PROVINCIAL STANDARDS & GUIDELINES

BCRenal
Provincial Health Services Authority

The Hemodialysis Interdisciplinary Team

Matching Skill Mix with Patient Care Needs

February 2021 Version 1.0
Approved by the BC Renal Administrators Committee

Provincial Health Services Authority
Province-wide solutions. Better health.
BC Children's Hospital
fraserhealth
Better health. Best in health care.
Interior Health
island health
northern health
the northern way of caring
Providence HEALTH CARE
How you want to be treated.
Vancouver CoastalHealth
Promoting wellness. Ensuring care.

Table of Contents

IMPORTANT INFORMATION

This BC Renal guideline/resource was developed to support equitable, best practice care for patients with chronic kidney disease living in BC. The guideline/resource promotes standardized practices and is intended to assist renal programs in providing care that is reflected in quality patient outcome measurements. Based on the best information available at the time of publication, this guideline/resource relies on evidence and avoids opinion-based statements where possible; refer to www.BCRenal.ca for the most recent version.

For information about the use and referencing of BC Renal guidelines/resources, refer to http://bit.ly/28SFr4n.

BCRenal
Provincial Health Services Authority

BC Renal
Phone: 604-875-7340
Email: BCRenal@BCRenal.ca
Web: BCRenal.ca

Facebook.com/BC Renal
@BCRenal
Youtube.com/BCRenal

1.0 Hemodialysis Interdisciplinary Health Care Team

A successful hemodialysis program is dependent on the expertise of all members of the interdisciplinary team, thereby maximizing the use of all members for quality hemodialysis care. An interdisciplinary team is a group of health care providers from different fields who work together or toward the same goal to provide the best care or best outcome for patients.

The interdisciplinary team collaborates with patients and their families to discuss patient-centred management plans, goal-setting and advance care planning. To ensure effective and cohesive teamwork among hemodialysis team members, definitions and understanding of individual roles are essential.

The hemodialysis (HD) interdisciplinary health care team includes:

- Biomedical technician
- Health care aide
- Licensed practical nurse
- Nephrologist
- Pharmacist
- Registered dietitian
- Registered nurse
- Registered social worker
- Renal administrator
- Renal technician
- Unit clerk

Additional team members for hemodialysis programs may include:

- Nurse practitioner
- Spiritual care advisor

1.1 Biomedical Technician

The **biomedical technician** is responsible for maintaining dialysis machines and water quality in the health authority kidney/renal program.

1.2 Health Care Aide

The HD health care aide works collaboratively with the hemodialysis team to assist with patient care needs as identified by the health authority kidney/renal program.

1.3 Licensed Practical Nurse

The hemodialysis **licensed practical nurse** (LPN) works collaboratively with the registered nurse (RN) to perform procedures for hemodialysis patients with stable or predictable states of health. The LPN can work in the hemodialysis program after successfully completing:

- the hemodialysis core curriculum in-house training developed by the health authority kidney/renal program, or
- the Nephrology Nursing Advanced Specialty program for Hemodialysis LPNs offered by the British Columbia Institute of Technology, or;
- the equivalency.

1.4 Nephrologist

The **nephrologist** is involved with the patient's transition to hemodialysis from pre- dialysis care or from an alternative modality of kidney replacement therapy. Often, the nephrologist specializing in HD care can differ from the patient's primary nephrologist, and transition of care should occur between physicians once the patient requires hemodialysis therapy. Nephrologists work in partnership with the interdisciplinary team to establish therapeutic relationships that focus on delivering patient-centred care. They play important roles in pre-dialysis counselling, patient treatment, and quality management, among other roles.

1.5 Pharmacist

Hemodialysis patients often require multiple pharmacotherapies and complicated drug regimens

to manage their condition. The **pharmacist** works in collaboration to provide medication compliance counseling, drug interaction screening, medication reconciliation, evaluation and interpretation of drug level assays, education for staff and patients and enhanced overall medication management.

1.6 Registered Dietitian

The significant role of nutrition in the care of dialysis patients is well-documented. The **registered dietitian** provides education and clinical guidance to assess the patient's nutritional needs, develop and implement individual nutrition programs and monitor and evaluate the patient's response.

1.7 Registered Nurse

The hemodialysis **registered nurse** has many important roles, including that of a patient care giver, educator, and care coordinator. The RN can work in the hemodialysis program after successfully completing:

- the hemodialysis core curriculum in-house training developed by the health authority kidney/renal program, or
- the Nephrology Nursing Advanced Specialty program offered by the British Columbia Institute of Technology, or;
- the equivalency.

The hemodialysis nurse provides ongoing education and support for the patient throughout their hemodialysis journey and ensures continuity of care between the patient and wider health care team incorporating a case management approach.

1.8 Registered Social Worker

The **registered social worker** is essential to the well-being of the patient as they transition and adjust to all phases of kidney care. They work collaboratively with the health care team to develop a plan of care inclusive of assessment, support, consultative and direct services to address patient needs related to high social determinants of health and risk factors in adaptation to chronic illness, self-care and self-management.

1.9 Renal Administrator

The **renal administrator** has many important roles which include all aspects of clinic and facility operations. The renal administrator works in a collaborative manner with all members of the interdisciplinary team to plan, direct, and evaluate the quality of care within the hemodialysis unit.

1.10 Renal Technician

The **renal technician** works closely with patients, nurses and other health care providers to ensure vital hemodialysis equipment runs at a safe and efficient level. The RT may perform patient care duties within assigned roles and responsibilities as indicated within the health authority kidney/renal program.

1.11 Unit Clerk/Unit Coordinator/Nursing Unit Assistant

The **unit clerk** provides administrative support to ensure day-to-day operations of HD programs are seamless and efficient.

Description of specific roles and responsibilities can be obtained by contacting the lead chairperson for each discipline. This information can found at bcrenal.ca.

2.0 Collaborative Patient Care Model

A collaborative patient care model allows for partnership between the patent and their health care providers to approach shared decision making regarding their health care goals. In this model the knowledge, training and experience of health care providers is recognized and key in addressing the patient's goals of care.

Traditionally, patient assignments are based on what care providers are available at any given time. The collaborative care model will bring a team together in a new and different way to achieve patient centered care and allow patients and their families to play an active role in contributing to their care plan, based on their health goals. Patients will be supported by a team of health care providers using all of their valued knowledge, training and ability to help patients achieve their goals.

A collaborative patient care model is a component of hemodialysis care that includes a greater emphasis on teamwork and collaboration. Within this context, there are several factors that influence decision-making.

Decision-making factors in a collaborative patient care model

Decisions should:

- Respond to the patient's health care needs and enable the delivery of safe, competent, ethical, quality, evidence-informed care in the context of professional standards and staff competencies.
- Be guided by the best evidence related to patient, staff and organizational factors influencing quality care outcomes and work environments.
- Be supported by the organizational structure, mission and vision and by all levels of lead¬ership in the organization.
- Be supported by information and knowledge management systems.

3.0 The Patient, Care Provider, and the Hemodialysis Environment

Matching the patient with the appropriate care provider focuses on three factors — the patient, the care provider and the environment. These three factors have an impact on decision making related to care provider assignment to match with the patient's needs, as well as the need for consultation and collaboration among care providers.

FACTORS	CRITERIA
Patient factors	• Complexity of patient care needs • Stability of outcomes • Predictability of outcomes • Risk of negative outcomes
Care provider competencies	• Education • Experience • Expertise
Environment	Access to resources. Some examples may include: • Registered nurse/team lead • Hemodialysis trained licensed practical nurse • Vascular access nurse • Wound care nurse • Nephrologist • Interdisciplinary team • Clinical resources and policies • Supporting clinical decision tools

4.0 Recommendations

The recommendations below were developed by an interdisciplinary working group representing all BC health authorities and professional practice experts. Feedback was provided and the recommendations have been approved by the BC Renal Administrators Group. With limited literature to guide the discussions, the recommendations are primarily based on expert opinion as to what works and doesn't work in BC.

4.1 Recommendation 1:

Each BC hemodialysis unit may choose to adopt the Collaborative Patient Care Model outlined in Appendix I, II & III. The following principles guide nurses' practice expectations and are the basis for decision-making when working within the interdisciplinary team.

Principles to guide nurses' practice expectations:

- The goal of professional practice is to obtain the best possible outcome for clients.
- The complexity of a client's condition influences the knowledge required to provide the level of care the client needs. A more complex client situation and less stable environment create an increased need for consultation and/or the need to involve the interdisciplinary team to provide the full range of care requirements.
- Respecting and understanding the expectations and contributions of the health care team facilitates appropriate use of staff, enhances collaboration and leads to improved client outcomes.

4.2 Recommendation 2:

Each BC hemodialysis program may choose to optimize the scope of practice for each discipline through applying the criteria outlined in the Collaborative Patient Care Model (Appendix I, II & III). This document provides criteria for the appropriate selection of care providers based on hemodialysis patient care needs. It is intended as a guideline, with the recognition that exceptions (limited to scope of practice) may be made by nursing teams in individual circumstances after weighing patient factors and risk. If required, review of overall acuity level of the patient (as per the BCR Acuity Scale), found at:

BCRenal.ca ▶ Health Professionals ▶ Clinical Resources ▶ Hemodialysis ▶ Acuity Scale and BC's Hemodialysis Units

4.3 Recommendation 3:

Utilize the BC Renal acuity scale to identify a high level profile on the overall care needs of the dialysis population for the unit. The BC Renal Acuity Scale may help in this process; however, day-to-day assessment by the team lead/patient care coordinator should be done on a routine basis.

Daily hemodialysis schedule should identify:

1. The proportion of patients where hemodialysis trained LPNs are well prepared to meet patient care needs
2. The proportion of patients where hemodialysis trained RNs are well prepared to meet patient care needs
3. Collaboration with all team members to provide a patient care model that includes a greater emphasis on teamwork and collaboration
4. Overall staff model to meet patient needs based on patient population
5. Process to support nurses to coordinate complex Chronic Disease Management and co-morbid care planning needs; engage the interdisciplinary team and patient in the coordination of this management
6. Review run-by-run or shift-by-shift unit care needs to promote equity in care needs between runs/shifts and adjust patient schedules or resources as needed
7. Repeat review as needed based on updated Acuity Scale measures

4.4 Recommendation 4:

As this is chronic disease care management and the majority of hemodialysis patients are outpatients, but not all, there are three basic workflows to consider:

1. Dialysis-related care needs for outpatients, supporting patients while receiving dialysis
2. Dialysis-related care needs for inpatients, supporting patients in hospital receiving dialysis:
    a. Inpatients dialyzing on the HD Unit
    b. Off-Unit patients
    c. ICU patients requiring hemodialysis
4. Chronic Disease Management care needs, supporting patients with their long-term health care needs such as:
    a. Transitioning to independent modalities where possible
    b. Promoting long-term optimal vascular access (VA)
    c. Managing co-morbidities
    d. Learning to cope with and provide support for psychosocial issues

4.5 Recommendation 5:

Utilize the BC Renal acuity scale to assist in determining the overall patient care needs of the dialysis unit when to determine appropriate staffing levels. Once levels have been established, this may require intermittent monitoring of the individual dialysis run schedules to promote an equitable distribution of care needs throughout all shifts. (While the individual patient acuity score helps identify care needs, within a collaborative care model it does not necessarily identify the care provider required at a specific point in time.)

Review and adjust care needs of the unit related to specific shifts or runs using the following strategies:

- If there is a significant proportion of patients with higher dependent care needs in relation to independent function and psychosocial-emotional factors:
    - Would it be beneficial for patients with higher physical needs to be moved to a time when more appropriate resources are available? (i.e., fewer dependent patients, access to care aides, LPNs, support resources)
    - Would it be beneficial for patients with higher emotional needs to be linked to appropriate resources for individualized care planning? Would adjusting the patient schedule benefit these patients with ready access to interdisciplinary team support? (i.e., the in-centre hemodialysis unit and the community dialysis unit)

- If there is a significant proportion of patients in a higher level of acuity in terms of hemodynamics, access, treatments and nursing interventions:
    - If the higher level of acuity is related to hemodynamic instability, treatment or monitoring needs, movement of patient assignments may be feasible. For example, change hemodialysis treatment times to a different time in the day, when there are fewer patients with similar care needs, and appropriate resources are available (i.e., patient care coordinator/team lead/vascular access nurse/nephrologist, and therefore access to an interdisciplinary team)

- If the higher level of acuity is related to vascular access, infection control, or individualized care needs, the patient should be supported by the interdisciplinary team (e.g., access to VA Nurse, infection control resources, interdisciplinary and clerical support).

5.0 Patient Care Needs and Nursing Practice Expectations

The following principles guide nurses' practice expectations and are the basis for decision-making when working within the nursing team:

- The goal of professional practice is to obtain the best possible outcomes for hemodialysis patients.
- RNs and LPNs study from the same body of nursing knowledge. RNs span of practice is broad and across the spectrum allowing for greater foundational knowledge in clinical practice, decision-making, critical thinking, leadership, research utilization and resource management. RNs have a broader range of autonomous practice in comparison to LPNs.
- The complexity of a patient's condition influences the nursing knowledge required to provide the level of care the client needs. A more complex patient situation and less stable environment create an increased need for consultation and/or the need for an RN to provide the full range of care requirements.
- Respecting and understanding the expectations and contributions of the health care team facilitates appropriate use of nurses, enhances collaboration and leads to improved client outcomes.

5.1 Patient Health Factors

Patient health factors that impact decisions about the use of an RN and/or an LPN are influenced by:

1. Complexity:
    - The degree to which a patient's condition and care requirements are identifiable and established
    - The sum of the variables influencing a patient's current health status
    - The variability of a patient's condition or care requirements
2. Predictability:
    - The extent to which a patient's outcomes and future care requirements can be anticipated
3. Risk of negative outcomes:
    - The likelihood that a patient will experience a negative outcome as a result of the patient's health condition or as a response to treatment

6.0 References

British Columbia College of Nurses and Midwives (2020). Scope of Practice for Registered Nurses: Standards, Limits, Conditions

British Columbia College of Nurses and Midwives (2020). Scope of Practice for Licensed Practical Nurses: Standards, Limits, Conditions

British Columbia College of Nurses and Midwives (2020). Professional Standards for Licensed Practical Nurses

British Columbia College of Nurses and Midwives (2020). Professional Standards for Registered Nurses and Nurse Practitioners

British Columbia College of Nurses and Midwives (2020). Practice Standards for Registered Nurses

British Columbia College of Nurses and Midwives (2020). Practice Standards for Licensed Practical Nurses

British Columbia College of Nurses and Midwives (2020). Medication Practice Standard

Canadian Association of Nephrology Nurses and Technologists (2014). Nephrology nursing standards and practice recommendations. Author. Available at: http://www.cannt.ca/en/standards_of_practice/standards_of_nursing_practice.html

Interior Health (2011). LPN Entry Level Competency

Providence Health (2020). PHC Renal Program CAPE Tool

Registered Nurses' Association of Ontario (2006). Collaborative Practice Among Nursing Teams. Toronto, Canada: Registered Nurses' Association of Ontario

7.0 Sponsors

This guideline/resource promotes standardized practices and is intended to assist kidney/renal programs in providing care that is reflected in quality patient outcome measurements. Based on the best information available at the time of publication, this guideline/resource relies on evidence and avoids opinion-based statements where possible; refer to www.bcrenal.ca for the most recent version.

Created by:

- Hemodialysis Workforce Strategy working group

Reviewed by:

- BC Renal Administrators
- BC Renal Core Committee
- BC Renal Executive
- BC Renal Hemodialysis Committee
- BC Renal Nurse Educators
- BC Renal Vascular Access Educators Group
- British Columbia College of Nurses and Midwives

Approved by:

- BC Renal Administrators Group
- BC Renal CORE Committee

For information about the use and referencing of BC Renal provincial guidelines/resources, refer to http://www.bcrenal.ca/resource-gallery/Documents/About%20BCPRA%20Guidelines.pdf

Appendix I- Hemodialysis Nursing Care and Interventions

The care of patients on maintenance hemodialysis is complex and requires continual assessment, planning, intervention, and patient education over the patient care continuum.

Hemodialysis Nursing Care	Autonomous LPN or RN practice	Increased need for RN collaboration from care team	Experienced RN with support
Patient Care Continuum	Less complexity, stable, more predictable		High complexity, unstable, unpredictable

Hemodynamic Descriptors Below

LEVEL	DESCRIPTION
Hypotension	
None	No hypotension noted during treatment.
Basic	Blood pressure managed with any or all of the following: sodium profiling, fluid profiling, and dialysate temperature.
Moderate	Patient has hypotensive symptoms that require use of routine interventions. Patient able to complete treatment.
Advanced	Difficulty completing treatment due to hypotension. Requires medical review.
Complex	Unable to complete treatment due to hypotension. Requires urgent medical review.
Very complex	Patient requires continuous monitoring at a critical care level.
Hypertension	
None	No hypertension noted during treatment.
Basic	Blood pressure managed with any or all of the following: sodium profiling, fluid profiling, and dialysate temperature.
Moderate	Patient has hypertensive symptoms that require use of routine interventions. Patient able to complete treatment.
Advanced	Difficulty completing treatment due to hypertension. Requires medical review.
Complex	Unable to complete treatment due to hypertension. Requires urgent medical review.
Very complex	Patient requires continuous monitoring at a critical care level.
Cardiac Status*	
None	No cardiac history.
Basic	Has cardiac history but asymptomatic during dialysis treatment and managed with uncomplicated, medically-prescribed treatments (e.g. nitroglycerin patch, warfarin, home oxygen, pacemaker, HD prescription limits).
Moderate	Symptomatic during dialysis but responded to PRN nitroglycerin, oxygen therapy, and/or fluid therapy. Physician is aware.
Advanced	Difficulty completing HD treatment due to cardiac related symptoms. Responds to nitroglycerin, oxygen therapy, and/or fluid therapy.
Complex	One of the following is present during dialysis treatment: • Unable to complete run due to cardiac related symptoms. Requires frequent monitoring of vital signs. • New onset of a cardiac condition such as chest pain or arrhythmia during treatment: requires urgent medical workup and review. • Acute decompensated heart failure (e.g. secondary to infection, failure to take medications as ordered, fluid overload during treatment. Signs and symptoms may include symptomatic hypotension, and pulmonary edema. • Pericarditis: requires urgent medical workup and review. • Pericardial effusion: requires urgent medical workup and review. • Ventricular assist device (VAD)
Very complex	Unable to dialyze without continuous monitoring at a critical care level.
Fluid Management	
None	Attains goal weight.
Basic	Minor goal weight adjustments by nursing during treatment, UF/sodium profiling.
Moderate	Goal weight adjustment made by nephrologist during treatment, concentrated attention to fluid management, dietary counseling to address fluid issues.
Advanced	Require extended run or rehydration during treatment.
Complex	Difficulty achieving goal weight during treatment. Requires frequent monitoring, regular interventions such as extended treatment, ultrafiltration, sequential dialysis, rehydration.
Very complex	Is being monitored at a critical care level.

Stable or predictable care needs that are **appropriate for LPNs** to autonomously care for, although **an experienced LPN may be more appropriate for moderate level of care needs** with an established care plan. If care needs change, the LPN is responsible for identifying a concern to a RN colleague.

Somewhat stable or unpredictable needs that may require the **increased need for RN collaboration**. Indicates patient care needs that may be managed by an experienced LPN in partnership with an RN, or cared for solely by a RN.

Unstable and unpredictable

Advanced or very complex. Indicates clinical instability.

Example:

Unable to complete dialysis run due to hypotension or hypertension. Requires urgent medical review. Medical needs **must be managed by a nephrologist.**

One of the following may be present during dialysis treatment:

- Difficulty achieving goal weight during treatment and the level of nursing support required would be detrimental to daily workload operations.
- Unable to complete dialysis run due to cardiac related symptoms. New onset of a cardiac condition such as chest pain or arrhythmia during treatment: required urgent medical workup and review.
- Acute decompensation heart failure (e.g., secondary to infection, failure to take medications as ordered, fluid overload during treatment).

			• Signs and symptoms may include: symptomatic hypotension and pulmonary edema. • Pericarditis: requires urgent medical workup and review. • Pericardial effusion: requires urgent medical workup and review.
Hemodialysis Treatment **LEVEL** / **DESCRIPTION** **Medications** None or ESA only: None or Erythropoiesis **Stimulating Agent** (ESA) Only Basic: Either or both of (may be self-administered): (1) Patient requires oral medications for comfort on treatment (2) Patient requires iron and ESA therapy to maintain Hgb Moderate: Patient requires IV antibiotics or IV medications for comfort on the treatment. Requires narcotics for pain control. Advanced: Any of: (1) Patient requires IDPN (intradialytic parenteral nutrition) (2) Patient requires blood products (3) Patient requires in-patient prescribed infusions not related to dialysis. Complex: New condition/onset of an event requiring specialized medications without critical care intervention. Very complex: Medications requiring monitoring at a critical care level. **Respiratory Therapy** None: No respiratory support necessary. Basic: Minor or self-administered therapy e.g. home oxygen, nebulizers and respiratory inhalers. Moderate: Requires oxygen supplementation, nebulizer support during treatment. Requires setting up oxygen supplies during treatments. Advanced: Use of oxygen or nebulizer therapy that also indicates a need for a medical review or respiratory investigation during treatment. Acute Respiratory Distress: episodes of acute respiratory distress that resolves with nursing intervention using the site-specific hypoxemia protocols. Complex: Sudden onset of acute shortness of breath unresolved with intervention. Suctioning or airway management. Very complex: Critical care level airway support. **Specialized Treatments** None: None Basic: Stable patient but unable to self-administer treatment; uncomplicated nursing procedure, e.g. uncomplicated suture or staple removal; more frequent bloodwork :Hgb, INR, K+ Moderate: Stable patient but unable to self-administer treatment; requires more involved nursing procedure, e.g. insertion and maintenance of peripheral IV, maintenance of urinary catheter, flushing of PD tube, complicated suture/staple removal, ostomy care. Advanced: Patient unstable/potentially unstable requiring treatments that need continuous monitoring e.g. NG tube feed, continuous NG to suction, management of a supra-pubic catheter, continuous bladder irrigation. Complex: Patient unstable or immediately post-op from major surgery requiring, for example, plasma therapeutic exchange only or combination with hemodialysis, chest tube management, epidural, CVP, PCA pump. Very complex: Patient requiring critical care setting.	Descriptors of **stable and/ or predictable** care needs that are **appropriate for LPNs** to autonomously care for, although an **experienced LPN** is **more appropriate for a moderate level** of care needs with an established care plan. If care needs change, the LPN is responsible for identifying a concern to a RN colleague.	Descriptors of **somewhat unstable or unpredictable** which will require the **increased need for RN collaboration**. Indicates patient care needs that may be managed by an experienced LPN in partnership with their RN colleague, or cared for solely by an RN. Collaboration by the team may be assessed on an individual basis.	Descriptors of **unstable or unpredictable**. Indicates clinical instability, **requires care by an experienced RN** and collaboration with the team. Examples: • New condition/onset of an event requiring specialized medication without critical care intervention. • Sudden onset of acute shortness of breath unresolved with intervention, suctioning and airway management. • Patient unstable immediately post-op from major surgery e.g., transplant, chest tube management, CVP, epidural, PCA pump. • Therapeutic Plasma Exchange (TPE) only or combination of hemodialysis and TPE.

Nursing Interventions Descriptors

LEVEL	DESCRIPTION	
Patient Monitoring		
None	Q Hourly Patient's condition stable requiring minimal vital signs and monitoring as per unit policy. May be self-monitored.	
Basic	Q 30 minutes	
Moderate	Q 20 minutes	
Advanced	Q 15 minutes	
Complex	Q5 - 15 minutes	
Very complex	Requires continuous monitoring at a critical care level	
Infection Control		
None	Patient self-care dialysis.	
Basic	Routine precautions (i.e., PPEs worn when direct care is being provided, based on risk assessment.)	
Moderate	Contact precautions. (i.e., PPEs worn on each contact with patient or environment).	
Advanced	Contact and droplet precautions, isolation requirements.	
Complex	Airborne precautions.	
Very complex	All of the above and/or requiring negative pressure room or critical care level.	
Individualized Needs		
None	None	
Basic	Lab studies review Comfort measures Blood glucose monitoring	
Moderate	Hematocrit monitoring Medication review Diabetic teaching	O2 saturation monitoring Incontinence care Dietary support
Advanced	Psychosocial/emotional support Foot assessment Access flow measurement	Booking medical appointments Reviewing in-patient chart and coordinating MARs Changing machine set up
Complex	Organizing travel arrangements Medication reconciliation Coordination of diagnostic studies (drawing bloodwork, ECG, x-ray, ultra-sounds)	
Very complex	Wound assessment and care	

Descriptors of **stable and/or predictable** which indicate nursing interventions that are **appropriate for LPNs** to autonomously complete. If care needs change, the LPN is responsible for identifying a concern to an RN colleague.

Descriptors of **somewhat unstable and unpredictable – increased need for RN collaboration**. Care needs that are appropriate for LPNs to complete with access to RNs as needed for collaboration.

Descriptors of **unstable and/or unpredictable**. Indicates a need for complex management and/or monitoring at a critical care level.

Example: ICU hemodialysis

Appendix II- Vascular Access Care

Cannulation

Cannulation is a learned skill which improves with practice. A vascular access should be matched with the skill level of the cannulator.

LPNs and RNs should self-assess their own cannulation skills (novice, skilled or advanced) and work towards furthering their skill development. Collaborative care planning with the vascular access nurse and nephrologist may be required. The Cannulation Learning Plan is a guide for nurses to self-assess their cannulation skills and, in consultation with a renal educator and/or vascular access nurse, to develop a learning plan to further develop their skills. It is particularly useful for nurses new to hemodialysis.

Best practice should include:

- Identifying accesses that are new or complicated and would be better matched to a skilled or advanced cannulator.
- Asking an advanced cannulator, educator or vascular access nurse for help whenever they have a question or would like assistance.
- Always consulting with an advanced cannulator after one unsuccessful cannulation attempt.

Cannulation

Novice cannulator ⟷ Skilled cannulator ⟷ Advanced cannulator

Vascular Access Continuum

Less complex, stable, vascular access ⟷ Highly complex, unstable vascular access

Vascular Access Descriptors Below

LEVEL	DESCRIPTION
Current Access Type Used in Dialysis	
None	AVF: Arteriovenous fistula as primary access.
Basic	AVG: Arteriovenous graft as primary access.
Moderate	TCC: Tunneled-Cuffed Catheter as primary access, intended for long-term use.
Advanced	Temporary Hemodialysis Catheter intended for short-term use.
Complex	Dual Access: Two types of accesses, where only one is in use and one is being assessed.
Very complex	Dual Access: Two types of access used simultaneously. TCC or Temporary Hemodialysis catheter and AVF or AVG.
Access Complications	
None	No complications or self cannulates.
Basic	Minor interventions required, e.g. repositioning.
Moderate	One of the following challenges during treatment: difficulty needling, access related pain, vessel spasm, poor flow, reversal of lines, TPA administration, redness at the access site, saline flushes.
Advanced	Concluded treatment but with difficulty due to needling, access related pain, positional, vessel spasm, poor flow, intradialytic vigorous flushing of catheter lumens with saline, reversal of lines, TPA administration, redness at the access site, increasing venous pressures, prolonged bleeding intra and/or post at access site.
Complex	Treatment initiated but unable to complete due to vascular access complications.
Very complex	Unable to dialyze due to non-functioning access.

Descriptors of **easy, well-established access** are **appropriate for novice LPN and RN** to autonomously care for. The LPN or RN will **collaborate with the VA nurse as needed** for access complications.

Descriptors of **moderately complicated accesses (including new AVFs/AVGs, or established AVFs/AVGs with one complication)** require an **advanced cannulator with collaboration with the VA nurse as needed** for access complications.

Descriptors of **very complicated accesses (including new AVFs/AVGs with more than one complication)** require an **advanced cannulator** and may indicate a need for a **vascular access care plan** and assessment for dialysis inadequacy.

Examples:

- Unable to complete dialysis run due to vascular access complication
- Requires RN with collaboration from vascular access team
- Temporary femoral line

Appendix III- Collaborative Patient Care

<table>
<tr><td>Collaborative Patient Care</td><td colspan="2">Autonomous LPN or RN practice
Increased need for interdisciplinary collaboration
Interdisciplinary team
  </td></tr>
<tr><td>Patient Care Continuum</td><td>Less complex, stable, more predictable</td><td>High complexity, unstable, unpredictable
  </td></tr>
<tr><td>Independent Function Descriptors Below

<table><tr><th>LEVEL</th><th>DESCRIPTION</th></tr><tr><td>None</td><td>Does not require any assistance.</td></tr><tr><td>Basic</td><td>Mobilizes use walking aide or prosthesis without assistance. Good manual dexterity, strength, vision and hearing.</td></tr><tr><td>Moderate</td><td>Standby assistance to weight bear, transfer or reposition. Has decreased manual dexterity and/or strength. Communication challenges requiring unique interventions.</td></tr><tr><td>Advanced</td><td>One person assist to transfer or reposition. Significantly reduced manual dexterity or strength.</td></tr><tr><td>Complex</td><td>Two or more persons or mechanical lift to transfer or reposition.</td></tr><tr><td>Very complex</td><td>Patient requiring full care due to complete dependency.</td></tr></table></td><td>Patient care needs with a descriptor of independent function are appropriate for LPNs and RNs to autonomously care for dialysis-related care needs, with assistance from the team including health care aides (HCAs) and/or renal technicians (RTs) for non-dialysis-related care needs. These patients may benefit from collaboration for Chronic Disease Management care planning.</td><td>Patient care needs with a descriptor of very complex indicates a need for complex case management. Patients are appropriate for LPNs and RNs to autonomously care for dialysis-related care needs, with assistance from the team including health care aides (HCAs) and/or renal technicians (RTs). These patients will benefit from collaboration for Chronic Disease Management care planning, involving the interdisciplinary team.</td></tr>
</table>

Psychosocial Emotional Descriptors Below

LEVEL	DESCRIPTION
None	During treatment presents as emotionally well-adjusted. Accepting of disease process and treatment options. Independently managing care and treatment.
Basic	During treatment presents as emotionally well-adjusted. Accepting of disease process and treatment options. Managing disease process and treatment with assistance. May have mild anxiety or short-term depressive episodes that are self-managed.
Moderate	During treatment presents as anxious, depressed, non-compliant or aggressive behaviour interfering with ability to manage disease process and treatment. Requires professional intervention to manage.
Advanced	During treatment presents as having high level of anxiety, depression, non-compliance or aggressive behaviour placing limitations on ability to cope with disease and follow treatment requirements.
Complex	During treatment presents as confused, dementia, substance abuse, serious psychosis, harmful to self or others. Severely limited ability to understand disease process and treatment.
Very complex	Severe dementia/psychosis. Unable to understand disease process and treatment. Unable to dialyze without medical and/or physical restraint.

Descriptors of **stable and/or predictable** - psychosocial and emotional factors which are **appropriate for LPNs and RNs** to autonomously care for **with assistance from the team** including HCAs and/or RTs as required.

Descriptor of **increased need for interdisciplinary team collaboration** – psychosocial and emotional factors. If care needs change, the **LPN and RN are responsible for identifying a concern to the interdisciplinary team**, with assistance from HCAs and RTs as required.

Descriptors of **complex or very complex** – indicates psychosocial and emotional instability and a need for complex case management, and are **appropriate for LPNs and RNs** to autonomously care for dialysis-related care needs, **with a care plan established and monitored collaboratively with assistance from the team** including HCAs and/or RTs. These patients **require interdisciplinary team collaboration and community care partnership** as needed. For example, when there is:

- Verbally or physically aggressive behaviours and no plan in place
- Impaired substance use that affects treatment
- Serious psychosis, harmful to self and others
- Serious unresolved psychosocial problems affecting their behaviours on dialysis

Appendix IV: BC Renal Acuity Scale

The primary purpose of the BC Renal acuity scale is to assess the stability of patients during a hemodialysis run. Secondarily, the scale provides information (albeit limited) about overall care requirements. At a system level, the acuity scale provides a demonstrable, reliable, repeated measure of patient profiles of stability while on HD, across HD units.

It is a tool for:

- Understanding and tracking changes in the HD population across units and over time. This supports BC Renal's accountability to the Ministry of Health in the use of HD resources.
- Informing funding allocations within the BC Renal facility-based funding model (i.e., distribution of resources across HD units). The scale helps us understand the ratio of patients in hemodialysis units according to level of stability while on dialysis. This ratio is then used to develop an average or blended funding model rate for (1) incentre units and (2) community units. By measuring changes to stability over time, BC Renal can continue to ensure adequate funding for our patient population. At an HA/HD facility level, the BC Renal acuity scale helps to:
  - Identify in-centre patients who may be candidates for community dialysis units
  - Measure changes in the profile of patients on a unit over time
  - Analyze patient care processes, workload and resource requirements relative to the profile of patients on a unit
  - Stratify patients with low vs. high care needs (may be useful in assigning staff)

Please see the guidelines and resource, BC Renal Acuity Scale & BC's Hemodialysis Units for more information.