



South Eastman Health/Santé Sud-Est Inc.

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|  | <b>No: AC-I007</b>  |
| <b>Approved By: Nursing Practice Team</b>  | <b>Source: Regional Client Care Manual</b><br><b>Category: Acute Care</b> |
| <b>New/Replaces</b><br><b>Date Approved: 10 December 2007</b><br><b>Reviewed:</b><br><b>Revised:</b> | <b>Subject: INTRAVENOUS<br/>BLOOD/FLUID WARMER<br/>"Level 1 HOTLINE"</b>  |

**I. POLICY:**

- A. The blood/fluid warmer is indicated for use in the presence of:
  - 1) Hypothermia
  - 2) When IV infusions are being given rapidly (i.e.-blood transfusions for trauma, hypovolemia.)
  - 3) For use in the Operating Room with extended surgical procedures.
- B. The HOTLINE Warmer delivers blood and IV fluids at normothermic temperatures under routine gravity flow rates, by surrounding the sterile IV line with a layer of warmed recirculating solution.
- C. **CONTRAINDICATED** use in warming platelets, cryo-precipitates or granulocyte suspensions.

**II. EQUIPMENT:**

- A. HOTLINE – Level 1 warmer
- B. IV or blood tubing set
- C. IV solution or blood
- D. HOTLINE Fluid Warming set (L-70)
- E. HOTLINE extension (optional) single port (PC-8) double port (YC-8). Please note these ports are needle piercing ports.
- F. Baxter Infusion Pump (optional)

**III. PROCEDURE:**

- A. **STEP 1 – Set up the HOTLINE Warmer and the Fluid warming set.**
  - 1) Check that the level of recirculating solution in the fluid reservoir is above the minimum level mark (refer to left side view diagram - a). (Failure to have adequate fluid will result in the “Add Solution” alarm and light activation when the power is initiated in #5.)
  - 2) Plug in the Warmer. (DO NOT TURN ON)

- 3) Remove the Reflux plug from the socket on the right side of the warmer.  
(See Right side view diagram -1 & 4)
- 4) Plug the Twin-Tube Connector on the Fluid Warming set (L-70) into the Reflux socket.
- 5) Turn ON the power switch.
  - The green operating light will illuminate on the Display panel if the warming set is properly installed. A red Disposables light and alarm indicates improper installation.
  - The recirculating solution temperature display will begin to increase to 41 degree C at max.
  - The recirculating solution will automatically prime the Fluid Warming set.
- 6) Remove the end cap of the Fluid Warming set and inspect the patient end of the set for leaks to confirm the integrity of the IV pathway.

**B. STEP 2 - Connect the IV/Blood tubing.**

- 1) Connect the IV/blood bag and IV tubing to Fluid Warming set.
- 2) Fully prime the IV tubing, the Fluid Warming set and the patient extension set (if used). ENSURE NO AIR IS LEFT IN TUBINGS.
- 3) Connect the distal end of the Fluid Warming set to the patients IV access site.

**C. STEP 3 – Initiating the Warm Fluids.**

- 1) Wait until the recirculating solution temperature display reaches 41 degree C, which indicates the warmer is ready for use.
- 2) Adjust the rate of the IV/blood flow using the clamp on the IV tubing set.
  - DO NOT kink the Fluid Warming set. Do not restrict the circulation of the solution through the tubing.

**D. STEP 4 – After Use.**

- 1) Turn power OFF.
- 2) Remove the Fluid Warming set and insert the Reflux plug into the socket.
- 3) Wipe down the external surfaces of Warmer with a mild detergent solution and a soft cloth.
- 4) Ensure the recirculating solution reservoir is above the minimum fill line. May top up solution to the max. fill line as needed.
- 5) A jug of the recirculating solution will be kept in the ER clean utility room.

**RECIRCULATING SOLUTION PREPARATION**

Mix 140 ml of 3% Hydrogen Peroxide with 1,260 ml of sterile water.

**IV. DOCUMENTATION**

- A. Time fluid warming initiated
- B. Monitor and document patient's temperature and Vital Signs continuously.
- C. Time fluid warming discontinued.

V. **NOTE WELL**

- A. DO NOT fill the recirculating solution reservoir with a Fluid Warming set in place. Failure to remove the warming set before the fill procedure may result in an air lock in the warmer.
- B. Do not puncture the Fluid Warming set with needles, as this will breach the IV path and compromise the integrity of the patient IV line.
- C. Activation of the Over Temperature Warming signal indicates that warming has stopped and immediate interventions is required to clear the condition or to remove the Warmer from service.
- D. DO NOT use the Warmer in high-energy fields such as XRAY, CT Scanning, portable and mobile RF communications equipment.
- E. Do not mount the Warmer more than 42" above the floor. Mounting above 42" may result in instability of the pole and tipping.
- F. Do not use with pressure devices generating over 300 mmhg. If using a pressure cuff you must note the pressure used. Safe to use with Baxter infusion pump.
- G. Authorized personnel (Maintenance, Bio-Med) must replace recirculating Fluid solution and disinfect the reservoir every 12 months.

VI. **DISINFECTING THE RESERVOIR (done by maintenance or Bio-med once a year).**

- A. Invert the drain tube (rear view diagram – 2) and place a container under the end of the tube. Remove the end cap and drain the recirculating solution into the container. When all the solution has drained replace the end cap and insert the drain tube back in the holder.
- B. Then remove the reflux plug from the socket if required, and remove the fill port plug and fill the reservoir with the pre-mixed recirculating solution.
- C. Replace the fill-port plug.
- D. Insert a Fluid Warming set (L-70) into the socket.
- E. Turn the Warmer ON and let the solution circulate for a 30 minute disinfection period.
- F. Turn the Warmer OFF.
- G. Once again invert the drain tube and remove the end cap and drain the recirculating solution. Once fluid drained recap the tube and place back in the tube holder and discard the Fluid Warming set and insert reflux plug.
- H. Refill the reservoir with 1.4 litres of recirculating solution and now Warmer is ready for use.
- I. This disinfection procedure will need to take place every year.

VII. **REFERENCES**

Level 1 HOTLINE – Blood and Fluid Warmer. Operator’s Manual  
REF HL-90 (2006) Smiths Medical.