



## MANITOBA RENAL PROGRAM

<b>SUBJECT</b> ▪ NxStage Initiation and Discontinuation of Treatment on a Nxstage Cyler	<b>SECTION</b> 50.20 Home Hemodialysis
	<b>CODE</b> 50.20.06
<b>AUTHORIZATION</b> ▪ Professional Advisory Committee, Manitoba Renal Program	<b>EFFECTIVE DATE</b> January 2018
	<b>REVISION DATE</b>

### PURPOSE:

1. To initiate and discontinue treatment on a NxStage Cyler.

### POLICY:

1. Registered Nurses in the Home Hemodialysis program who have received instruction and have demonstrated competency to the renal educator or delegate may instruct patient's on the Home Hemodialysis program on the procedure of establishing and discontinuing treatment on a Nxstage dialysis machine.

### EQUIPMENT:

- Setup and primed NxStage Cyler and PureFlow SL®
- Phone
- BP machine
- Medical tape
- Two 10mL sterile syringes
- Emergency supply kit and troubleshooting guide
- Emergency Supply Kit contains: 60 mL sterile syringe, 2 X 10 mL pre-filled normal saline syringes, 2 empty 10 mL syringes, 1 normal saline IV line, 1 litre of normal saline and 4 chlorhexidine swabs.
- Wetness detector (If needed)
- 5cm X 5cm sterile gauze (If wetness detector needed)

### PROCEDURE:

1. Prepare access for connection as per policy:  
30.20.01 Venipuncture of Arteriovenous Fistula/Graft, or  
30.20.02 Accessing and Locking Dialysis Central Venous Catheter (Anticoagulant/Thrombolytic/Antibiotic Locking), or  
30.20.03 Establishing and Maintaining Buttonhole Venipuncture Sites, or  
30.20.04 Use of Closed Needleless Access Device with Hemodialysis Central Venous Catheters (CVC).

### KEY POINT:

## **PROCEDURE:**

2. Perform hand hygiene. Disconnect arterial bloodline from priming spike.
3. Connect arterial bloodline to patient's arterial access point.
4. Attach empty sterile 10mL syringe to arterial line on priming spike.
5. Disconnect venous bloodline from priming spike.
6. Connect venous bloodline to patient's venous access point.
7. Attach empty sterile 10mL syringe to venous line on priming spike.
8. Verify the blood pump is set to 100-120 mL/min.
9. Open the clamps on vascular access.
10. Open bloodline clamps (large blue and red).
11. Press treatment (Green Kidney)
12. Instill anticoagulant:
  - a) Unclamp one white clamp on the normal saline line.
  - b) Remove cap from the medication port on the saline line and place it on a sterile 5cm X 5cm gauze.
  - c) Instill anticoagulant into medication port on the saline line.
  - d) Unclamp the white second clamp on the normal saline line.
  - e) Allow the anticoagulant to infuse into blood for 10 seconds.
  - f) Clamp the two white clamps on the normal saline line.
  - g) Place cap back onto the medication port.
13. If patient sleeps on dialysis or is expected that they will sleep on dialysis then the wetness detector should be used. If using the wetness detector:
  - a. Apply wetness detector to venous access.
  - b. Wrap with 5cm X 5cm gauze and secure with tape.
14. When blood reaches dialyzer increase blood flow rate to 250 mL/min and record venous pressure, arterial pressure, effluent pressure and blood pressure.

## **KEY POINT:**

- Make sure to keep 10mL syringe and arterial/venous priming spike connections sterile.
- Make sure to keep 10mL syringe and arterial/venous priming spike connections sterile.
- Perform final safety checks.
- Follow site specific safety checklist.
- The machine should default to a blood pump speed of 100 mL/min.
- There is a 5 second delay before the pump starts up.
- Note: This step may be omitted if anticoagulation administered previously.
- See 30.40.05 *Use of the Hemodialert device with hemodialysis*

## PROCEDURE:

15. After recording 250 mL/minute blood flow rate, increase blood pump speed.

## KEY POINT:

- It is extremely important to log treatment sheets accordingly and accurately.
- Nocturnal blood pump speed maximum 300 mL/minute
- Daytime blood pump speed maximum 400 mL/minute
- Venous pressure maximum 250, arterial pressure maximum -250 mmHg.
- These records will provide a baseline for vascular access assessment and will help staff identify access problems. Initiation of prompt prevention and preservation methods for vascular accesses is crucial to maintaining optimal vascular access functioning.

## Discontinuation

16. Treatment is ended when the volume targets are met. Machine will show:

**“000” in the yellow caution bar  
Ultrafiltration rates go to 0**

17. Press **“Stop”**.
18. Rinseback volume **“277”** appears in the dialysate rate display.
19. Prepare arterial access for disconnect as per policy:  
**30.20.01** *Venipuncture of Arteriovenous Fistula/Graft, or*  
**30.20.02** *Accessing and Locking Dialysis Central Venous Catheter*  
*(Anticoagulant/Thrombolytic/Antibiotic Locking), or*  
**30.20.03** *Establishing and Maintaining Buttonhole Venipuncture Sites, or*  
**30.20.04** *Use of Closed Needleless Access Device with Hemodialysis Central Venous Catheters (CVC).*
20. Perform hand hygiene. Clamp the small clamp on arterial access.
21. Clamp the arterial patient blood line (large red clamp).
22. Disconnect the arterial blood line from access.
23. If using AVF/AVG access then attach pre-filled 10 mL normal saline syringe to the vascular access line.
24. Connect the arterial blood line (large red clamp) to the priming spike (red clamp).
25. Unclamp the arterial blood line (large red clamp) and the priming spike (small red clamp).
26. Press the **“ADD FLUID”** (picture of blue water tap) button on the cyclor.

Note: If using CVC without TEGOs then attach pre-filled 10 mL Normal Saline syringe.

- The small red clamp is attached to the priming spike which is attached to the saline bag.
- Ensure there is enough fluid in saline bag.
- The machine will show **“277”** counting down to **“0”**.

## PROCEDURE:

27. Once the cyclor has counted down to “0” clamp venous lines (one large blue clamp and one small clamp).
28. Check blood pressures both sitting and standing. If blood pressures are within normal limits disconnect from the machine.
29. Perform hand hygiene. Prepare venous access for disconnect as per policy  
**30.20.01** *Venipuncture of Arteriovenous Fistula/Graft, or*  
**30.20.02** *Accessing and Locking Dialysis Central Venous Catheter (Anticoagulant/Thrombolytic/Antibiotic Locking), or*  
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30. Connect the venous bloodline to the used set-up by securing it to the priming spike.
31. Press “**VOLUME TOGGLE**” button to retrieve treatment parameters.
32. Turn off the switch on the back of the cyclor.
33. Place the PureFlow SL® into drain as per policy # **50.20.05** *Draining the SAK®.*
34. Obtain post treatment weight and record on treatment sheet.

## DOCUMENTATION:

- Treatment parameters on treatment record at end of treatment.
- Blood pressures during treatment as well Pre and Post.
- Venous pressure, effluent pressure and arterial pressure at pump speed 250 mL/min.

## REFERENCES:

Nxstage PureFlow SL User Guide. Software version 1.13, 1.14, and 1.15. NC5342 Rev. D 2015-09-09

## KEY POINT:

- To stop treatment early:
  1. Press “**STOP**” on cyclor.
  2. Press and hold “**STOP**” on cyclor
  3. Press “**STOP**” again on cyclor
  4. Rinseback volume “**277**” appears in the dialysate rate display.
- If Blood pressures are low give more saline by pressing the “**ADD FLUID**” button for an additional 277 mL. This can be administered a maximum of two times. If more than two administrations are required disconnect from the cyclor and seek medical attention.
- Ensure that the lines are secured into a closed system to prevent spillage and splashing of blood/body fluids.
- Treatment parameters include: Treatment time, Total Dialysate, Total Ultrafiltration, Blood Litres Processed.