather; Non-Re-breather; and Venturi Masks
- Bag-Valve-Mask with visible chest rise
- Tracheostomy collar/ mask with visible chest rise
- T-Piece Resuscitator
- CPAP mask

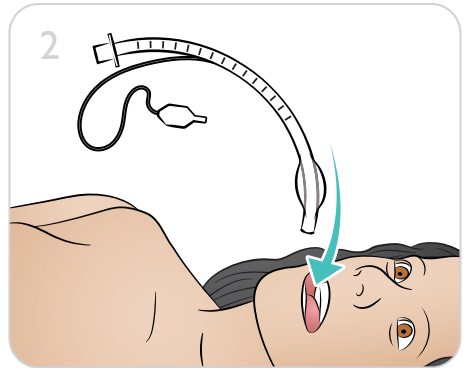
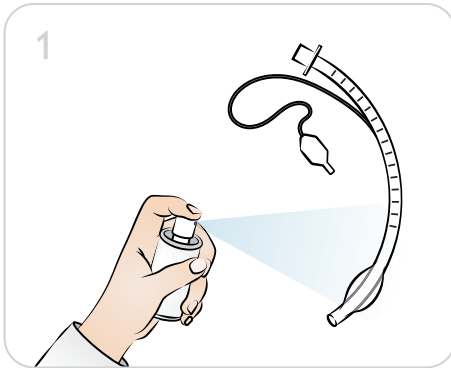
Intubation Type	Size
ET Tube	7.5 to 8.5
CombiTube	37Fr and 41Fr
LMA	4
King LT	4 and 5
Mask 4 and 5	4 and 5

## Cautions

- *The airways are not designed for cleaning or disinfection.*
- *Do not put biological or other materials in the simulator's airways.*
- *Only use Manikin Airway Lubricant. Use of silicone or any other lubricant not approved by Laerdal may cause damage to the airways.*
- *Do not introduce humidified air into the system during ventilation.*
- *Do not provide artificial respiration to the patient simulator using oxygen enriched air or flammable gases.*
- *Nursing Anne Simulator is not designed to test the performance, functionality or accuracy of a mechanical ventilator.*



## Use - Airway Management and Resuscitation



### Notes

- Do not spray lubricant directly into the airway.
- Use of smaller tube-type devices reduces wear of the Patient Simulator's airways.
- Incorrect positioning will pass air through esophagus, causing distention of the abdomen.

### Resuscitation

Nursing Anne Simulator is CPR capable and chest compressions (maximum 65 mm/2.55 in) can be performed on the simulator.

### ⚠ Cautions

- Do not perform chest compressions with fluid in the stomach reservoir bag.
- Never perform mouth-to-mouth or mouth to-nose ventilation on the patient simulator.
- Do not use automated chest compression machines on the patient simulator.

### Spontaneous Breathing

Nursing Anne Simulator has spontaneous breathing (visible chest rise and fall) with variable breathing rate. Spontaneous breathing is synchronized with the selected breathing rate (0-60 bpm) when set to active.

Once initiated, the simulator will begin to spontaneously breathe.

### ⚠ Caution

To avoid damaging the spontaneous breathing bladder, do not perform chest compressions while spontaneous breathing function is activated.

### 🗨 Note

See SimPad User Guide or LLEAP Help Files for complete breathing functionality.

## Use - Cardiac Related Skills

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Nursing Anne Simulator, when used with SimPad, SimPad Patient Monitor or LLEAP, features an extensive library of ECG variations. See SimPad PLUS User Guide or LLEAP Help Files for operating instructions.

### Defibrillation – Nursing Anne Simulator and ShockLink

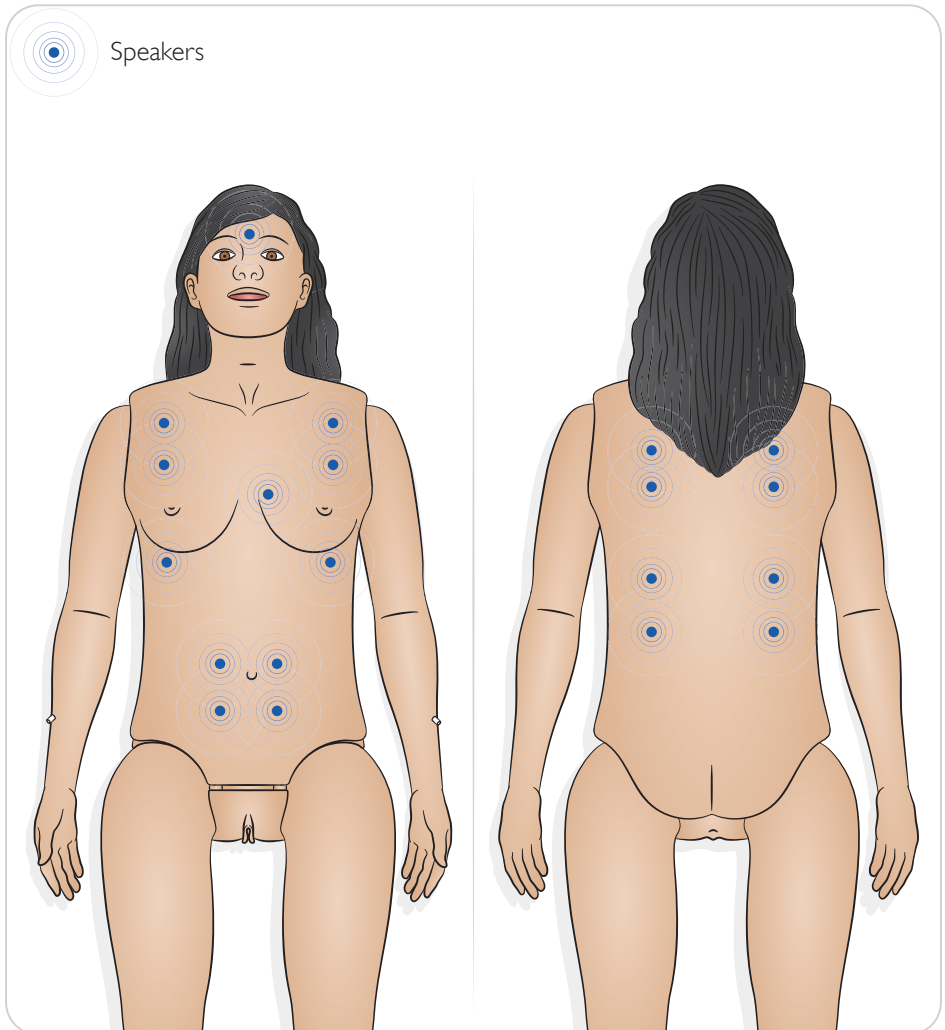
Use ShockLink to perform defibrillation and monitoring of basic cardiac rhythms. Refer to ShockLink User Guide for more information.

## Heart, Lung, Bowel and Vocal Sounds

Nursing Anne Simulator has heart, breath, bowel and vocal sounds which are determined by the scenario used and controlled by the instructor.

 Note

See *SimPad User Guide* or *LLEAP Help* files for complete heart, breath and bowel sound auscultation, speech functionality and operating information.



## Use - Pulses

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Nursing Anne Simulator has palpable pulses in various locations. Pulses are synchronized with the ECG and adjustable with three different strengths: weak, normal and strong.

### Caution

*Pulse sites should not be cannulated.*

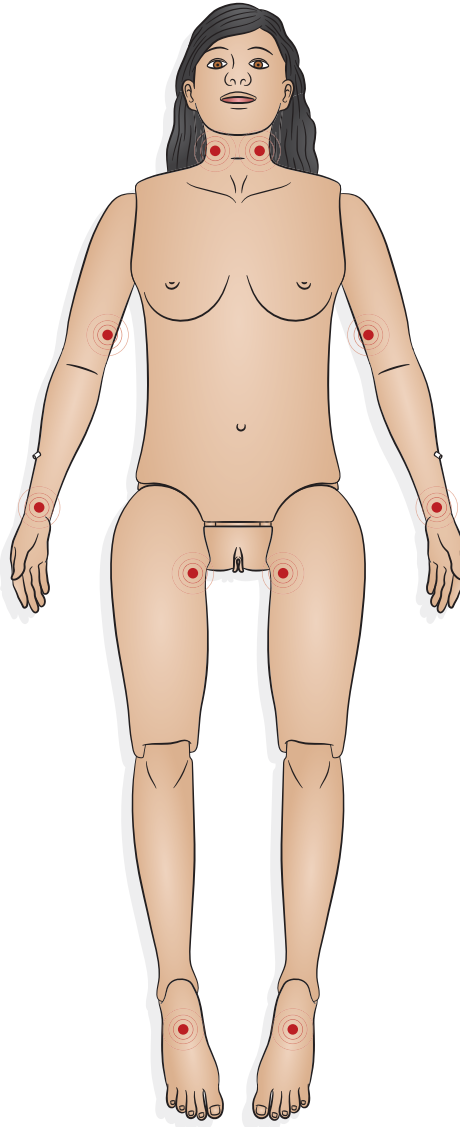
### Notes

- See *SimPad User Guide* or *LLEAP Help* files for operating information.
- Use of excessive force when palpating pulses will result in no pulse felt.
- Bilateral carotid pulses have the same pulse on the left and on the right side.
- Brachial and Radial pulses have the same pulse on the left and on the right arm.
- Bilateral femoral pulses will have the same pulse on the left and on the right side.
- Bilateral pedal pulses have the same pulse on the left and on the right side.
- Pulses are inactive when not palpated and turn off after two seconds of no palpation.
- Brachial pulse is disabled and turned off when the pressure in the cuff is larger than 20 mmHg.
- Radial pulse is turned off when the pressure in the BP cuff is larger or equal to the set systolic BP.
- Pulses on PVCs (Premature Ventricular Complexes) have half the strength of a normal QRS and a normal QRS following a PVC will have 3/2 the strength of a normal QRS.

Pulse strength on the simulator will relate to the BP setting according to the following chart:

Syst. BP	Carotid	Femoral	Radial
$\geq 88$	Normal	Normal	Normal
$< 88$	Normal	Normal	Weak
$< 80$	Normal	Normal	Absent
$< 78$	Normal	Weak	Absent
$< 70$	Weak	Absent	Absent
$< 60$	Absent	Absent	Absent

Nursing Anne Simulator features automatic pulses in the carotid (bilateral), radial and brachial (bilateral), femoral (bilateral), and pedal (bilateral) areas.



See *SimPad PLUS User Guide* or *Help files* for complete functionality and operating information.

## Use - Ear

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### Ear Irrigation

Irrigation, cleaning and administration of eardrops can be practised in the ear canal.

## Use - Recommended Sizes of Clinical Equipment

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Device	Recommended Size
Urinary Catheter	Size 14Fr
Nasogastric Tube	Size 16Fr
Nasogastric Feeding Tube	Size 12Fr
Gastrostomy Tube	Size 16Fr
Central Line	Size 4Fr to 7Fr
IM Injection Needles	Size 21G or smaller
Tracheostomy Tube	Size 8 Shiley
Endotracheal Tube	Size 7.5 to 8.5
LMA	Size 4
CombiTube	Size 37Fr and 41Fr
King LT	Size 4 and 5
Mask	Size 4 and 5

## Cleaning - After Each Use

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Clean individual components following a training session where heavy usage occurs, or when liquids have been introduced into the system.

### Cautions

- *Unplug the device from communication lines, mains power outlet or any power source before cleaning.*
- *Do not use liquid cleaners or aerosol cleaners.*
- *Avoid using food-based products in reservoir bags or on simulator as this will promote mold growth and permanent stains.*

### Notes

- *Use a lint-free cloth lightly moistened with water for cleaning the exterior of the product.*
- *When not in use, cover patient simulator and remove pillow from under head.*

## General Care

- To maintain simulator skins, wash hands before use and place the simulator on a clean surface.
- Use gloves during simulation scenarios. Avoid using colored plastic gloves, as they may cause discoloration of the simulator skin.
- If a training session involves the use of fluids in the IV Arm or internal reservoirs, drain the fluid immediately after the training session.

## External Skin

Use a lint free cloth to remove dirt and dust.

Clean skin with mild soap and water. Do not submerge.

After air drying, add talcum powder to skin.

### Note

*Cover eye, nose and mouth openings whenever applying talcum powder to head skin.*



### Indwelling Reservoir

1. Unzip and remove chest skin.
2. Gently remove the abdominal plate.
3. Ensure that the white plastic clip on the Indwelling Reservoir Tube is clamped to prevent spillage.
4. Remove the pelvis manifold, take to sink, unclip white clip, and drain out fluid from Indwelling Reservoir .
5. Place pelvis manifold back in pelvis, reconnect tube, mount genitalia back on pelvis manifold.
6. Open white clip.

### Blood, Urine and Stomach Reservoirs

1. Unzip and remove chest skin.
2. Gently remove the abdominal plate.
3. Detach individual reservoir from hoses and torso liner; taking care to note corresponding color-coded tube connections. Tubes are self-sealing whenever disconnected, so no clamps are necessary to prevent leakage.
4. Remove the reservoir's lid, drain and rinse with tap water.
5. Air dry reservoir for 8 hours before replacing the cap and reinstalling.

## Cleaning - After Each Use

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### Genitalia

1. Remove genitalia from pelvis manifold. Detach from urine reservoir.
2. Clean with mild soap and water.
3. To reconnect genitalia, connect genitalia to valves on urine reservoir and anus and push back into place.

### After Enema Administration

1. Disconnect black connector from bypass tube.
2. Connect luer lock syringe to bypass tube, flush tube with 50% alcohol.
3. Flush alcohol from tubing with dry syringe.
4. Access any suppository debris by removing enema chamber from the genitalia and the bypass tube, rinse the chamber with tap water and reinstall

### After Suppository Administration

Vaginal canal collection tube should be emptied and cleaned after each use.

1. Remove plug on vaginal canal.
2. Rinse with water as necessary.
3. Air dry and replace plug.

### Stomas

Clean with mild soap and water.

### IM Injection Pads

Immediately after use, remove IM injection pads from the simulator. Squeeze to remove excess fluids. Air dry.

IM deltoid injection pads have a foam interior that must be removed for drying. Remove foam through the slit in the back of the pad. Squeeze to remove excess fluids. Immerse foam in weak solution of tap water and bleach, then squeeze to remove the bleach solution. Air dry and reinsert. Talcum powder may be used to ease reinsertion.



#### Note

*Leaving wet injection pads in manikin for extended periods of time will promote mold growth.*

### IV Arm

After IV injection is complete, use a luer lock 200cc syringe to remove any remaining fluid in the tubing/components from the IV arm before storage.

1. Connect IV bag to the drain tube on upper arm.
2. Flush arm tubing with tap water at injection port.
3. Remove and drain IV bag.
4. Push air through arm tubing using the syringe.

## Cleaning - Every Six-Months

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Inspect for worn internal parts and install the replacement consumables available for sale on [www.laerdal.com](http://www.laerdal.com). Inspect the internal chest cavity and replace any consumable parts as needed. Parts are available for sale on [www.laerdal.com](http://www.laerdal.com).

### Torso Liner

Remove blood and urine reservoirs, clean surface of torso liner with light solution of soap and water; apply the solution with damp paper towel. Torso liner can be lifted aside or removed for inspection of air filter and metal surface underneath. If the metal surface is corroded or stained, potential causes should be investigated. Contact your local Laerdal representative.

### Tubing

Tubes that connect fluid reservoirs, genitalia, and central line. Use Luer lock syringe to push through Isopropyl alcohol, then push out remaining alcohol with air in syringe. Remove the alcohol from fluid reservoirs, air dry, then replace and tighten reservoir screw cap.

### Wig Care and Upkeep

When brushing the wig, use combs and brushes that are specially designed for wigs. To ease brushing and removal of tangles, use a wig spray as lubricant.



#### Note

*Avoid using combs and brushes without rubber tips. These can damage and split the wig fibers and cause damage to the head skin. Avoid using hair care products such as hair spray. These may damage the fibers.*

### Washing the Wig

Avoid excessive washing. It shortens the lifespan of the wig.

1. Detangle hair using a wide tooth comb.
2. Soak wig for five minutes in cold water.
3. Apply synthetic wig shampoo directly to the hair using a wig brush. Be sure to brush in one direction. After washing, apply a cream-type detangling wig conditioner in the same manner as the wig shampoo.
4. Rinse with running water.
5. Blot excess water with a towel, then air dry on a stand or rack.



#### Notes

- *Only use synthetic wig shampoo.*
- *Do not wring out or twist the wig. This may damage the fibers.*
- *Do not use regular human hair shampoo.*
- *Do not blow dry or use any method of electrical drying.*

# Cleaning and Maintenance

Inspections Checklist			
Checkpoints	Daily/Weekly	Six Month	Annual Preventative Maintenance (Depending on usage, expect that these will need replacement)
Fluid reservoirs and connecting tubes	X	X	X
Deltoid IM Injection foam pads	X	X	X
Thigh IM injection foam pad	X	X	X
Gluteal IM injection foam pads	X	X	X
Ventrogluteal IM injection foam pads	X	X	X
Chest rise bladders		X	X
Lung bladder		X	X
Urine bladder	X	X	X
Lung compliance O rings	X	X	X
IV bags			X
Trach plug	X	X	X
Compression damper		X	
Compression spring		X	X
Chest airway tubing and connectors		X	X
Torso liner		X	
Teeth		X	X
Skins	X	X	X
Ostomy set	X	X	X
Air Filter underneath torso liner	X		X
Neck hardware		X	
Chest pressure (compression) plate hardware		X	
Pelvis/leg hardware		X	
Pupils	X	X	X
Duckbill Valves (Genitalia)	X	X	X

## Preventative Maintenance

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Preventative maintenance (PM) service can be purchased for this system. This service will allow you to maintain the product in optimal operating condition.

Contact your local Laerdal representative for more information.

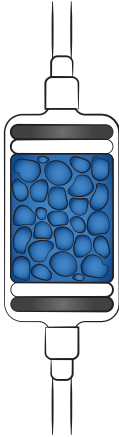
# Maintenance

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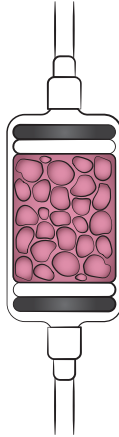
## Inspect Compressor Air Filter

Air Filter must have weekly inspections. Use the Air Filter color guide to determine if filter needs to be changed.

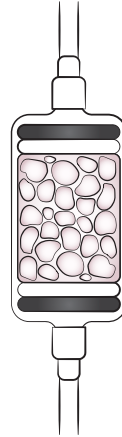
### Air Filter Color Guide



New



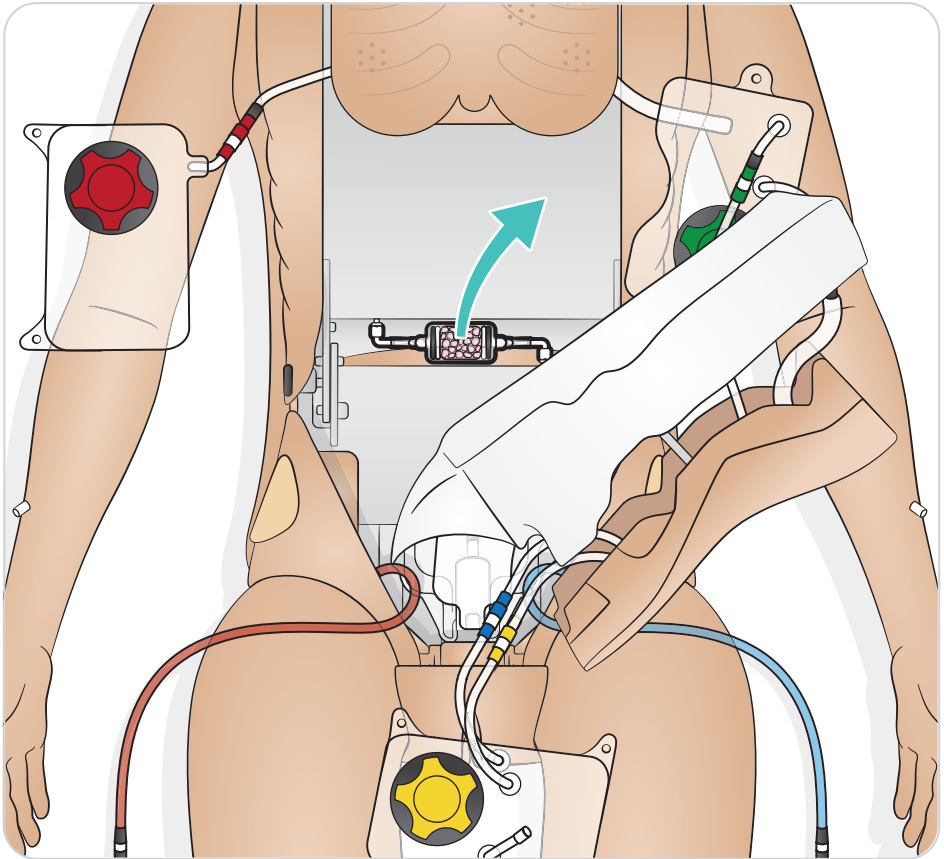
Ok



Change



## Change Compressor Air Filter



1. Remove torso skin.
2. Lift up abdominal plate, detach the short electronic cable underneath and move aside.
3. Remove Reservoirs from Torso Liner.
4. Lift Rib Plate and Pressure Plate.
5. Remove Chest Spring and compression damper.
6. Remove Torso Liner.
7. Remove filter.
8. Follow process in reverse to replace all parts.

# Maintenance

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## Replacing Spontaneous Breathing Bladders

1. Unzip chest skin to expose rib plate.
2. Gently lift away rib plate to expose the two spontaneous breathing bladders.
3. Remove and replace the two bladders one at a time so that one bladder can always be used as a visual reference.
4. Use hemostat or needle nose pliers to pull out feeder hose. Clamp or secure the feeder hose so that it does not fall back underneath the black pressure plate whenever the new bladder's nipple is inserted into the feeder hose.
5. Once the bladder nipple is firmly inserted into the feeder hose, unclamp the feeder hose and push the bladder down into place, using the other bladder as a reference for orientation.
6. When setting the rib plate back into place, make sure to adjust it so that it seats down squarely into place.

### Cautions

- *Do not store this product outside the storage conditions specified in the Important Product Information.*
- *Store simulator in a clean, dry area. Storage in a damp area will cause corrosion of electronic parts.*
- *Remove stomas prior to storage. Stomas should be stored in a plastic bag when not in use.*
- *Do not store the simulator with fluid in the IV Arm System.*
- *Do not store the simulator with fluid in any of the internal reservoir bags. Clean and dry reservoir bags prior to storage.*
- *Do not store the simulator with wet injection pads.*
- *Do not store the simulator with tape or other adhesive products attached to the skin.*
- *Patient simulator should be stored on its back with adult cervical collar in place.*
- *Do not stack patient simulators or store with heavy objects on top of simulator.*
- *Do not lift or pull patient simulator by limbs or head.*
- *The patient simulator's neck should be supported at all times during transport.*
- *The patient simulator is heavy. Do not try to lift it alone, unless this is part of a simulation where correct lifting techniques shall be demonstrated.*
- *Lifting patient simulator alone may lead to muscle strains.*

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20-12768 Rev B

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[www.laerdal.com](http://www.laerdal.com)



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helping save lives