MANITOBA RENAL PROGRAM

SUBJECT	**SECTION** 70.40 Protocols – Home Hemodialysis
▪ Care of the Patient on Home Hemodialysis (HHD) Protocol	**CODE** 70.40.01
AUTHORIZATION	**EFFECTIVE DATE** September 2007
▪ Professional Advisory Committee, Manitoba Renal Program	**REVISION DATE** September 201 April 2016

PURPOSE:

1. This protocol is applicable to Registered Nurses providing Home Hemodialysis training and follow up to patients who perform self administered Home Hemodialysis.

STATEMENT OF GUIDELINES:

1. **Patient Teaching:**
   Patient teaching is based upon the Standard of Practice for Home Hemodialysis Training.

2. **Initiation of Home Hemodialysis Dialysis Orders:**
   The physician will order the following hemodialysis orders:
   - Dry weight (kgs)
   - Frequency of dialysis (days/week)
   - Length of dialysis treatment (hours)/dialysate volume
   - Dialyzer/cartridge
   - Heparin prime and hourly dose (PRN)/dalteparin/tinzaperin
   - Dialysate solution/SAK
   - Sodium profiling
   - Fluid profiling
   - Dialysate additives if required for Nocturnal

3. Initial bloodwork and clinic bloodwork is done according to the Dialysis Panel and as outlined in Protocol 70.20.04 *Initial and Monthly Lab Tests for Chronic Hemodialysis Patients*.
   - Post dialysis bloodwork may be ordered for PUR calculation where Kt/V is unavailable or for assessment of Nocturnal Hemodialysis clearance.
   - Additional bloodwork is ordered for Nocturnal Hemodialysis as outlined in policy 50.10.02 for phosphate additives.
   - Pre and Post Bloodwork for NxStage to calculate weekly kt/V.

4. Patients are given a clinic appointment to return in 4 weeks with subsequent appointments approximately every 2 months and PRN.

5. HSC Home Hemodialysis Office is open Monday to Friday 0800 to 1615; phone number is 204-787-7671 or 204-787-7672 or FAX 204-787-7673.

   SOGH Home Hemo office is open Monday to Friday 0800 to 1615; phone number is 204-632-3634 or FAX 204-633-3655.

6. HHD patients are instructed to precede to the closest Emergency or Nursing Station for any acute medical issues they feel require urgent interventions and to contact the HHD office following acute management of the issue.

7. HHD patients are instructed to contact the HHD office for new non-urgent medical issues, treatment issues they are unable to resolve, or equipment failure.
   - If the office is closed, the patient is advised to leave a message regarding the issues. The HHD training nurse will contact the patient when the office is next open.

8. If the HHD patient is unable initiate dialysis due to an access issue, they are instructed to call the HHD office for a treatment plan.
   - If the office is closed and they feel they need a treatment they are instructed to report to Emergency/Nursing Station.

9. If the patient has a technical issue or equipment failure he/she is instructed to call the Dialysis Technologist during office hours or on call until midnight.
   - If the patient's (is) unable to dialyze and treatment schedule is disrupted due to equipment failure, the HHD nurse will organize a treatment in-centre. If the HHD office is closed, the patient is instructed to call the in-centre HD unit of their training hospital and ask for a dialysis spot.

10. HHD training nurses may use Appendix A: Telephone Guidelines for Care of the Patient on Home Hemodialysis for telephone advice. Questions asked of patients and advice provided to the patient will include but is not limited to the content itemized within the table.

11. The patient issues and advice given to the patient is documented in the patient health record and the physician is notified when appropriate.

REFERENCES:

Telephone Consultation: Standards of Practice Application (2015) retrieved from at www.crnm.mb.ca

Winnipeg Regional Health Authority — Caring for Health | Office régional de la santé de Winnipeg — À l'écoute de notre santé

kidneyhealth.ca — manitoba renal program

Appendix A:

Telephone Guidelines for Care of the Patient on Home Hemodialysis

Problem/Issue	Questions Asked of Patients	Advice to Patient
a) Chest Pain:	• Is the pain mild or severe? • Is the pain associated with any other symptoms? • Does the patient have any medication for chest pain? • Is the patient on dialysis?	• ***If this is new onset chest pain, instruct the patient to report to the nearest emergency/nursing station.*** • If the patient has nitro prescribed, instruct the patient to self-administer as previously instructed. Repeat every 5 minutes to a maximum of 3 doses if necessary. • ***If pain is severe or does not resolve after nitro administration (3 doses) then:*** Instruct the patient to call 911 (or local emergency services) and immediately go to the nearest emergency/nursing station. If the patient is on dialysis instruct patient or family member to call 911 (or local emergency services). Discontinue dialysis and give blood back. • Instruct patient to assess their stability for safety to dialyze. If any doubt, instruct patient to go to the nearest emergency/ nursing station to be assessed. • If the patient feels unwell instruct patient to go to the nearest emergency/nursing station to be assessed.

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Problem/Issue	Questions Asked of Patients	Advice to Patient
b) Shortness of Breath (SOB):	• Does the patient have chest pain? • Does SOB occur only on exertion? • Does SOB occur at rest? • Is the patient's weight higher than usual above his dry? • Does the patient have edema? • Are the patient's blood pressures elevated? Review trends. • What have volume loss% been at the end of treatment? • What is the Hct reading on the hemox?	• ***If SOB severe or is accompanied by chest pain, instruct patient to emergency/nursing station immediately.*** • Suspect fluid overload and ask patient to weigh himself/herself. If patient is well enough to dialyze, advise to do so and remove fluid. Reassess target weight. • If Hct decreasing, query decreased Hgb and inquire re any blood loss. • If Hct decreasing, query hidden fluid excess. • If patient is unable to dialyze and if symptoms persist instruct patient to proceed to the nearest emergency/nursing station.
c) Dizziness:	• Was the patient's pre dialysis BP low? • What is the patient's weight? • How has the patient been feeling? • How severe are the symptoms? • Is the patient on dialysis? - Did the patient "pass out"? - Is the patient's blood pressure (BP) low currently?	If patient is dialyzing, and BP is low: • Instruct patient to press MIN UF and infuse 100 mL of normal saline. Recheck BP.

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Problem/Issue	Questions Asked of Patients	Advice to Patient
	• Is the patient taking anti-hypertensives as prescribed?	• If BP still low, infuse normal saline in 100 mL increments to a maximum of 500 mL. Re-check BP after each 100 mL if possible. • If BP still low, press rinseback and discontinue dialysis. If patient unable to discontinue dialysis or if BP still low after discontinuing dialysis, instruct to call 911 (or local emergency services) for help. • IF BP improves, instruct the patient to press the UF ON button, decrease weight loss and reassess target and continue dialysis. • Discuss future fluid removal requirements. • If on antihypertensives, review medication regime and ask how the patient has been taking the antihypertensive. The dosage may need review with the nephrologist. **If the patient is not dialyzing and BP is low and the patient is significantly symptomatic:** • Instruct the patient to go to the nearest emergency /nursing station.
d) Patient ran out of medications:	• Is patient taking medications as prescribed?	• Review medication prescription with patient, to ensure that patient is taking as ordered. • Instruct patient to call own pharmacy for refill. • If no refill is available, instruct patient to ask his/her own pharmacy to contact Home Hemodialysis Office. • If patient needs medication urgently Hemodialysis Office will page MD to order prescription if pharmacist not available.

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Problem/Issue	**Questions Asked of Patients**	**Advice to Patient**
e) Fever and/or chills:	• Is the patient on dialysis? • What is the patient's temperature while having symptoms? • What is the patient's usual temperature? • Does the patient have any known sources of infection (e.g. wounds, urinary tract infection) or symptoms of a new infection? • What type of vascular access does the patient have? • Is the patient on antibiotics already?	• If the patient is on dialysis, ask the patient to check the dialysate temperature and follow the Troubleshooting Guide if the temperature is above or below the value set. Ask patient to also check temperatures of mixing valve and aqua boss. • Ask patient how he/she is feeling overall. If well, and if fever is mild, less than 1 degree above normal and less than 37.5, and the patient has acetaminophen ordered, instruct to take 1-2 tabs (325-650 mg). • Instruct the patient to go to emergency/nursing station if fever is/or becomes 1 degree above normal or greater than 37.5 or if feeling unwell. • If patient is not on dialysis have patient assess CVC access exit site, tunnel site etc. If the patient finds any signs or symptoms of infection, have patient proceed to the nearest emergency/nursing station. • If the patient has a central line for vascular access, and is on dialysis, instruct the patient to complete dialysis and go to the nearest emergency/nursing station to assess for septicemia. • If fistula access ask patient re signs and symptoms of infection. Have the patient assess for any swelling redness, drainage. If the patient finds any signs and symptoms of infection ensure the patient does not puncture the fistula. The patient should proceed to the nearest emergency/nursing station.

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Problem/Issue	Questions Asked of Patients	Advice to Patient
f) Unable to establish vascular access:	**<u>If the patient has a central venous catheter:</u>** • If the patient has a CVC, was he/she able to remove the instillation from last dialysis?	• If unable to remove instillation from last dialysis: ➢ Instruct the patient to change positions, cough and retry removing the instillation. ➢ If still unable to remove the instillation, instruct the patient to instill heparin with minimal force and continue with dialysis procedure. Do not give heparin prime. ➢ Have the patient call back to the Home Hemodialysis Office re catheter function. ➢ If the patient must use, considerable force to instill the heparin instillation, then stop. ➢ The patient may need to come in-centre for r-TPA push protocol. ▪ If patient has been taught to administer r-TPA. Obtain order from nephrologist for patient to give. *(The patient will only give a dwell at home)* • If unable to resolve the issue and the patient feels he/she needs at treatment he/she should go to the nearest emergency/nursing station for assessment including check of potassium. The HHD training nurse will contact the nephrologist for a Kayexalate order. • The HHD training nurse will notify the Vascular Access Nurse whenever a HHD patient is directed to emergency/nursing station.
	<u>If the patient has a fistula/graft:</u> • If fistula/graft, is there a change in the quality of the bruit?	• If the bruit is diminished and the BP is low follow Section b) Low Blood Pressure. Instruct the patient to re-check the bruit once the BP is normal.

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Problem/Issue	**Questions Asked of Patients**	**Advice to Patient**
.	• Was the patient able to puncture the fistula/graft? • What is the color of the blood in the flash back of the needle? • When was the patient's last successful dialysis? • Does the patient have Kayexalate if needed?	• If the bruit is diminished and the BP is normal, instruct the patient to proceed to the nearest emergency/nursing station. • If the blood is very dark in color instruct the patient to check the quality of the bruit. If diminished, instruct the patient report to the nearest emergency/nursing station. • If there is no bruit, proceed to emergency/nursing station. • If unable to dialyze and proceeding to the nearest emergency/nursing station, the HHD training nurse will contact the nephrologist for a Kayexalate order. • The HHD training nurse will notify the nephrologist and Vascular Access Nurse whenever a HHD patient is directed to emergency/nursing station. Alternatively, an in-centre treatment with a Vascular assessment may be recommended as opposed to reporting to emergency.
	<u>If there was a venous interstitial needle:</u>	• Instruct the patient to insert another venous needle proximal to the blow. Remind patient that they should not exceed 5 punctures per treatment. • If unable to insert the needle proximal to the blow instruct the patient not to dialyze. Ice the blow to prevent swelling and retry dialysis tomorrow. • If patient is not confident to retry hemodialysis the next day or if the patient feels that he/she needs a treatment the HHD training nurse should organize an in-centre treatment.

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Problem/Issue	Questions Asked of Patients	Advice to Patient
	<u>If there was an arterial interstitial needle:</u>	• Instruct the patient to insert another arterial needle either proximal or distal to the blow. • If unable to insert another needle instruct the patient not to dialyze. Ice the blow to prevent swelling and retry dialysis tomorrow. • If patient is not confident to re-try the next day or feels that he/she needs a treatment the HHD training nurse will organize and in-centre treatment.
g) Access issues during treatment:	• What is the usual blood flow (QB)? • What is the blood flow this dialysis? • What are the arterial pressure (AP) and venous pressure (VP)?	• If arterial pressures are > – 200 and/or the venous pressures are > 250 and the blood flow is < 200: ➢ If the access is a **CVC,** instruct the patient to switch bloodlines if they have been taught to do so. If no improvement with switched lines or If not taught to switch lines, they should end the treatment and give r-TPA as ordered and if taught to do so. If not taught to give r-TPA, organize a treatment in-centre for assessment of CVC and possible r-TPA administration. ➢ If the access is an **AVF**, the patient should end treatment. If the patient's assessment of the fistula finds no issues and the patient is confident to puncture an alternate site for the problem needle, the patient may re-set up and re-attempt HD.

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Problem/Issue	**Questions Asked of Patients**	**Advice to Patient**
	• Is there frequent pressure alarms, and a concern of clotting set up.	
h) Equipment/supply problems: **i. Dialysis supplies are low**	• Is patient dialyzing according to patient's dialysis prescription? • Does patient have enough supplies for his next dialysis treatment? • Does the patient have Kayexalate if needed?	• Review dialysis prescription with patient. **If patient does not have enough supplies:** • Instruct patient to call the closest Dialysis Unit to pick up adequate supplies for his next dialysis treatment. If there isn't a unit available as a back-up then the HHD training nurse will check with the nephrologist to discuss treatment plan If treatment required, not, the patient must proceed to the nearest emergency/nursing station to be assessed re urgency of treatment. Patient may need to be transported to Winnipeg. The HHD training nurse will contact the nephrologist for a Kayexalate order if treatment is required • Instruct the patient to contact Stores to arrange order and delivery of supplies. • Review with patient the importance of ordering adequate amounts of supplies.
ii. Machine problems and/ or machine alarms	▪ Is patient on dialysis at the time of the call? • When did the patient last dialyze (to determine urgency of treatment)?	• If technical, transfer to the Dialysis Technologist. • If alarm is able to be corrected, then review the Troubleshooting Guide with patient following phone guided intervention. • If unable to correct and the blood pump is off too long, clamp and discard blood lines. • If the patient is unable to dialyze, make arrangements for in centre treatment. The HHD training nurse will contact the

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Problem/Issue	Questions Asked of Patients	Advice to Patient
	• Does patient have Kayexalate if needed?	nephrologist for a Kayexalate order if treatment is required. • If an in centre dialysis spot is unavailable, and the patient required treatment. , he/she must go to the nearest emergency/nursing station for assessment. The HHD training nurse will contact the nephrologist for a Kayexalate order if treatment is required.