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NEPHROLOGY PROGRAM
DEPARTMENT POLICIES AND PROCEDURES

Hemodialysis - Section 03 - Patient Assessment & Management - Neph 3-01
Pre Dialysis, Intradialysis and Post Dialysis Assessment Standards
No. : 00726 (TOH Standardized Policy Number)

ISSUED BY:
Hemodialysis Clinical Practice

DATE OF APPROVAL:
N/A

APPROVED BY:
Program Clinical Director and Division Head

LAST REVIEW/REVISION DATE:
2018/04

CATEGORY:
Patient Assessment and Management

IMPLEMENTATION DATE:
2001/05

POLICY STATEMENT:

- To provide the patient a safe, effective, and comfortable treatment based on the dialysis prescription, pre dialysis assessment and the results of intra dialytic monitoring. In addition, a post dialysis assessment is conducted and the appropriate reporting occurs. Assessments and monitoring are documented.

BACKGROUND STATEMENTS:

- The hemodialysis nurse will remain with the patient for a minimum of 3 to 5 minutes immediately following the initiation of any hemodialysis procedure
- Intra dialysis treatment data is obtained and recorded immediately after the initiation of dialysis and at a minimum of hourly. The hourly patient assessment includes a total inspection of the circuit from the arterial supply through to venous return and the patient's access.
- During the dialysis session, data-logger will capture a line of information when: a BP is done, the session status changes from "pre-dialysis" to "in progress", a configurable amount of time has elapsed with no data, and the session status changes from "in progress" to "post dialysis". Interpret the information and acknowledge your review by clicking "Acknowledge". Your name and current time will be stamped for all unacknowledged information since the last acknowledge. Refer to Neph 8-1-2 Section B.
- Patients with intra dialytic symptoms or those who are at risk of developing intra dialytic symptoms require more frequent assessment

- When attaching blood lines to patient access verify the luer lock connections are secure by holding the attached line with one hand on each side of the luer lock connector and gently tug
- The patient's access and bloodlines must be visible throughout the treatment and any changes in the access noted and addressed if required. Documentation is required if the patient refuses to have their access visible during treatment.
- The nurse will modify the treatment plan based on the results of the intra dialysis and hourly rounding assessment
- Medications and treatments are administered appropriately
- Hourly rounding will include pain, positioning, personal possessions/environment and needs
- Toileting is assessed/addressed pre and post dialysis and if the patient has identified a need
- Shift report will be performed if there is a change of accountability during the patient's treatment. This includes the **SBAR** and **HEAL Safety Check** methods of reporting. SBAR is the acronym for **S**ituation, **B**ackground, **A**ssessment, **R**ecommendations. HEAL is the acronym for **H**igh alert medications, **E**quipment, **A**rmband, **L**ines.

DEFINITION(S): N/A

ALERTS: N/A

PROCEDURE:

Conduct assessments, which include but are not limited to the following:

Section A: Pre Dialysis

1. **Pre dialysis assessment of the <u>out-patient</u> includes but is not limited to the following:**
   - Initiate a patient session in NephroCare by clicking on the appropriate patient name on the main screen. Verify name, MRN and photo ID. If photo was declined or if the patient does not have a photo in NephroCare, verify patient identity by asking for date of birth or checking inpatient ID bracelet. Refer to Neph 8-1-2 Section A for more details related to documentation.
   - Review the R191 Patient Care Summary with NephroCare:
     - Allergies
     - Transplant status
     - Note the Resuscitation status in the Nurses Worksheet and R191 Patient Care Summary
     - Hemodialysis Orders
     - Medication Orders
     - Nurses Worksheet
     - Incidents from previous sessions

- Directives and Orders
- Progress notes
- Note orders generated from the active Care Maps. Complete Care Map steps as appropriate.
- Appointments
- Review any recent/pertinent laboratory data
- If NephroCare is not operating review the paper copy of the Medication and Hemodialysis orders available in each unit
- Ensure the orders are current. If patient is not from TOH ensure the faxed information has been reviewed by the Nephrologist covering the unit. Pertinent hemodialysis / medication orders have been entered into NephroCare.
- Assess for signs of Febrile Respiratory Illness (FRI) and initiate Isolation Precautions as appropriate. Contact Nephrologist/delegate and/or infection control department as needed.

- Obtain history:
  - Problems and Allergies (e.g. INR via thrombosis clinic)
  - Review lab results as needed
  - General health
  - Medical appointments or Emergency department visits since last treatment
  - Changes to medications since last treatment
  - Psychosocial issues
  - Physical complaints experienced since last dialysis such as: fatigue, nausea, vomiting, diarrhea, cramps, weakness, bleeding, itchiness, and recent blood sugars on a diabetic patient

- Conduct physical exam:
  - Change in mental status (orientation, confusion, restlessness, mood, speech, and thought processes), pallor, edema, enlarged neck veins, chest sounds as necessary
  - Pulse
  - Temperature
  - Blood Pressure (sitting only unless otherwise ordered) *see note below
  - Weight (Pre dialysis weight). Assess inter dialytic weight gain or loss and compare to previous treatments and to the ordered dry weight. **Note: The maximum net fluid removal from a patient is 2.0 L per hour.**
  - Pain assessment includes: Onset of event (O), provocation or palliation (P) quality of pain (Q), region & radiation (R), severity (S), timing (T), also known as OPQRST
  - Hemodialysis catheter (Note the condition at site e.g. redness, discharge, sutures, dressing)
  - AVF/AVG (includes access with Buttonhole sites) assessment: Note any areas of redness, tenderness or pain. Patient history of any of these symptoms including fever or chills to be obtained from the patient and

reported to the Responsible Nephrologist if identified. Patients with Buttonhole sites are at increased risk of infection.

- Any new / alternate vascular access
- PD access

- Guidelines for measurement of BP in the hemo units using an automated device:
  - Choose appropriate cuff size matched to the size of the arm (see chart below)
  - The upper arm is the first choice for BP measurement. In cases where neither upper arm can be used for a blood pressure measurement an alternative site would be the forearm. However, systolic BP would tend to be higher than upper arm. If using the lower leg, the BP would tend to be lower than upper arm.
  - On initial patient Hemodialysis treatment obtain the appropriate cuff size by measuring the circumference of the arm midway between shoulder and elbow:
    - Place the cuff so that the lower edge is 3 cm above the elbow crease and the artery indicator on the cuff is centered over the brachial artery
    - The patient should not be talking and should be resting comfortably in the seated position. **The arm should be bare, or with a thin layer of clothing**, and supported with the antecubital fossa at heart level (use of a pillow may help). Remove any bulky clothing e.g. thick sweaters which can alter BP readings.
    - If BP is taken in lower arm, arm should be supported on a pillow or arm of chair
    - If BP is taken in lower leg, chair should be tilted back with feet raised
  - The cuff size to be used for the patient should be documented in the Nurses Notepad section in NephroCare. Use the cuff size from the available cuffs on the unit that best meets the needs of the patient.

Arm Circumference (cm)	Size of Cuff
~ 18 to 26 cm	Child/Small adult cuff
~ 25 to 35 cm	Standard adult cuff
~ 33 to 47 cm	Large adult cuff
> 41 cm	Extra large adult cuff

- Determine treatment plan:
  - Determine need to draw pre dialysis blood samples
  - Determine target fluid removal. **Note: The maximum net fluid removal from a patient is 2.0 L per hour.** Refer to Medical Directive Neph 2-12 for medical directive to adjust target weights.
  - Determine need for an anticoagulant free treatment
  - Determine the need for access monitoring (routine, as a result of the assessment or as a follow-up to a previous intervention)

- Determine need for pain management
- Act on Care Map orders

- Verify the Hemodialysis machine is prepared as per program policies e.g. Neph 10-01 Re-evaluate the appropriateness of the dialysis prescription, particularly: target weight, dialysate potassium, and anticoagulation requirements.

2. Pre dialysis assessment of the <u>in-patient</u> will also include but is not limited to the following:

- Review in-patient chart (TOH General and Civic campus hemodialysis units):
  - Inter-professional Kardex, End of life care and plan of treatment (note category 1,2 or 3, Isolation precautions)
  - Medication Administration Records, (e.g. Diabetic MAR, Routine MAR, PRN MAR, Heparin MAR), Re-evaluate the medications that the patient should receive during the dialysis treatment, e.g. antibiotics, antihypertensives, analgesics. Arrange to give them when necessary.
  - Review Oasis for most recent lab work
  - Integrated Progress Notes
  - X-ray report if applicable
  - Any other pertinent documents
  - Physician Orders, **Note: the in-patient chart is the legal chart and these orders take precedence over any previously written orders in NephroCare**
  - While the patient is admitted, all orders related to the dialysis treatment are to be written on the inpatient chart. The nurse will enter these orders into Nephrocare. Refer to Neph 8-2-5 Section B

- For in-patient dialysis of a chronic hemodialysis patient, use orders in the in-patient chart. If none are available, start the treatment with the most recent out-patient orders unless the results of your nursing assessment warrants contacting the Nephrologist for new orders. The patient should be assessed by Nephrology and orders should be written on the inpatient chart.
- Review Transfer of Accountability form sent with patient and communicate verbally with sending unit as required (Nursing Transfer of Accountability (NTA): Patient Transfer No.:01183). Assess dressings, tubes, wounds, IV's that are present.
- If an in-patient is ordered Enteral feeds, the nurse will assess if the patient is diabetic and receiving insulin
  - **If yes**, then the feeds will be run on dialysis. Ensure the head of bed is raised during treatment.
  - **If no**, then the nurse will follow up with the Nephrologist and receive an order to hold the feed on dialysis. There is increased risk for aspiration if the patient has hypotension.
  - The dialysis nurse will stop the feeds pre dialysis and resume post treatment before returning the patient to the in-patient unit. The feeding pump can be programmed to "keep tube open" (KTO). The dialysis nurse

will report to the in-patient nurse that the feeds will be held on dialysis so the in-patient nurse can follow up with the team\Dietitian caring for the patient as adjustment may be required to the feeding schedule or rate.

Section B: Intra Dialysis/Hourly Rounding

1. Intra dialysis assessment includes but is not limited to the following:

- **Vital Signs** are assessed based on individual needs (e.g. 5-30 minutes) during acute dialysis and at least hourly during chronic hemodialysis. The blood pressure and pulse are compared to the pre dialysis blood pressure and previous blood pressure measurements. If the patient is symptomatic of decreased blood pressure, treat for hypotension.
- **Pain Management** assessed as per corporate and unit specific standards as needed
- **Blood Flow** is set as prescribed for acute patients. Blood flow is set to ensure maximum blood processed for established patients while considering the limitations of the patient's access and the appropriateness of the blood flow for the patient to receive adequate dialysis. Adjust blood flow so that the automatically set arterial and venous pressure limits are not exceeded.
- **Arterial Pressure** can be as low as -260 mmHg. Obstruction in the arterial system starting at the arterial access up to and including the arterial drip chamber will result in a lower (more negative) arterial pressure. An audio/visual alarm will occur, the blood pump will stop and the venous line clamp will clamp. The cause of the lower or higher arterial pressure must be assessed and corrected prior to resetting the alarm and resuming the blood flow.
- **Venous Pressure** can be as high as +260 mmHg. Obstruction in the venous system starting at the venous drip chamber will cause the venous pressure to rise. An audio/visual alarm will occur, the blood pump will stop and the venous line clamp will clamp. The cause of the higher or lower venous pressure must be assessed and corrected prior to resetting the alarm and resuming blood flow.
- Monitoring the circuit for signs of clotting and monitoring the patient for any signs of bleeding following administration of Tinzaparin
- **Review parameters in other programs such as Hemoscan, Hemocontrol**
- Review Diascan screen to ensure the Kt/V (green line) is progressing in an upward slope within the first hour of hemodialysis treatment. This indicates solute removal is occurring during the treatment (Nephrology Practice Alert #148—Diascan Update).
- **The levels in the arterial and venous chambers** are appropriate. Adjust the level of the blood to the top of the frosted line or ¾ of the chamber. The level in the arterial chamber is high enough to prevent air entry should the arterial pressure decrease.
- **Dialysate Flow** must be set as prescribed
- **Ultrafiltration Rate** must be consistent with the weight loss goal

- **Assess TMP**. TMP will be affected by pressure changes in the blood circuit or dialyzer. TMP depends on the goal: with a high goal = +TMP and with a low goal = -TMP. As fluid is removed: if fibers in the dialyzer become clotted, TMP will increase, if clotting or fibrin form around the filter of the venous chamber, TMP will go down.
- **Conductivity** must be consistent with the prescribed dialysate and sodium program
- **Temperature** is set as prescribed. Usual setting is 36.0°C. Warmer dialysate increases the risk of hypotension. As such, warmer dialysate should not be used unless specifically ordered to treat acute hypothermia. Hemolysis can occur if temperature exceeds 42.0°C. Decreasing the temperature to 35.5°C may be useful in treating hypotension, but should not replace assessment of UF goal, dry weight, BP medications and other causes of hypotension.
- The **Access** is examined and is visible throughout the treatment. Tapes and connections are secure.
- **Access monitoring** is performed on established AV fistulas and grafts once per month and as needed and the results are documented. Deviations from the normal are reported and a follow-up plan is developed and documented. See Policy Neph 11-05b for details.
- The **final intradialysis assessment is done just prior to finishing the treatment**. Doing a BP reading just prior to rinseback ensures an accurate relative blood volume (RBV) is captured at the end of the treatment. Based on the final assessment the nurse will determine the volume of saline required for rinseback. **Note: the arterial chamber should be ¾ full to avoid air in the arterial line during rinseback. Always visualize arterial line for air during rinseback.**
- Check for **new Physician Orders** before finishing the treatment
- Verify that **all intradialytic treatments and medications have been administered**

Section C: Post Dialysis

Refer to Neph 3-05 Guidelines for Contacting a Nephrologist/Delegate Post Dialysis for common situations encountered at the end of dialysis in relation to the patient's vital signs, vascular access and weight

1. **Post dialysis assessment of the out-patient includes but is not limited to the following:**
    - Temperature
    - Pulse
    - BP lying or sitting; standing (if patient is able)
    - Weight
    - Symptoms: cramps, nausea, dizziness, headache
    - Vascular access: note any change from pre dialysis, bleeding time from sites
    - Condition of the hemodialysis catheter dressing

- Clearness of the extracorpeal circuit post rinse back
- Assessment of the need for dialysis treatment anticoagulant adjustment
- Pain assessment as needed

2. **Post dialysis assessment of the in-patient will also include but is not limited to the following:**
    - The assessment of dressings, tubes, wounds, IV's that are present
    - Review of the in-patient MAR, Kardex
    - Report will be written on the Nursing Transfer of Accountability (NUR210) form under the "Clinic/treatment visit" section. Verbal communication with the receiving unit as required.
    - Follow processes for Safe Patient Transportation—Accompaniment and Requirements policy (No.: 01684)

DOCUMENTATION:

1. Document the results of the assessments and actions as per Neph: 8-2-5

2. Document in NephroCare as per Neph 8-1-2

3. Transfer of Accountability is documented in the Incidents screen in Nephrocare Nursing Policy, Procedure and Protocol Manual: Nursing Transfer of Accountability (NTA): Patient Transfer No.: 01183.

RELATED POLICIES / LEGISLATION: Corporate Policies and Procedures - Patient and Community Relations - Pain Assessment and Management - # 00334Nephrology Policies and Procedures - Hemodialysis - Section 02 - Medical Directives - Neph 2-12 Hemodialysis Target Weight AdjustmentsNephrology Policies and Procedures - Hemodialysis - Section 03 - Patient Assessment and Management - Neph 3-03 (#00740) Identification, Prevention and Management of Complications during HemodialysisNephrology Policies and Procedures - Hemodialysis - Section 03 - Patient Assessment and Management - Neph 3-05 (#01375) Guidelines for Contacting a Nephrologist-Delegate Post DialysisNephrology Policies and Procedures - Hemodialysis - Section 07 - Medication - Neph 7-05 (#01157) Hemodialysis Anticoagulation StandardsNephrology Policies and Procedures - Hemodialysis - Section 08 - Documentation - Neph 8-1-2 (#00765) Documentation of the Hemodialysis Session from the Artis MachineNephrology Policies and Procedures - Hemodialysis - Section 08 - Documentation - Neph 8-2-5 (#00769) Hemodialysis Nursing Documentation in NephroCareNephrology Policies and Procedures - Hemodialysis - Section 10 - Gambro Artis - Neph 10-01 (#01160) Preparing the Gambro Artis Machine for Double Needle HemodialysisNephrology Policies and Procedures - Hemodialysis - Section 11 - Auxiliary Hemodialysis Procedures - Neph 11-05b (#01208) Assessing Access Recirculation and Flow Using

1. Nursing Policy, Procedures, Protocols - Hourly Rounding - # 00631

2. Nursing Policy, Procedures, Protocol Manual - Nursing Transfer of Accountability (NTA) – Bedside Shift Report (BSR) - # 00632

3. **Nursing Policy, Procedure and Protocol Manual: Nursing Transfer of Accountability (NTA): Patient Transfer No.: 01183.**

4. **Corporate Policies and Procedures. Safe Intracampus Patient Transport—Accompaniement and Requirements No.: 01684**

REFERENCES:

1. Canadian Hypertension Education Program (CHEP) 2014 CHEP Recommendations for the Management of Hypertension: Diagnosis & Assessment Tables. Retrieved from www.hypertension.ca

2. Gambro Artis User Manual, 2012 version 8.09

3. Nephrology Nursing Standards and Practice Recommendations (2014). Canadian Association of Nephrology Nurses and Technologists retrieved from http://www.cannt.ca/files/CANNT%20Nursing%20Standards%20April%208%202014%20NP.pdf

4. TOH Nephrology Program Policies & Procedures

5. TOH Nephrology Hemodialysis Clinical Practice Committee member's expert opinions

COMMENTS / SIGNIFICANT REVISIONS: N/A