## Purpose:

1. To control and monitor the blood flow through the extracorporeal circuit.
2. To control and monitor the dialysate flow through the dialysate flow path.
3. To maintain a pathogen free pathway.

## Policy:

1. Registered Nurses and Licensed Practical Nurses as per facility policy that have received instruction and have demonstrated competency to the renal educator or delegate may operate the Fresenius 5008.

2. Health Sciences Centre, Seven Oaks Hospital and Local Centres Unit Assistants, Nursing Assistants and Health Care Aides who have received instruction from the Renal Educator or delegate and who have demonstrated competency to the Renal Educator may perform part of this procedure as indicated with symbol $\Phi$.

3. St. Boniface Hospital Health Nursing Assistants who have received instruction from the Renal Educator or delegate and have demonstrated competency may perform part of this procedure as indicated with symbol $\Delta$.

4. For the purposes of cleaning and disinfecting of fluid paths inside the Fresenius 5008, the following tasks will be performed:
   - Rinse
     - Between every patient use on all machines.
   - Heat Disinfection/Citric Acid
     - At the end of the treatment day
     - On acute machines following the last treatment.
   - Degreasing/Cold Disinfection
     - Once per week
     - Following a blood leak (Refer to Procedure 30.20.03 Responding to Fresenius 5008 Blood Leak Alarms)
     - Following treatment of a patient with Hepatitis B

5. A 2-litre rinse is required for dialyzers when an assessment determines that patient sensitivity of the dialyser is an issue.
6. For infection prevention and control purposes, a primed extracorporeal circuit including dialyzer must be discarded once two hours has elapsed if unused after set up.

7. Following a Code Blue or Critical Clinical Incident, the delivery system along with concentrates intact shall be removed from service to be inspected by a technologist. To preserve patient information the machine must be left in the same mode as it was when incident occurred (i.e. do not put into a cleaning cycle). Remove the blood lines and inspect for defects, describe (take photo if necessary) and document.

**EQUIPMENT:**

- Fresenius blood lines
  - AV-Set ONLINE plus BVM 5008R
- Fresenius IV administration set
- Dialyzer per physician’s order
- Acid concentrate and bicarbonate concentrate/bi
  bag®/central bicarb supply (SDS) as per physician’s order
- 2 or 3 – 1 litre 0.9% NaCl. Refer to Policy Statement #6 above
- Prime/Rinse Bag
- Heparin Sodium 1000 units/ml
- 1 – 20 ml syringe with needle
- Forceps (prn)
- Chemical residue test supplies

**PEDIATRIC:** AV – SET ONLINE PLUS BVM PAEDS 5008 R (HAS A TEDDY BEAR ON THE PKG)

**PROCEDURE:**

**A. Preparation of the Dialysis Concentrates:**

1. Ensure the Fresenius 5008 is connected to:
   - treated water
   - drain
   - appropriate electrical source
   - If the power is interrupted during treatment the 5008 will change over to battery supplied power.

2. Ensure the valve to the treated water is Open as needed.

3. Turn on the machine by pressing the Power key located on the top left corner of the control panel.

4. Perform the disinfection procedure if needed per facility schedule.

5. If necessary, check for residual disinfectant according to the manufacturer’s instructions for use on the bottle and prompts on the screen.
   - Verify appropriate cleaning cycle was last performed. If bleach cycle performed, chemical residue must be checked.
   - The fluid from the drain or the outflow dialysate hose may be used to test for chemical residue.

6. Connect the bicarbonate line to bicarbonate concentrate.

   **To connect the bibag®:**
   - Open the bicarbonate flap. The bicarbonate suction tube (blue) remains in the rinse chamber.
   - If the T1 test is initiated prior to bicarbonate bath connection, the T1 test may fail.
   - Check the expiry date on bibag
   - Invert bag to check filter
PROCEDURE:

- Remove seal from the bibag®.
- Place the bibag® on the ports and press down to connect.
- Close the bicarbonate flap until it clicks into place.

OR

**To connect the bicarbonate container:**

- Open the bicarbonate flap.
- Insert the bicarbonate suction tube (blue) into the bicarbonate container.
- Close the bicarbonate flap until it clicks into place.

OR

**Connect to central bicarbonate system**

7. Verify that the concentrate matches the Medication Administration Record (MAR). Verify dialysate number on dialysate screen. Verify dialysate number on acid concentrate jug. Document.

8. Connect the acid line to the acid concentrate:
   - Open the concentrate flap.
   - Place the red concentrate suction tube into the acid container.
   - Close the concentrate flap until it clicks into place.

9. Put the Patient treatment card (if available) in slot located on upper right hand side of treatment screen.

10. Confirm that the T1 test has started. If it has not started, select START on the prompting screen:
    - The operating mode display (upper left screen) shows the progress of the T1 test.
    - Message: *T1 test completed* is displayed for a moment after successful completion of the T1 test.
    - Message: *Attach Dialyzer Couplings to Dialyzer will appear if T1 test has been successfully completed.*

**PAEDS: 5008 MACHINES DESIGNATED FOR PEDIATRICS ARE LABELED “FOR PEDIATRIC USE ONLY”**

B. **Preparation of the Extracorporeal Blood Circuit**
   (This can be performed during cleaning cycle or in standby mode.)

   - Compare parameters with patient's dialysis prescription. If changes are necessary they can be entered prior to initiation of hemodialysis.
   - This step may be performed at any time during the procedure.
   - If there are no blood lines inserted, the system automatically moves to the BLOOD SYSTEM screen.
   - The T1 test is now running in parallel with the preparation of the hemodialysis system.
   - The T1 indicator bar is displayed in the top left corner of the display screen during the T1 test.
   - If any portion of the T1 test has failed a message will appear prompting further action.
   - The machine will automatically be in paediatric mode, and needs to be taken out of paediatric mode by pushing the HD-Paeds button. It will ask you if you want standard mode for an adult treatment. Confirm that you want standard mode. This needs to be done prior to the T1 test being completed. If the treatment is for a paediatric treatment, continue. The HD-Paeds button will be highlighted green. Note: if machine not taken out of paediatric mode prior to T1 test being completed, you need to shut the power off and restart.
   - Use aseptic technique for all bloodline connections and all connections in the area where sterile solutions are to be used.
PROCEDURE:

1. **Hang 2 litres of 0.9% NaCl.**

2. **Hang prime/rinse bag.**

3. **Clamp blue clamp on prime bag.**

4. **Insert the dialyzer into the holder and attach dialysate port caps.**

5. **Arterial blood line**
   - Open the 2 front doors of the 5008 and follow the diagram (if displayed) on the 5008 blood system screen to place the arterial blood line:
     - Insert the red guide into the blood pump until a signal is heard. The arterial pressure measurement unit will now open automatically.
     - Insert the arterial pressure dome into the arterial pressure measurement unit.
     - Insert the arterial blood line into the line holder.
     - Insert the arterial blood line into the arterial occlusion clamp.
     - Insert the Blood Volume Measurement segment into the BVM Measuring head and close the door.
     - Place the arterial line in the Blood Temperature Monitoring (BTM) measuring head.
     - **Pediatric:** Do not insert the arterial line into the BTM.
       - Connect the arterial patient connection of the blood line to the red port of the prime bag.
       - Connect the arterial blood line to the lower port of the dialyzer.

6. **Venous blood line:**
   - Clamp the two venous medication ports/lines.
   - Follow the diagram (if displayed) on the 5008 blood system screen to correctly insert the venous lines:
     - Insert the venous bubble catcher/chamber into the level detector.
     - Insert the venous blood line into the venous monitoring device and venous occlusion clamp.
     - Insert the venous blood line into the line holder.
     - Insert venous line into venous BTM measuring head.
     - **Pediatric:** Do not insert venous line into the BTM.

KEY POINTS:

- If 2 litre rinse is required, hang 3 litres of 0.9% NaCl.

- Ensure the dialyzer matches the patient’s dialysis prescription.

- An audible ding indicates that the pump segment loaded correctly.
- Refer to Appendix IV: Manually Opening Arterial Measurement Unit if arterial pressure measurement unit does not open.
- Soft side in.

- Ensure BTM flap closed.

- There is no temperature control.

- The venous bubble catcher/chamber must directly rest against the locator.

- Ensure flap BTM flap closed.

- There is no temperature control.
PROCEDURE:

- Connect venous line patient end to the blue port of the prime bag.
- Attach the venous pressure monitor line to the venous pressure port.
- Connect the venous blood line to the upper port of the dialyzer.
- Close the doors.

7. Saline administration line:
   - Ensure “Y” line cap of the saline administration set is firmly in place and that the roller clamp is closed.
   - Attach the administration set to one litre 0.9% NaCl and to the saline “T” line.

8. Heparin syringe:
   - Connect the heparin syringe to the heparin line.
   - Press on the clamping brackets to move the grip handle to its lower position.
   - Place the heparin syringe between the barrel holders. The syringe wings must be positioned between the barrel holders and the bracket.
   - Press on the clamping brackets to move the grip handle to its starting position. The thumb rest of the syringe plunger now must be positioned between the clamps of the grip handle.
   - The heparin syringe is correctly secured if it is no longer possible to move the thumb rest of the syringe plunger without pressing on the clamping brackets.
   - Open the clamp of the heparin line if it is still closed.

C. Priming the Blood Circuit:

Select PREPARATION SCREEN  
Message : Priming / Rinsing – Start  
Check that the rinse volume has been set at 700ml  
Check that the blood flow rate is set at 150 ml/min  
1. Open the roller clamp the 0.9% NaCl line and gravity prime the arterial lines  
2. Clamp the red arterial clamp and unclamp the blue venous clamp on the prime bag  
3. Touch the Start button. Blood pump I/O indicator will now be green  
4. While lines are priming, gently roll the dialyzer to facilitate air removal.

KEY POINTS:

- Rinsing the dialyzer venous end up enhances clearance of air from the dialyzer.
- The pump segment will be automatically inserted and the arterial pressure measurement unit will close.

Heparin infusion preparation must be done in accordance with facility policy.

Ensure overfill is not greater than 1.5 ml of total required treatment dosage.

It is not necessary to manually prime the heparin line.

The rinse volume and the blood flow rate are automatically set to the value preselected in the Operator Setup.  
Paediatrics: lines prime at 100 ml/min and rinse volume is 700 ml.  
Arterial line primed when fluid in the prime bag and no large air bubbles in the arterial line.

May take approximately 10 seconds for the blood pump to start.

Tapping or hitting the dialyzer against a surface is not recommended as this can cause damage to the dialyzer membrane.
PROCEDURE:

5. The blood pump will stop automatically once 700 ml of 0.9% NaCl infused.

6. Message: Rinse volume reached. – RINSE Continue or CIRCULATION Start

7. Close the white clamp on the Prime bag.

8. Ensure that the red arterial and blue venous clamps on the prime bag are open.

9. Touch the Start button to launch Precirculation.

10. Increase the blood pump to 400 ml/min to circulate. Paediatric lines run at 230, 240 or 250 ml/min depending on the weight of the child. If the correct weight of the child is not entered, it may not run at the correct pump speed.

D. Priming the Dialysate Side:

1. Ensure the T1 test is done and documented.

2. Rotate dialyzer arterial end up to facilitate filling.

3. Open the Shunt/Interlock door. Disconnect the dialysate hoses from the machine and attach to the dialyzer.

4. Close the shunt/interlock door.

5. Allow at least 2 minutes for the dialysate to prime the dialyzer.

6. Rotate dialyzer venous end up to facilitate removal of air from extracorporeal circuit.

7. Circulate the blood side at a blood pump rate of 400ml/min. Dialysate flow will be at ECOflow (100ml/min)

8. Paediatric: circulate the blood side at a pump rate of 230 – 250 ml/min.

E. External Tests:

9. Check for a normal dialysate flow by observing moving bar across dialysate icon.

10. Open the Shunt/Interlock door and verify that the dialysate flow is stopped.

KEY POINTS:

- If more volume required to deaerate the lines/dialyzer, select Continue. Blood pump will not automatically stop.
- If 2 litre rinse is required, prime with 2nd litre of 0.9% NaCl
- Blood pump I/O indicator will now be green
- If not yet done, the patient specific parameters for dialysate, UF and the heparin pump now may be checked/set
- Keep dialysate flow at ECOflow
- Inflow (blue) dialysate hose attaches to the venous end of the dialyzer.
- Outflow (red) dialysate hose attaches to the arterial end of the dialyzer.
- This will ensure counter-current blood/dialysate flow.
- Air in the dialyzer may cause a blood leak alarm when HD is initiated.
- If the correct weight is not entered, it may not run at the prescribed circulating rate.
- Located on the left side top of the screen
- The moving bar across dialysate icon should stop
PROCEDURE:

11. Reset the venous chamber/bubble catcher limit:
   - Select BLOOD SYSTEM SCREEN
   - Select LEVEL SET (will take approximately 30 sec.)

12. Verify venous line in clamp.

13. Document the above four checks on the treatment record.

F. Setting Treatment Parameters:

1. Press the PREPARATION button.

2. Confirm and set dialyzer and UF time.

3. Press Dialysate Menu. Confirm and set the following values:
   - Concentrate dialysate number
   - Prescribed Na+
   - Prescribed Bicarbonate
   - Dialysate Flow will read 100ml/min. Once dialysis is initiated, confirm and set flow to patient specific value.
   - Dialysate Temperature
   - Press OK.

4. Confirm and Set the Na+ Profile:
   - Select Na profile screen.
   - Select the appropriate profile.
   - Set the Na+ start value using the rocker switch.
   - Press OK

5. Set Online Clearance Monitor (OCM) parameters:
   - Touch Options button; then the OCM button
   - Confirm/Set the following parameters:
     - Goal Kt/V
     - V (urea) (patient volume)
     - Ensure OCM button lit
   - Press OK

6. Set Heparin Parameters:
   - Touch Options button; then the Heparin button
   - Confirm/Set the following Parameters:
     - Syringe type
     - Heparin rate (ml/hr); touch OK
     - Stop time in minutes; touch OK
   - Refer to Appendix II: Administering a Heparin Bolus during Hemodialysis treatment using the Fresenius 5008 Heparin pump if a heparin bolus required after initiation of hemodialysis.

7. Set Blood Pressure Monitor (BPM) parameters:

KEY POINTS:

- Level of the drip tube in the chamber/bubble catcher should be 0.5-1.0cm below the fluid level.

- Na profile can only be selected once UF time is entered.

- Maximum starting Na+ is shown by default and can be adjusted lower.

- The OCM measurement starts approximately 10 to 15 minutes after the start of the treatment (optical detector senses blood).

- The following dialysis parameters are checked for stability before the OCM measurement is started.
  - Stable conductivity
  - No change of the blood flow by more than 10 ml/min.
  - Blood flow > 80 ml/min.
  - Dialysate flow > 270 ml/min.
  - Paediatrics: OCM must be turned on manually in order for it to run.

- The heparin rate cannot be set at less than 0.5 ml/hr. If the patient does not require heparin, do not attach a syringe to the line. Leave the heparin line clamped. Once dialysis is initiated a prompt to stop heparin will appear.

- Refer to Appendix II: Administering a Heparin Bolus during Hemodialysis treatment using the Fresenius 5008 Heparin pump if a heparin bolus required after initiation of hemodialysis.
PROCEDURE:

- Touch Option button then the BPM button
- Confirm/Set the following values:
  - Alarm limits
  - Interval (minutes apart)
- Press OK

8. Set BVM parameters:
- Touch Option button then the BVM button.
- Confirm/Set the Critical Relative Blood Volume (RBV) value.
- Press OK

9. Set BTM parameters:
- Touch Option button then the BTM button.
- Ensure that the recirculation test light is lit.

10. Set the UF parameters:
- Touch the UF Menu
- Confirm/Set the following values:
  - UF Time
  - UF Goal (once known) touch OK
  - Touch UF profile screen then select one of 4 profiles
  - Adjust starting UF rate with rocker switch PRN
- Press OK.

KEY POINTS:

- The UF Goal should not be set until the patient’s has been assessed and a target fluid removal has been determined.
- The UF profile cannot be set until UF goal has been entered.

G. Initiating Dialysis:

11. Once vascular access is established:
- Touch Preparation button.
- Touch the Blood pump I/O button.

12. To prime the dialyzer and blood lines with fresh saline:
- Spike new 1L bag of 0.9% NaCl and open roller clamp.
- Open the white clamp directly under the Rinse bag.
- Open the Red clamp and close the Blue clamp on the Rinse bag.
- Prime the arterial blood line by gravity for 10 seconds.
- Close the Red clamp and open the Blue clamp on the Rinse bag.
- Touch I/O button to start the blood pump.
- Infuse 500ml of 0.9% NaCl at 400 ml/min.
- **Paediatrics:** Infuse 500 ml of 0.9% NaCl at 230-250 ml/min.
- While saline is infusing make sure all connectors/connections are tight.
- Touch the I/O button to stop the blood pump.
- Set the blood pump speed to 100 ml/min.

- Do not squeeze the 0.9% NaCl bag as this may cause micro bubbles.
PROCEDURE:

- **KEY POINTS:**
  - **Before connecting the patient to the 5008 ensure:**
    - All connections and lines are secure and tightened.
    - Absence of air in the blood lines and the correct position of all fluid levels.
    - Verify all documentation related to preparing the 5008 is complete.
  
- **PROCEDURE:**
  - **KEY POINTS:**
  - **Before connecting the patient to the 5008 ensure:**
    - All connections and lines are secure and tightened.
    - Absence of air in the blood lines and the correct position of all fluid levels.
    - Verify all documentation related to preparing the 5008 is complete.

13. Connecting the patient:
- Connect the bloodlines to patient access as per policy.
- Unclamp arterial and venous access lines and blood lines.
- Touch the I/O button to start the blood pump at 100 ml/min working up to 200 ml/min while monitoring Arterial and Venous pressures and for needle infiltration.
- **Paediatrics:** start blood pump at 50 ml/min, working up to ordered rate while monitoring arterial and venous access.
- Once the optical detector senses blood the message reads “Blood detected – Treatment Start”
- Touch the START button
- **TREATMENT** screen will be displayed
- Turn dialyzer arterial (RED) end up.
- Increase Blood flow to Dialyzing rate, while monitoring for Arterial/Venous pressures
- Monitor for signs and symptoms of needle infiltration.

- Obtain vital signs and initial parameters.
- Document on treatment record (form #W-00411)
- Verify and document on treatment record:
  - UF Goal set
  - UF profile set
  - UF timer on
  - Dialysate flow on and at prescribed rate
  - Heparin line open and heparin running (if heparin ordered)

H. Discontinuing Dialysis:

1. On Hemodialysis Flow sheet (Form # W-00417). document final:
   - Recirculation %, Effective Qb,
   - Final Plasma Na., Effective dialysis time,
   - UF Volume, Heparin infused (plus prime)
   - Kt/V, Min. RBV

2. Ensure there is enough 0.9% NaCl for reinfusion:
   - **If the patient has completed dialysis**
PROCEDURE:

3. 5008 will display Connect 0.9% NaCl Solution-start reinfusion. To reinfuse:
   - Ensure sure 0.9% NaCl administration set and T line are clamped.
   - Clamp and disconnect the Arterial blood line from the access.
   - Attach the 0.9% NaCl syringe to the “arterial” access and flush.
   - Connect the Arterial blood line to the “Y” port on the 0.9% NaCl administration set.
   - Open clamps on administration set and Arterial blood line.

4. Touch the OK button:
   - Blood pump will start at 200 ml/min.
   - Blood pump will stop when 0.9% NaCl is sensed.
   - Paediatrics: Blood pump will drop to 50 ml/min. Increase pump speed to prior blood flow rate up to 200ml/min. Blood pump will stop once 150ml has infused. If more volume is needed to clear the line, press continue.
   - Message reads: “Blood reinfused”
   - Select reinfuse continue to infuse more saline if necessary to clear blood from lines or if patient requires additional fluid volume If no further saline infusion required go to step 5.
   - Once 300 ml saline infused blood pump will stop.
   - Message reads: Reinfusion volume achieved. If no further saline required go to step 5.
   - Select reinfuse continue to infuse more saline PRN. Once required saline is infused stop blood pump using the I/O button on the reinfusion screen.

5. Disconnect patient:
   - Clamp venous access and blood line. Disconnect blood line from access.
   - Attach Venous blood line to Venous medication port.

   - Maintain sterility of venous access port if using CVC.
   - To minimize risk of exposure to body fluids.

I. Discarding the Extracorporeal Circuit:
PROCEDURE:

1. Remove the Venous pressure monitor line from the port.

2. Touch the **Remove** bloodlines button (if not on screen press **Blood System**):
   - **Message reads** “leave outer doors closed whilst waiting”.
   - Close doors and wait. Blood lines will automatically be disengaged from clamps and pump mechanisms.

3. There will be several tabs opening on the screen, with only one tab visible at a time. You may scroll between tabs as needed:
   - **TAB:** **Message reads** “Remove blood lines completely”
     - Open outer doors.
     - Remove and discard all lines. Close outer doors.
   - **TAB:** **Message reads:** Replace the **concentrate wand(s)** into holder:
     - Remove wands from containers and place into appropriate holder.
   - **If using Bibag:** **TAB:** **Message reads:** Bibag® empty can now be removed
     - Remove Bibag®, discard, close door OR
     - The Bibag® should **drain** automatically. If it does not:
       - Select the Dialysate button
       - Select **empty Bibag®**. (on the top of the screen)
       - Press **OK**
       - Discard once empty and close the door.
   - **Central Bicarb Disconnect bicarb line from central bicarb system.**
   - **TAB:** **Save Patient Information to Patient card (prn):**
     - **Message reads** “Saving data to card. Leave card inserted”
     - **Message reads** “Save modified treatment parameters onto the card?”
     - **Message reads** “Saving data to card Leave card inserted”.
     - Remove card when message disappears and place in patient chart.
   - **TAB:** **Insert inlet dialyzer coupling into the shunt interlock door to empty:**
     - Turn Dialyzer blue end up, and place blue dialysate hose on the shunt and close door.
     - **Message reads:** “The dialyzer is

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KEY POINTS:

- Ensure patient’s venous access is disconnected from the bloodline.
PROCEDURE:

being emptied”
- Message reads: “Dialyzer is now empty”
- Once the dialyzer is drained, place the red dialysate hose on the shunt and close door.

4. Perform appropriate cleaning procedure:
   - Select Cleaning on the main screen
   - Choose appropriate cleaning cycle:
     - Rinse
     - Heat disinfect
     - Cold Disinfect/Degreasing

5. Wipe the exterior of the 5008 with approved disinfectant.

KEY POINTS:

- Follow unit procedure and protocol for cleaning cycles.
- Following a blood leak alarm, the machine will require a mandatory heat disinfection cycle when dialysis treatment is completed.
- Pay close attention to cleaning control panels on the dialysis machines and other surfaces that are frequently touched and potentially contaminated with patient’s blood. Lift Shunt Interlock door and clean all surfaces.

DOCUMENTATION:

- Hemodialysis Treatment Record
- Hemodialysis Flow Sheet
- Patient Health Record

REFERENCES:


Fresenius Medical Care (2010) 5008 Hemodialysis System Operating Instructions (Ed. 9/10:10) Richmond Hill, ON: Author

Appendix I:
Changing the Dialysate Concentrate During Treatment

A. Changing Dialysate Concentrate during treatment if Na+ profile not being used:

1. On the Dialysate Menu screen, press the Concentrate button.

2. Select the appropriate concentrate from the dropdown list.

3. Press OK.

4. Replace with the new concentrate container

5. Document new concentrate in MAR. Refer to Chronic Hemodialysis Physician's Orders for further follow-up.

B. Changing Dialysate Concentrate during treatment if Na+ profile being used:

1. From the treatment screen note the current dialysate Na+ (found under "Na profile mmol/L") and the UF rate (found under "UF profile ml/hr"). If there are less than 2 hours remaining in the treatment, once Na+ and/or UF profiles have been stopped, the machine will not allow a profile to be reprogrammed.

2. Press the UF timer I/O off. A prompt to STOP both profiles will appear (if both were programmed) or CONTINUE treatment. Select STOP both profiles.

3. On the Dialysate Menu screen:
   - Press the Concentrate button,
   - Select the appropriate concentrate from the dropdown list.

4. Press OK. Replace with the new concentrate container.

5. Reprogram the Na Profile. (The Start Na+ is now the dialysate Na+ from step 1).

6. Reprogram the UF Profile.

7. Press the UF Timer light on. A prompt will appear in 5 minutes if the UF timer light is not turned on.

8. Document new concentrate in MAR Refer to Chronic Hemodialysis Physician’s Orders for further follow-up.

REFERENCES:
Fresenius Medical Care (2010) *5008 Hemodialysis System Operating Instructions* (Ed. 9/10:10) Richmond Hill, ON: Author
Appendix II:  
Administering a Heparin Bolus during Hemodialysis treatment  
using the Fresenius 5008 Heparin pump

A. Administering a Heparin Bolus using the Fresenius 5008 Heparin pump

1. Press Options button.  
   - The volume programmed for heparin bolus cannot be less than 1.0 ml.  
   - If volume less than 1.0 ml administer manually through the venous medication administration port.  

2. Select Heparin sub-screen.  
   - Follow site policy in regards to administration and documentation of heparin.  

3. Touch the Bolus icon to change (if necessary) the bolus amount in ml.  

4. Select volume and press OK.  

5. Press the Bolus I/O button to start infusion:  
   - The bolus will be infused and the amount given for the bolus will be added to the cumulative volume.  

6. Once bolus is infused change bolus volume to the minimum volume (1.0 ml).  

REFERENCES:  
Fresenius Medical Care (2010) 5008 Hemodialysis System Operating Instructions (Ed. 9/10:10) Richmond Hill,  
ON: Author
Appendix III Emergency Reinfusion Procedure

A. Emergency Reinfusion Procedure:

1. Reduce the blood pump speed to 200 ml/min. 
   \textit{Paediatrics: reduce blood pump to 100 ml/min or if running at a slower speed, leave at the current rate.}
2. Open saline administration set and “T”-line.
3. Clamp or manually kink the arterial blood line on the patient side of the “T”-line.
4. With the blood pump continuing to run, allow sufficient saline to infuse until the venous blood line appears clear. More saline may be used if deemed necessary.
5. Stop the blood pump.
6. Clamp the venous blood line and venous access.
7. Clamp arterial bloodline and access.
8. Proceed with patient care as deemed necessary. 
   \textbullet{} Do not attempt to return blood in arterial bloodline as risk of air to patient too great. Discard blood in arterial bloodlines with blood tubing.

REFERENCES:

Fresenius Medical Care (2010) \textit{5008 Hemodialysis System Operating Instructions} (Ed. 9/10:10) Richmond Hill, ON: Author
Appendix IV Manually Opening Arterial Measurement Unit

A. Manually opening the arterial pressure measurement unit:
   1. Relieve the pressure in the blood lines.
   2. Attach a 10 mL syringe filled with air, to the upper left port in the filter chamber.
   3. Inject air into the port This will release the arterial pressure measurement unit and the arterial pressure dome can now be removed.

REFERENCES:

Fresenius Medical Care (2010) 5008 Hemodialysis System Operating Instructions (Ed. 9/10:10) Richmond Hill, ON: Author