PROVINCIAL STANDARDS & GUIDELINES

BCRenal
Provincial Health Services Authority

# Best Practices: Peritoneal Dialysis Programs

Created: 2018 | Updated 2025
Approved by the BC Renal Peritoneal Dialysis Committee

Provincial Health Services Authority · 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

**LAND ACKNOWLEDGEMENT**

BC Renal plans and monitors the delivery of kidney care services to a diverse population living in various settings and communities across BC. As a provincial network, we operate on the unceded traditional and ancestral land of many Indigenous peoples, including First Nation, Métis and Inuit people. Our main office is located on the traditional and ancestral territories of the Coast Salish peoples – xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish), and Sə̓l̓ílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations, and the Métis Chartered Community of the Lower Mainland Region.

We acknowledge the health inequities caused by the current and historical colonization of this territory, and we humbly listen and learn from the resilience and strength of Indigenous peoples. We will endeavor to provide culturally safe care and practice throughout our work.

**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 provincial guidelines/resources, refer to bcrenal.ca/health-info.**

BCRenal
Provincial Health Services Authority

**BC Renal**
200-1333 West Broadway
Vancouver, BC
V6H 4C1

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

Facebook.com/BCRenal
Youtube.com/BCRenal
Linkedin.com/company/bc-renal

# 1.0 Background and purpose

**Purpose and goals**

The purpose of this document is to describe PD practices to promote standardized, consistent, and integrated delivery of PD services throughout the province. The development of this document utilized PD literature in combination with the expertise and experience of PD programs in British Columbia.

**Best practice guidelines:**

- Incorporate evidence-based information and current practice to aid in clinical decision making specific to PD
- Explore relationships between practice patterns and patient outcomes to drive improvement in care
- Focus on accountability to patients, infrastructure research, innovation, and alignment of funding to quality patient centered care
- Develop standardized tools and practices that encourage self-management and jointly establish goals of care
- Establish provincial standards and accountabilities to streamline the transition process and access for those wanting PD

Peritoneal dialysis (PD) is an option for renal replacement therapy in patients with end stage kidney disease. It is frequently selected by patients as their preferred initial mode of therapy and is an option for patients transitioning from hemodialysis (HD) and after transplant failure. PD is utilized as the preferred dialysis modality for pediatric patients as a bridge treatment to transplant. PD is an effective home-based therapy that provides flexibility and many quality-of-life advantages with equitable patient outcomes comparable to HD. PD eliminates the need for relocation to meet treatment needs, while providing much lower dialysis costs[19, 30]. Peritoneal dialysis is the preferred type of dialysis for those with vascular access issues, and progressive cardiorenal syndrome. The key benefits of PD are preservation of residual renal function[27], lower hospitalization[23] and lower access intervention rates[22] when compared to hemodialysis.

Peritoneal dialysis has been recognized as a modality option which supports:

- Self-management home therapy
- Integration of dialysis with work, school, hobbies, and social family activities
- Flexible daily regimen
- Patient autonomy
- Flexibility in diet fluid intake
- Ability to travel due to portability of equipment
- Potential reduction in some medications

The BC Ministry of Health endorses a strong home therapy mandate with a provincial target of over 30% peritoneal and home hemodialysis combined rate since 2010. BC Renal supports provincial strategies to maximize the use of home dialysis therapies.

British Columbia has adopted a "PD first" approach that advocates PD as the initial dialysis modality of choice. Current patient numbers are available on the BC Renal website (BCRenal.ca) Care for patients is provided in 13 PD programs across five health authorities in BC.

## 2.0 Target population and goals of PD programs

The target population for peritoneal dialysis are those patients who have:

- Been identified as requiring dialysis
- L+ BC recommendation for PD catheter placement is when the GFR is between 10–12ml/min/1.73m$^2$
- Demonstrated an interest in peritoneal dialysis as a home option
- Been assessed as being suitable candidates for home therapy PD

PD programs work collaboratively with patients to provide home evidence-based, multidisciplinary PD care. A successful PD program is patient-centered to:

- Support and educate patient and family to perform PD independently, effectively and safely in the home environment
- Maximize confidence and abilities of patients and families to adjust to and manage their health and peritoneal dialysis therapy
- Provide ongoing monitoring, support and follow up of patients to assist in early identification and treatment of PD-related problems
- Support planning and preparation for transition to other renal-related modalities

## 3.0 Requirements for a successful PD program

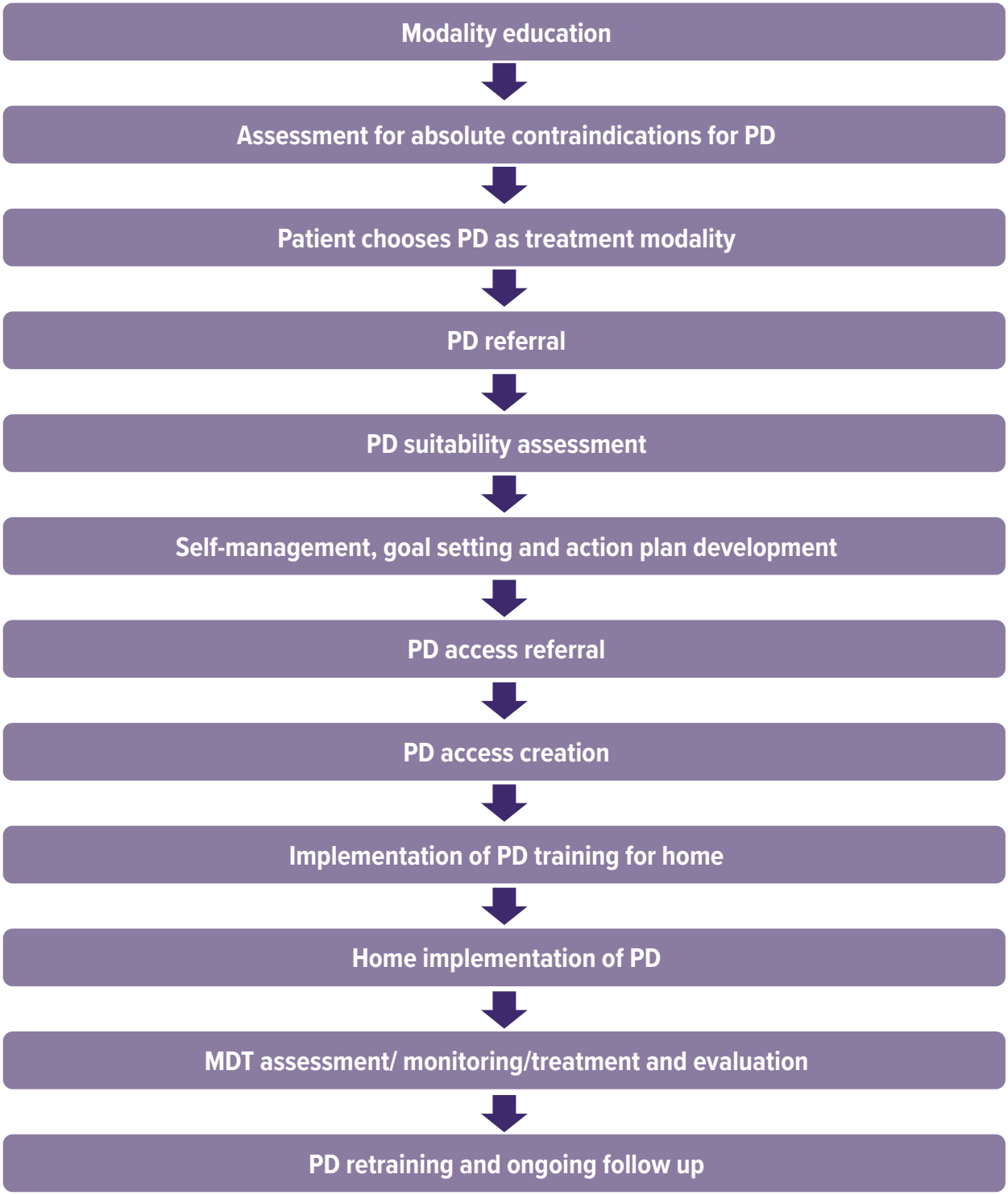
The success of a PD program is dependent on the development of:

- A robust and effective CKD education program that offers and encourages PD as a therapy option
- A standardized assessment process to identify and triage appropriate patients to PD
- Transition guidelines designed to support the care and preparation of patients to PD
- Multidisciplinary patient centered support systems inclusive of, but not limited to: patients and families, physicians, nursing, social work, dietitians, pharmacists, occupational therapy, surgery, radiology, comorbidity clinics (diabetic, cardiology, hypertension), community support services (PDA, LTC, assisted living)
- Access to timely PD catheter procedures
- A standardized patient training program incorporating adult learning principles
- Clinical practice based on current international standards
- Continuous quality improvement work to monitor a variety of domains at a program, health authority and provincial level
- Structured training and continuing education for members of the multidisciplinary PD clinical team

## 4.0 PD milestones and patient flow algorithm

The major milestones and associated timelines for patients transitioning to peritoneal dialysis are outlined in Figure 1.

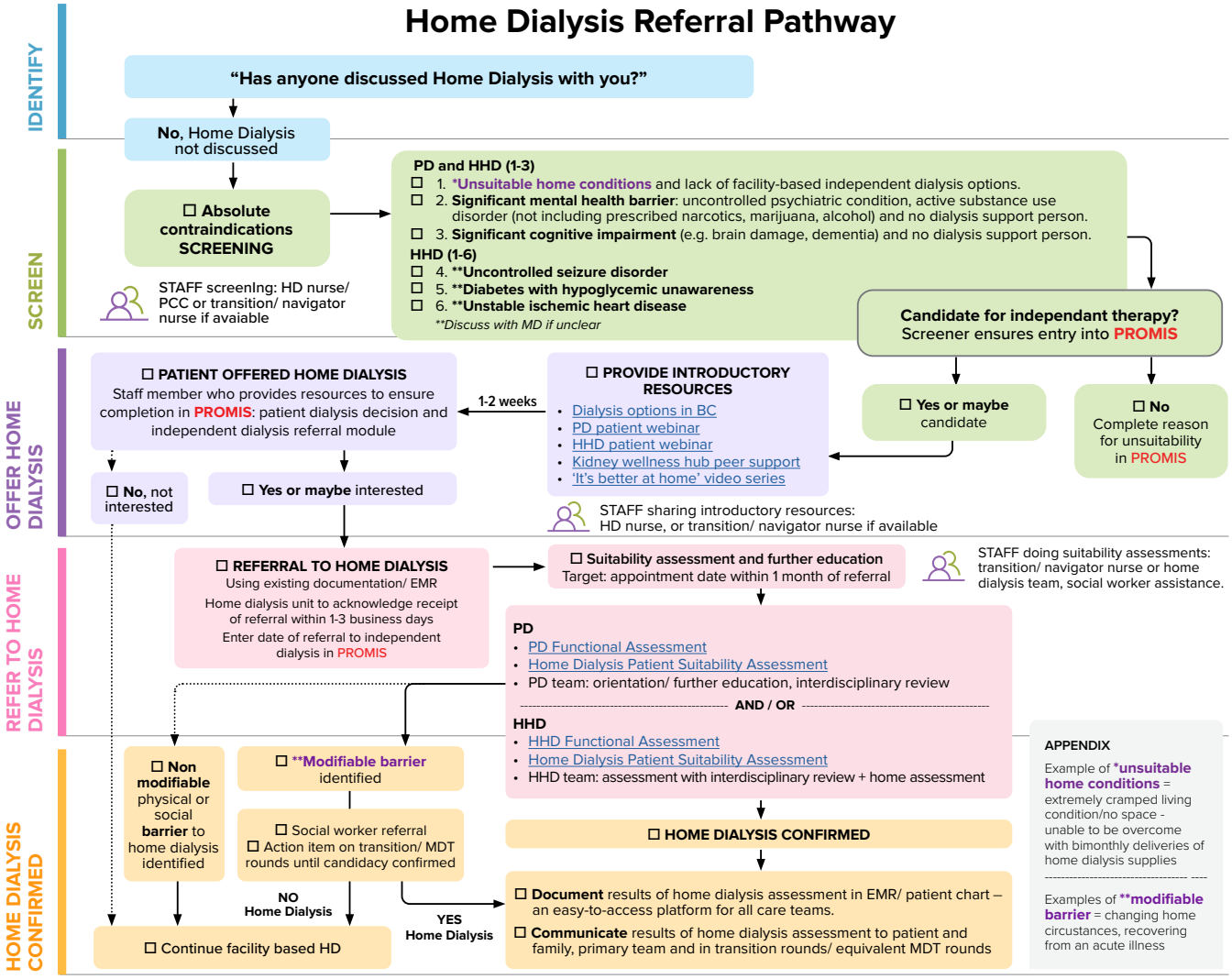
**Figure 1. PD Patient Flow Algorithm**



## 4.1 Home dialysis referral pathway

The BC Renal program aims to prioritize home-based therapies when able. The major milestones associated with identifying, screening, and referring patients to peritoneal dialysis are outlined in Figure 2.

**Figure 2. Home Dialysis Referral Pathway**



# 5.0 Transition to PD

## 5.1 Patient transition: adult and pediatric

Transitions are common for patients with kidney failure. Patients can change from one treatment modality to another, whether by choice or necessity. This requires the healthcare team to anticipate and prepare patients for these transitions. The transition from one renal replacement therapy (RRT) can appear routine to providers and healthcare team members, however, patients often express that they feel insecure and vulnerable when they need to make a change[26].

Transitions to PD can follow an urgent/ acute episode of kidney failure, from kidney care clinic or from another modality such as transplant or hemodialysis. Living with kidney disease can be challenging and affect the mental health of patients and their loved ones in different ways. Responsibilities for a safe and successful transition to and from PD fall to both the multidisciplinary renal health care team and the patient.

Successful transitions to PD are dependent on:

- Identification of the various phases of transition experienced by the patient starting PD
- Identification of roles and responsibilities of the multidisciplinary PD team and patient during key phases of transition
- Clear communication between all team members and patient and family
- Provision of consistent standardized information and practices which focuses on patient-centered care, education, goal setting, care planning and self-management
- Supporting patients' mental health, in addition to physical health, during transitions in care
- View additional resources at BCRenal.ca > Health Info > Managing My Care > Mental Health

See appendices:

- Appendix A: Transitioning to Peritoneal Dialysis – Patient Resource Tool Kit
- Appendix B: Transitioning to Peritoneal Dialysis – Patient Guide
- Appendix C: Transitioning to Peritoneal Dialysis – Care Team Guide

**Pediatric transitions**

Transition phases for the pediatric patient, while like those of the adult population, are also inclusive of:

- Phases of growth and development
- Transition from pediatric to adult renal care programs

Transfer to adult care occurs at the end of a transition process that is individualized for each patient considering all aspects of growth and development. The transition process is multifaceted in nature, involving preparation of the adolescent/young adult and the receiving adult PD program. Development of skills focusing on self-management and assertion of

autonomy begins in the early adolescent years for the patient on PD. Open communication with sharing of skills and information between the pediatric and adult nephrology provider is imperative for a successful transition as is the development of support structures and services for both programs. The International Society of Nephrology and the International Pediatric Nephrology Association have developed recommendations for clinical practice for transitions.

The consensus statement can be found at: Doi.org/10.1038/ki.2011.209

Additional strategies that contribute to successful transitioning to adult care for patients/families and health professionals can be found at: BCchildrens.ca/health-information/transition-adult-care

## 5.2 Patient assessment for PD suitability and referral

As part of the Home Dialysis Referral Pathway (see Figure 2), patients are approached about their interest in home-based dialysis modalities. The referring physician (or HD nurse, PCC, transition/navigator nurse if available) may screen for absolute contraindications (see Figure 3). The patient's candidacy for independent therapy is entered into PROMIS for documentation purposes. The patient is then provided with introductory resources and is offered to proceed with a home dialysis assessment 1–2 weeks later.

The patient is then referred to home dialysis and a suitability assessment is conducted by the PD team. This is an integrated assessment incorporating the perspectives of all PD team members: physician, RN, dietitian, social worker, and pharmacist.

Patients are assessed in the following domains:

- Physical
- Cognitive
- Functional
- Comprehension

See appendix:

– Appendix D: Home Therapy Patient Assessment and Home Therapy Functional Assessment

The PD suitability assessment includes identification of:

- Potential modifiable and non-modifiable physical or social barriers to PD
- Appropriate PD modality: CAPD, APD, PD
- Location for PD to be performed: home, assisted living, long-term care
- PD placement location: referral for catheter insertion
- Patient's ability and readiness to learn
- Individualized training plan inclusive of learning objectives, content, teaching methods and aids, and evaluation phases
- Training schedule

If a modifiable barrier is identified, a social worker referral should be placed. This should become an action item for transition/multidisciplinary rounds until PD candidacy can be confirmed. Some examples of modifiable barriers include:

- Limited mobility or manual dexterity, limited use of hands
- Poor vision
- Obesity (may be candidate for pre-sternal catheter)
- Multiple previous abdominal surgeries
- Colostomy (may be candidate for pre-sternal catheter)
- Active chemical dependency
- Psycho-emotional capacity (e.g., lack of judgement, cognitive decline, issues with caregiver being unable to take on more)

If a non-modifiable barrier is identified, the patient is not eligible for PD and this must be documented in the patient chart and communicated to the patient, family, and primary team.

See appendix:

– Appendix D: Home Therapy Patient Assessment and Home Therapy Functional Assessment

**Figure 3. Contraindications to PD**

| Absolute contraindications to PD |
|---|
| 1. Unsuitable home conditions and lack of facility-based independent dialysis options.<br>2. Significant mental health barrier: uncontrolled psychiatric condition, active substance use disorder (not including prescribed narcotics, marijuana, alcohol) and no dialysis support person.<br>3. Significant cognitive impairment (e.g. brain damage, dementia) and no dialysis support person. HHD (1–6)<br>4. Uncontrolled seizure disorder<br>5. Diabetes with hypoglycemic unawareness<br>6. Unstable ischemic heart disease |
| **Relative medical contraindication to PD** |
| New intra-abdominal foreign bodies (abdominal vascular prosthesis, recent ventricular peritoneal shunt) |
| Intolerance to PD volumes necessary to achieve adequate PD dose |
| Inflammatory or ischemic bowel disease |
| Severe malnutrition |
| Frequent episodes of diverticulitis |
| **Social contraindications for PD** |
| Unmanaged active psychiatric disorders and social problems |
| Patient lives in a residence that does not permit PD |
| Patient's spouse or family is not supportive of PD in the home |
| Patient's residence has insufficient storage space for PD supplies and equipment |

# 6.0 PD modality options

## 6.1 CAPD, APD, IPD

Prescribing peritoneal dialysis begins with the identification of a PD modality. Both continuous ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis (APD) are available options in British Columbia. The decision of PD modality choice is determined by the patient and family. Most patients start on CAPD and transition to APD at a later date if deemed medically appropriate and if desired by the patient. APD is the preferred PD modality for pediatric patients.

Evidence to date suggests that the choice of PD modality should primarily be based on patient preference while providing a medically-optimal PD prescription. In some situations, medical suitability may override preference, but in all other situations the team will try to respect the patient's preference. Patient preferences based on lifestyle, employment, home environment, family and social support, and the ability to perform PD procedures should be considered. Research indicates that there is no significant difference between PD modalities for outcomes related to health, quality of life, mortality, preservation of renal function, technique failure, adverse events, risk of peritonitis, adequacy outcomes, nutritional status, and anemia[8, 31]. APD has been associated with lower risk of transfer to HD during renal replacement. Earlier data suggested that APD may have a higher survival advantage over CAPD in high transporters; however, recent data suggest that the peritoneal protein clearance and not the peritoneal membrane transport status may predict survival outcomes[8].

**Intermittent peritoneal dialysis**

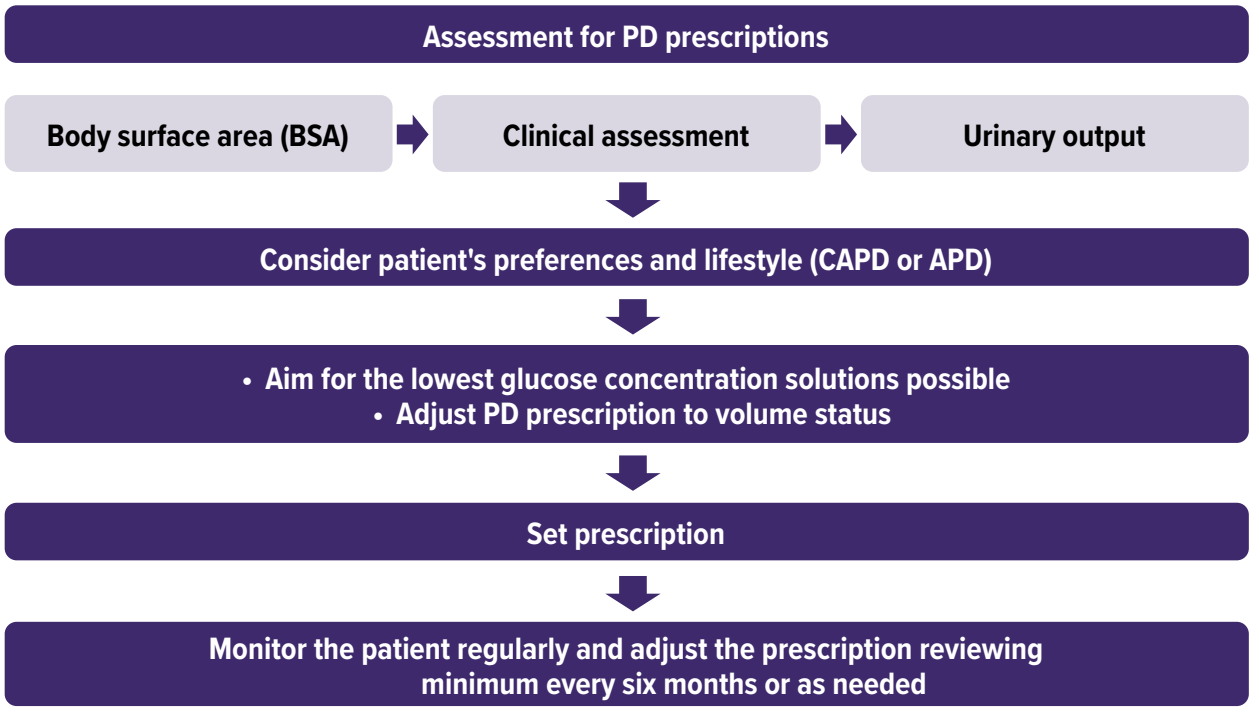
Intermittent peritoneal dialysis (IPD) offered daily, or every other day, is available in some programs as:

- A bridge treatment between catheter insertion and commencement of CAPD or APD if training is delayed
- Break in procedure for 1 week prior to PD training
- Urgent start treatment for the end stage renal disease patient who does not have an access in place for dialysis
- IPD is performed for the pediatric in-patient requiring acute PD for volume control
- Temporary treatment for PD-related complications (i.e. leaks)

**Prescription management process**

The primary goal of PD prescription management, regardless of modality, is to optimize patient outcomes and quality of life[32]. See Figure 3.

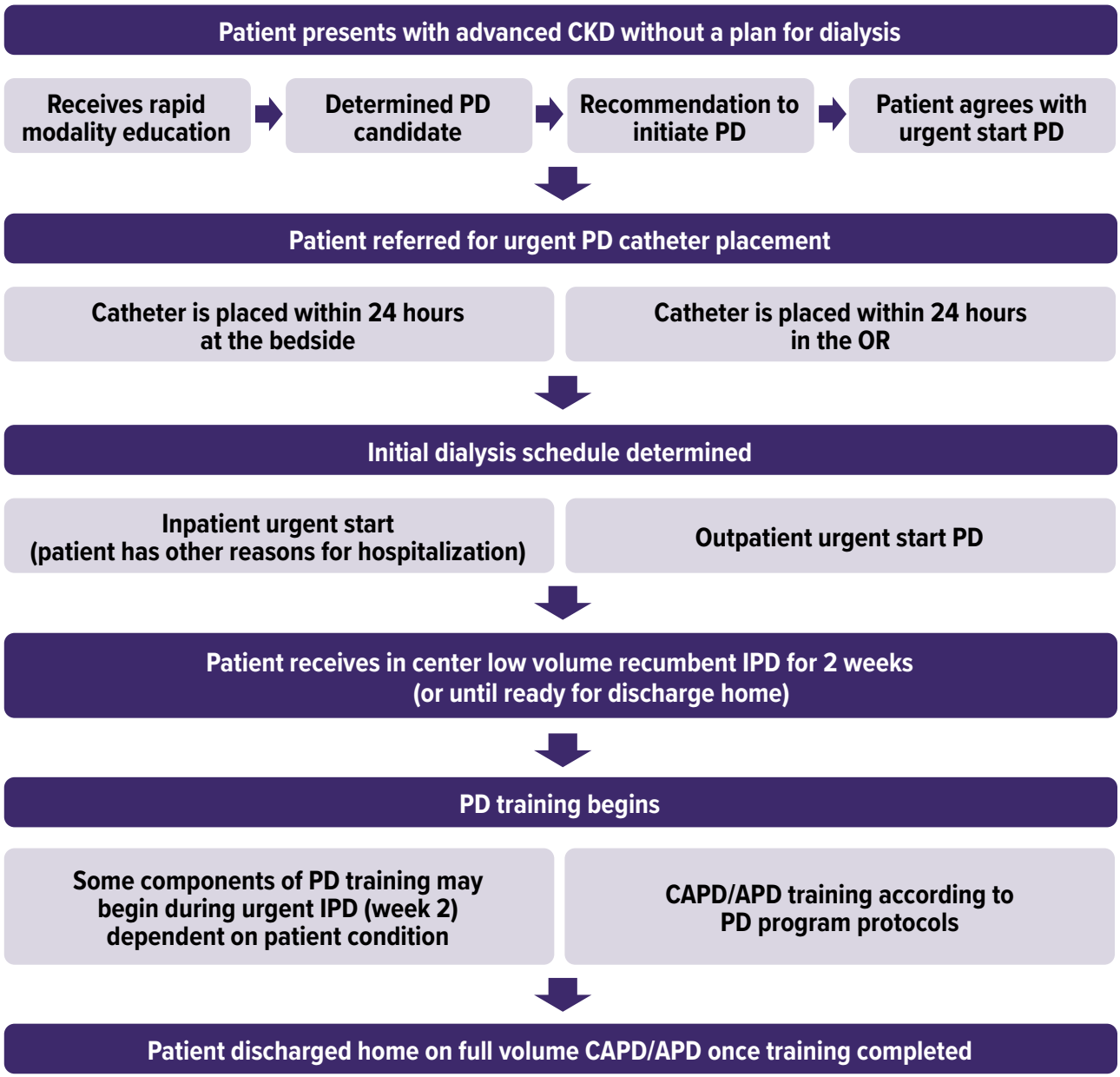
**Figure 4. Assessment for PD Prescriptions**



## 6.2 Acute PD

Urgent start PD is defined as initiation of PD in the unplanned incident end stage renal disease patient before the traditional waiting period of two or more weeks after PD catheter placement. Research indicates that PD is a viable option for the late presenting patient with advanced kidney disease requiring urgent dialysis. Figure 5 identifies the clinical pathway for urgent start PD.

**Figure 5. Urgent Start Clinical Pathway**



**Patients suitable for urgent/acute PD**

- Advanced CKD without a plan for dialysis
- Patients who choose home dialysis as a long-term modality option but do not have an access in place
- Volume overload with cardiovascular compromise
- Acute kidney injury (AKI)
- Problematic vascular access
- Hemodynamically unstable
- Elderly with complex comorbidities

**Patients requiring special consideration for urgent/acute PD**

- Patients requiring hernia repair
- Active intra-abdominal infection (i.e. acute diverticulitis)
- Recent abdominal surgery (within the past 6 weeks)
- Recent cardiovascular thrombotic event requiring ongoing anti-platelet therapy or anti-coagulation (that cannot be safely interrupted for PD catheter insertion)

**Advantages of urgent start PD**

- Avoidance of temporary vascular catheters
- Requires a single procedure for both urgent and long-term access
- Provides the patient with the lifestyle opportunities of home dialysis
- Allows for a gentle, incremental dialysis initiation
- Technically simpler than HD or Continuous Renal Replacement Therapy (CRRT)
- Can be initiated quickly
- More cost effective
- Less complex equipment
- Avoids vascular problems: infection, hemorrhage, thrombosis, embolism, stenosis
- Provides time to achieve fluid electrolyte balance and toxin removal before training
- Opportunity to meet and develop relationships with the PD team before self-managing
- Facilitates patient/family learning by observing staff performing PD therapy
- Does not require anticoagulation
- Reduced risk of acquiring Hepatitis B and C
- Less hypotensive episodes
- Helps preserve residual kidney function longer than conventional HD
- Facilitates discharge from hospital

**Urgent start PD program requirements**

The success of an urgent start PD program is dependent on infrastructure requirements such as:

- Objective method of patient selection
- Urgent PD catheter placement
- Nursing support (training and staffing)
- Hospital and dialysis unit administrative support
- Developed policies and procedures
- Space for IPD
- Clinical team flexibility for rapid orientation to kidney disease and peritoneal dialysis
- Engaged patient and family

## 6.3 Provincial PD Assist program

Peritoneal Dialysis Assist (PDA) is available in all health authorities for PD patients who meet eligibility criteria. PDA is defined as the provision of assigned PD cycler tasks in the home setting utilizing trained caregivers (CG). Caregivers are provided training and are given responsibilities for each visit which include completing specifically assigned PDA tasks inclusive of cycler machine set up and dismantling. PDA can be provided on a long-term basis or as a respite/ short-term service in patients with temporary changes in their ability to perform PD[33].

Patient eligibility for PDA is assessed by the nephrologist, PD nurse and PD social worker. Input from other members of the multidisciplinary team such as occupational therapy may be included as deemed appropriate.

The PD client and/or support must:

- Complete PD training
- Be able to perform the procedures related to connecting and disconnecting from the cycler and associated troubleshooting of cycler complications that may occur during the therapy
- Be able to manage all non-cycler aspects of their PD care inclusive of but not limited to fluid management, access care, effluent assessment, supply ordering
- Be able to contact the PD program to communicate any identified concerns or problems associated with their health status or PD therapy
- Be unable to perform the cycler set up and dismantling procedure due to physical, cognitive, psychological and or social reasons
- See Appendix E: PD Assist Eligibility Criteria

## 6.4 PD in long-term care facilities

Some PD patients may require continuous, skilled nursing care available in long-term care (LTC) facilities. PD in a long-term care facility is currently available in Vancouver Coastal Health Authority and Fraser Health Authority. PD education content for long-term care facility staff is similar to PD patient and family education. (PD procedures, fluid balance, infectious and non-infectious complication management) Ongoing follow up for the patient receiving chronic PD in the long-term care facility is provided by the PD program. Continuing education and support are also provided to the facility staff by the PD program.

**Advantages of PD in LTC**

- Permits patients to remain on PD in their home environment
- Prevents costly and inconvenient transportation to and from HD three times/week
- APD at night allows the patient to remain social with other residents and participate in activities and rehab during the day

**Advantages of PD in LTC**

- Identify potential LTC facilities within each HA to proactively provide PD
- Ensure that the location of the facility meets the population need
- Determine number of patients for sustainability of program
- Determine number of beds required for short/long term needs
- Requires adequate storage to ensure adequate capacity for supplies

- Determine benefits of union vs non-union environment
- Train the trainer to implement a 'train the trainer' approach for staff training
- Clarify roles and responsibilities of the PD program and the LTC facility
  - Supply ordering
  - Billing of supplies
  - Staff training
  - Patient follow up
  - CQI initiatives
  - Communication system

## 6.5 Pediatric PD support services

PD nursing support service is accessible to patients between 0–19 years of age based on eligibility criteria through the Ministry of Children and Family Development for 12–24 hours/week. Nursing services covering all aspects of PD care inclusive of CAPD and APD treatment is available to any pediatric patient/ family living within the province for respite care.

## 7.0 PD catheter implantation

Reliable peritoneal dialysis access is essential to high quality patient outcomes. Referrals for PD catheter should be considered when the glomerular filtration rate (GFR) is approximately 15 mL/min/1.73m$^2$ [23] while factoring local PD program catheter placement options, timelines and patient needs. Minimal expectation is that surgical catheter insertion should be performed at least 2 weeks before starting peritoneal dialysis[3, 34]. The access should be placed early to ensure the patient can train for peritoneal dialysis while residual renal function is adequate to avoid the need for urgent hemodialysis and a central venous catheter insertion.

Repeated hospitalizations for procedures related to the urgent need for dialysis or potential uremic complications because of this delay should be avoided[23].

Randomized control trials do not exist to support one method of implantation[3, 34]. The method of catheter insertion is therefore determined by a variety of factors inclusive of patient and program circumstances. It is suggested that positive clinical outcomes for PD catheter insertion are dependent on appropriate patient selection, preparation, perioperative care and training. The 2019 ISPD Guidelines on Creating and Maintaining Optimal Peritoneal Dialysis Access in the Adult Patient recommend that local expertise at individual centers should govern the choice of method of PD catheter insertion.

In BC, chronic PD catheters are inserted in three ways:

a) As a surgical procedure in the operating room performed by a vascular or general surgeon. May be done using an open incision and surgical dissection (laparotomy) or a laparoscopic technique. Both are done as same day or short stay (a 1- to 2-day postoperative stay) procedures and under a general anesthetic. The need for surgical method involving direct vision with open insertion is determined by patient characteristics, such as history of significant abdominal surgeries, the need for hernia repairs, vascular access failure or severe liver disease[22]. In some parts of the province, surgical catheter insertion is the only available option for PD patients. Surgical PD catheter insertions may include buried catheter and pre sternal implantation as determined appropriate for the patient and the program.

See Appendix G: Provincial Guideline: Indications and Urgency Criteria for Surgical Peritoneal Dialysis Catheter Access: Procedures on Adults

b) As a "bedside" (non-surgical) procedure in a non-surgical setting performed by a nephrologist who has had specialized training in this technique. This is completed as an outpatient procedure and may involve an overnight stay. Procedures are done using a local anesthetic +/- an anti-anxiety medication, narcotics, or conscious sedation.

   Pediatric nephrologists use a range of different PD catheter sizes. If an adult patient requires a smaller PD catheter, communication with the pediatric nephrology program can be considered

   See BC Renal website for *Bedside Catheter Insertion* guideline: BCRenal.ca > Health Professionals > Clinical Resources > Peritoneal Dialysis

c) As a radiological procedure in a fluoroscopic radiology setting performed by an interventional radiologist. Regardless of the method of insertion, the exit site should be allowed to heal for approximately 2–3 weeks before commencing PD exchanges. Special considerations of using small volumes with the patient in the supine position should be implemented if the catheter is required immediately following insertion.

## 8.0 Patient goal setting, training/ education and treatment planning

In British Columbia, initial patient PD training and ongoing education will be provided by a PD-trained nurse with experience in teaching and learning. Ideally, the timing of PD teaching will be coordinated with the healing of the exit site post catheter insertion. The International Society for Peritoneal Dialysis (ISPD) recommends that all nurses new to nephrology should receive at least 12 weeks of experience within a PD unit with observation of procedures, patient education, and clinical care. PD nurse trainers should be supported by continued education to ensure skills remain up-to-date and they continue to have the ability to apply the principles of adult learning.

Patient training for PD is an essential activity in PD programs involving the multidisciplinary team adopting evidence-based practice with PD guidelines, protocols, and care standards.

Individualizing patient training involves:

- Family members and or significant other may be included in the training to provide support for the patient
- Modifying the length of the training sessions to accommodate the patient's ability to concentrate and assimilate information without feeling overwhelmed
- Evaluating the patient's progress and readiness to assume responsibility for home PD activities

The success of a PD training program is dependent on:

- Multidisciplinary team approach
- A dialysis modality education program and pre
- Training assessment that prepares patients for PD training
- Supportive counseling and effective communication that enhances patient acceptance of and compliance with PD treatment

- A focus on learning objectives and training tailored to the unique needs of each patient
- Incorporation of goal setting and adult learning principles
- Prompt management of dialysis related complications
- Consistent monitoring of PD training
- Continuous patient education and retraining of patients when necessary

Goal setting and treatment planning are important components of self-management in PD with the patient in the center of the collaborative process. Important concepts to teach patients in relation to goal setting/ treatment planning/self-management include:

- Strategies to incorporate goal setting into treatment planning
- Stages of change and the relationship to setting and achieving goals
- Setting SMART goals and action plans
- Available resources to support self-management and goal setting

PD training should be developed to meet the patient's individual needs by implementing a multifaceted approach with content based on learning principles. Learners:

- Need to be free to direct themselves about what to learn.
- Appreciate an educational program that is organized and has clearly defined elements and goals.
- Learn better when convinced of the need for knowing the information
- Focus on the aspects of a lesson most useful to them in their everyday lives
- Educators must then relate theories and concepts which match the learner's own experience and knowledge of the topic
- Need to be shown respect and treated as equals

## 8.1 PD teaching support and tools

Teaching tools and strategies should be incorporated into the PD training plan to meet specific individual learning styles:

- Written materials, manuals, printed handouts, posters
- Demonstrations incorporating a hands-on approach
- Online eLearning PD modules: BCRenal.ca > Health Professionals > Clinical Resources > Peritoneal Dialysis
- Vdeos, audio recordings of procedures
- Role playing
- Situational scenarios
- PowerPoint presentations
- Abdomen practice mannequins: dummy tummy
- Discussion, follow up phone contact, web chats
- Peer support as deemed appropriate

## 8.2 Training location

The key to a suitable teaching environment is one that is physically and psychologically comfortable for the learner. The dedicated space should be well lit, free from minimal external distractions, large enough for supplies, teaching aids, patient, family and PD nurse. Appropriate locations for training may take place in:

- PD clinic
- Patient's home
- Hospital room
- Any location set up for specific dedicated PD training

## 8.3 Length of training

Preferably a 1:1 nurse to patient approach is utilized for initial training. The same PD nurse should be involved for the duration of training for consistency. A primary care or case management approach should be incorporated post training for patients' ongoing care.

The length of training is based on several factors: patient's attention span, current uremic symptoms, and ability to process information. On average, training for CAPD is usually completed in 4–5 days with an additional 1–2 days for APD training. Research has not demonstrated a correlation between length of training and outcomes therefore it is suggested that training should continue until the PD Nurse determines that the patient can meet the following training objectives:

- Able to safely perform all required procedures
- Recognizes contamination and infection
- Able to identify appropriate responses to specific complications/situations
- Understands when and how to communicate with the PD dialysis clinic

Training sessions should be held on consecutive days with frequent breaks scheduled according to the patients learning style and pace. Minimizing new concepts to no more than 4 new concepts/hour is recommended.

## 8.4 Training content

A teaching plan should include the following:

- Overview of PD
- Aseptic technique, handwashing, masking
- Steps in the exchange procedure
- Emergency measures for contamination
- Exit site care
- Complications of PD
  - Peritonitis
  - Exit site infections
  - Fluid balance
  - Inflow/outflow problems
  - Constipation
  - Fibrin
  - Leaks
  - Pain
- Troubleshooting
- Record keeping
- Supply ordering
- Clinic visits, labs

## 8.5 Follow-up and retraining

Follow up multidisciplinary care is a key requirement of PD care. Clinic visits, telephone contacts, home visits, continuing education, community support and patient recordkeeping assist in the reassessment of patient learning needs and/or teaching.

Ongoing education following initial training may be provided using:

- An individual or group format
- Discussed as part of PD clinic appointment(s)
- During home visits
- During phone, web chat contact

Retraining of PD patients results in potential prevention or reduction of PD associated complications with root cause analysis to prevent recurrence. Periodic review of hand washing technique, steps of an exchange, connection procedures and exit site care helps to identify adherence to protocols while determining if the patient's abilities to perform procedures and

understanding of PD concepts has changed over time.

PD retraining is suggested following:

- Initial training on an annual basis and/or as identified
- Change in dialysis modality
- Equipment changes
- Home setting changes
- Dialysis partner changes
- Change in medical condition
- Infection (peritonitis, exit site, tunnel)
- Prolonged hospitalization
- Any interruption in PD

## 8.6 Home visits

While research is limited in drawing correlations between home visits with clinical outcomes, it is recommended that home visits be scheduled as part of patient care when deemed necessary and possible to achieve. Benefits of home visits provide visualization and insight into the adaptation of PD into the patient's daily life permitting the ability to alter or modify treatment parameters to achieve positive clinical outcomes.

Considerations for home visits include:

- Post lengthy hospitalizations
- Post peritonitis episodes
- Identified changes in patients/family's ability to self-manage, and/or cope with aspects of care
- Evidence of caregiver burn out

# 9.0 PD patient follow up

PD patients require frequent monitoring, assessment, guidance, and support as they dialyze independently at home. Frequency and type of follow up is tailored to the patient's specific needs.

## 9.1 Clinic appointments

Stable adult PD patients are followed at multidisciplinary clinic appointments at a minimum of every 3–4 months. Pediatric patients are seen every 4–6 weeks. Frequency of clinic appointments are determined by the multidisciplinary team based on patient care needs and preferences, ability of patient to self-manage and geographic distance to the clinic. Clinic appointments are a collaborative process. The patient assessment includes but is not limited to:

- Medical
  - Comprehensive physical assessment/change in physical status/ comorbidity and symptom review
    - SOB, Chest pain, muscle cramps, constipation, diarrhea, pruritus, appetite changes, nausea/vomiting, insomnia, restless legs, pain, falls
  - Vital signs
  - PD regimen and current prescription
  - Exit site assessment
  - Catheter function
  - Volume status
  - Peritoneal ultrafiltration, solute transport (Adequacy/PET/ 24-hour urine)
- Peritonitis/exit site and tunnel infections
  - Culture results
- Foot assessment
- Review of recent hospitalizations
- Exercise routine
- Review transplant eligibility and transplant referral status
- Chemistry and hematology review

- Diagnostic testing
- Psychosocial review (patient and family support)
- Nutritional assessment and management
- Medication review
- Patient goal setting
- Learning needs and continuing education
  - when indicated
- PD technique review

## 9.2 Laboratory testing

This is an example of the blood work tests that may be performed for adult and pediatric PD patients. However, the type of test and frequency is at the discretion of each PD program and health authority and individualized to the needs of the patient.

| Adult PD patient | Initiation | Monthly | Every 3 Months | Every 6 Months | Annually |
|---|---|---|---|---|---|
| CBC, Na, K+, Cl-, Ca2+, PO4, HCO3-, BUN, Albumin, RBS, Creatinine | | | | | |
| HbA1C (diabetics), Ferritin, Fe, TIBC, %Sat., PTH | | | | | |
| AST, Alk Phos | | | | | |
| TSH, HbsAg, AntiHBs,AntiHBc, HCV | | | | | |
| Lipid profile | | | | | |
| Transplant antibodies (if applicable) | | | | | |
| Peritoneal equilibration test (PET): performed 4–6 wks. post training and then PRN | | | | | PRN |
| 24 hour adequacy collection: (dialysate and urine) performed 4–6 wks. post training and PRN following | | | | | PRN |
| 24 hour urine collection (if applicable) | | | | | |
| ARO testing | | | | | |

continue...

| Adult PD patient | Initiation | Monthly | Every 3 Months | Every 6 Months | Annually |
|---|---|---|---|---|---|
| Viral Hepatitis B, C, HIV | ■ | | | | ■ |
| TB screening (questionnaire, chest x ray, interferon gamma release assay) | ■ | | | | |
| BUN, Cr, Na, K, Cl, HCO3, Mg, glucose, Ca, iCa PO4, alk phos, albumin, CRP, PTH, CBC, diff, platelets, retic count, Fe, ferritin, transferrin sat | ■ | ■ | | | |
| Uric acid, Vit B12, TSH, total protein, 1,25 dihydroxy, 0,25 hydroxy | | | ■ | | |
| Hep C, Hep A, HSV, CMV, EBV, VZV, MMR, cholesterol (HDL/LDL), triglycerides, selenium, zinc, AST, ALT, GGT, bilirubin (conj/unconj) | | | | ■ | |
| Anti-HBs, HBsAg, Total Anti-HBc, HIV | | | | | ■ |
| Transplant antibodies (if applicable) | | ■ | | | |
| Peritoneal equilibration test (PET): performed when patient reaches optimal fill volume (4–8 weeks post PD initiation) | ■ | | | ■ | |
| 24-hour adequacy collection: (dialysate and urine) with PET and every 6 months following | ■ | | | ■ | |
| 24-hour urine collection (if applicable) performed with PET and every 3 months following | ■ | | ■ | | |

## 10.0 PD guidelines and protocols

Evidence-based practice is a principal element in achieving positive clinical outcomes. The availability of PD guidelines, protocols and standards at a local, provincial, and international level are to be implemented to provide standardized, safe, efficient, cost effective, and quality care for the patient on PD.

## 10.1 International Society for Peritoneal Dialysis (ISPD) Guidelines

The International Society for Peritoneal Dialysis (ISPD) has developed several adult and pediatric guidelines that support best practice in PD. Guidelines can be found on the ISPD website (ispd.org) for the following guidelines:

- Acute Kidney Injury (adult and pediatric)
- Assisted PD
- Cardiovascular and Metabolic guidelines
- Encapsulating peritoneal sclerosis
- Exercise for PD patients
- Infection recommendations (adult and pediatric)
- Peritoneal access
- Solute and fluid removal (suggested to remove)
- Peritoneal Membrane Dysfunction
- Prescribing PD
- PD training
- Assessment of growth and nutritional status in children
- Elective chronic peritoneal dialysis in pediatric patients

## 10.2 Provincial standardized PD protocols

BC standardized protocols and procedures are developed by the BC Renal PD Committee and the PD Nurses group. These procedures are based on current evidence and experience. PD procedures for the adult population can be found at: BCRenal.ca > Health Professionals > Clinical Resources > Peritoneal Dialysis

Pediatric PD procedures can be found at: BCRenal.ca > Health Professionals > Clinical Resources > Peritoneal Dialysis > Pediatric Dialysis

## 10.3 PD provincial and program quality data indicators

Peritoneal dialysis quality indicators in recruitment, retention and safety provide the foundation to identify program quality improvement opportunities and activities.

Clinical practice changes over time. Monitoring, surveillance, and regular analysis of program indicators are an integral part of informing that change. Quality or performance indicators are monitored to guide coordination of care and funding of programs to support the effectiveness and efficiency of overall PD care delivery. These indicators should be reviewed at the program level to meet patient needs, promote excellence in clinical care and develop innovative ways to improve the health care system for patients and providers.

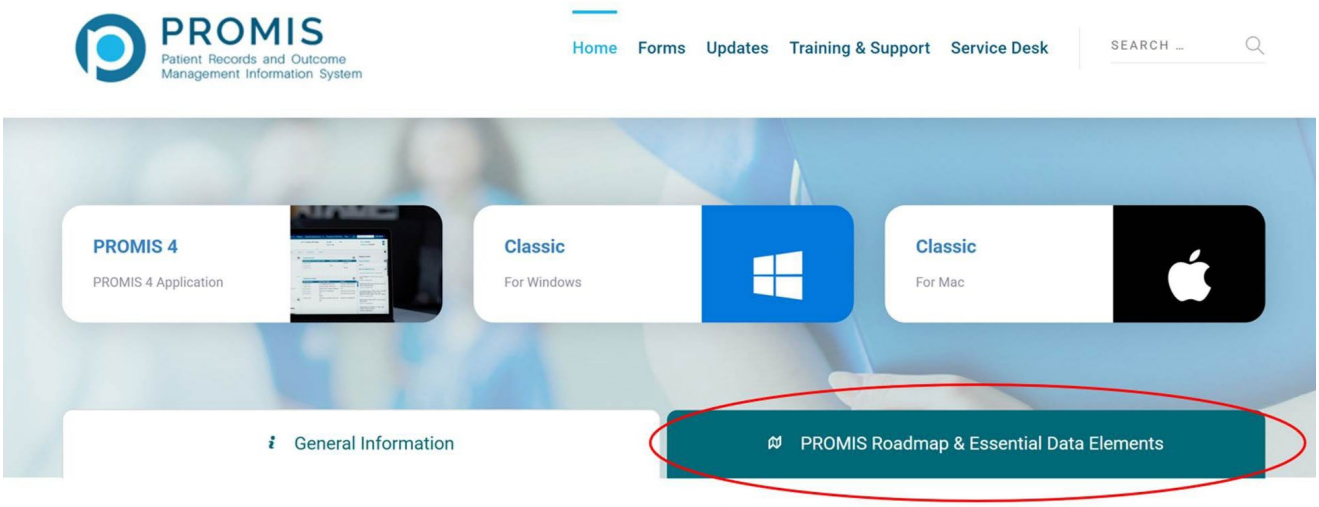
Questions to consider:

- What should we be doing to improve patient care that we are not currently doing?
- How effective is our program?
- How do we compare to other programs?
- What are we doing that is unique that we could share with other programs?
- Do we meet local, national, and international standards?

## 10.3.1 Essential Data Elements

PROMIS contains patient information from the whole of British Columbia that supports clinical, administrative and research purposes. BC Renal led a collaborative process including program, committee, and/or medical leadership from all health authorities, to determine what data are essential. Data may be deemed essential for one or multiple reasons, including for funding purposes, to meet CORR, Ministry of Health, or health authority reporting requirements, to support emergency planning, and to support provincial coordination and care for kidney patients. These data are required for BC Renal to fulfill its mandate, and health authority data entry in PROMIS is supported through the renal funding model. Some of these data may also be captured in health authority information systems; unless there is integration between PROMIS and a health authority system for the data in question, dual entry between PROMIS and health authority systems must continue.

The Essential Data Elements file outlines those essential data elements that are mandatory for completion, and "what, where, why and when". The Essential Data Elements are reviewed for relevance on a regular basis. You can access the current version of the Essential Data Elements on the PROMIS portal at Promis.phc.bc.ca/promis/. Click on the PROMIS Roadmap & Essential Data Elements Tab. Elements are grouped by PROMIS module or information domain and include general renal PROMIS data entry requirements applicable across programs, as well PD specific data elements.



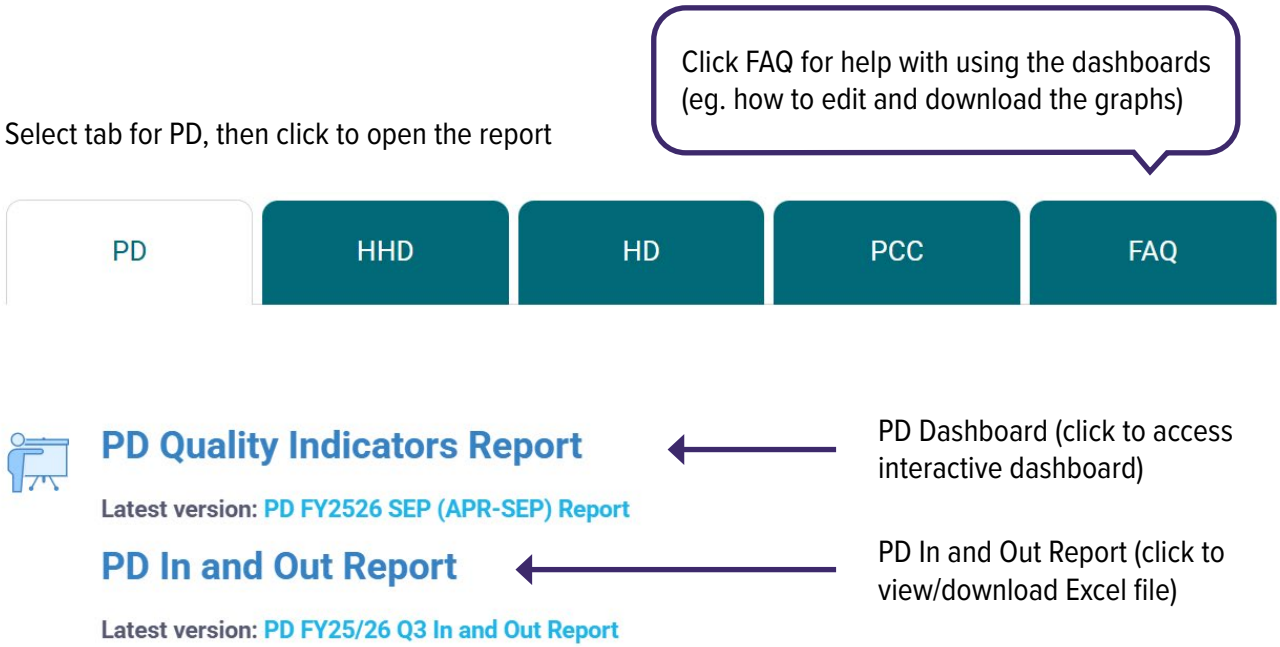
**BCR Interactive PD Dashboard**

The interactive user-friendly PD dashboard reports are created based on key quality indicators over the chosen time by the PD Committee. Depending on patient population size, indicators are reported by health authority or primary management center. The intent is to supplement the patient-level reporting that is available in PROMIS with visual data representation that can be used by the PD programs.

**Note: No PROMIS User account needed! Everyone with the log-in details may access these reports.**

**Where to find the reports:**
Go to PROMIS website > https://promis.phc.bc.ca.
Insert login details.

Navigate to > Updates > Indicators Reports. Then click "Login and view Indicator Reports HERE" Insert 2nd login details.




**How to request data that is not available in the dashboard or PROMIS reports:**

Request For Information (RFI) form requests patient level or summary data for administrative, QI or research.

The RFI can be completed here: Apps-bcr.phsa.ca/jira/servicedesk/customer/portal/101/create/121

If you don't have a JIRA Service Desk account set up yet, please contact PROMIS Support at promis@bcrenal.ca or 1-855-806-8868 or 604 806 8868 to get an account.

You may also visit BCR website summary stats page: BCRenal.ca/about/disease-system-statistics to see which stats are already publicly available.

## 10.3.2 Provincial key quality indicators

Provincial quality indicators are available biannually through the PROMIS Home dialysis dashboard and are used to monitor provincial and health authority trends over time.

A select set of indicators are reported to PHSA Board (peritonitis rate, home dialysis prevalence rate) and the Ministry of Health. These indicators are reviewed by the Provincial PD Committee and each Health Authority. Although these program statistics may not be acted on at the program level, they are necessary to ensure consistency and to monitor trends at a programmatic and provincial level over time.

**Recruitment**

- Number of PD referrals - % PD intake
  - GFR at referral
  - GFR at start of dialysis
- % patients starting PD as preferred modality choice
  - % patients with PD catheter inserted for first time and started PD within 3 months of insertion
  - % patients started PD for the first time
  - % PD starts from KCC
  - % PD starts from facility-based HD
  - Median days from facility-based HD to PD starts
  - % PD starts from transplant

**Retention/maintenance**

- Prevalence: % dialysis patients dialyzing on PD
- Unexpected early attrition:
  - All-cause attrition within first 6 months of PD starts
  - All-cause attrition within first 12 months of PD starts
  - Attrition rate by reason types:
    - All causes
    - Transplant
    - Decreased or dialysis withdrawal
    - Other remaining reasons (including but not limited to: infection, catheter-related problems, inadequate dialysis, catheter unrelated abdominal complications, psychosocial reasons, medical comorbidities, move, lost to follow up, recovered function)
- 1 year PD survival rate (length of time on therapy)
- Catheter insertion
  - Bedside
  - Surgical
- GFR at time of catheter insertion
- Catheter removal rates by reason
  - Infection
  - Catheter-related problems
  - Inadequate dialysis
  - Catheter unrelated abdominal complications
  - Psychosocial
  - Comorbidities
  - Transplant
  - Recovered function
- Hospitalizations
  - Reason
  - Length of hospitalization
  - Modality discharge status

**PD Assist outcomes**

- Number of referrals
- Long term
- Respite
- Number of PD patients using PDA service

- Demographics (compared to provincial PD population):
  - Age
  - Gender
  - Diagnosis
- Length of time on PDA
- Reasons for exiting long-term care PDA:
  - Death
  - Conservative management
  - Technique failure
  - Social reasons
  - Returned to independent home PD
  - Long-term care placement
- Hospitalizations
  - Reason
  - Length of hospitalization
  - Modality discharge status

**Safety**

- Peritonitis rate per PD patient-year
- Infection rates
  - Peritonitis
  - Exit site
  - Tunnel
- Causative organism
- % TB Screening completion rates within 70 days post PD start date.

### 10.3.3 PD program key performance indicators

Program indicators are available on the home dialysis dashboard or may be collected by PD programs. It is recommended that each program review program quality indicators biannually or if a clinical question/ event indicates a review is necessary (i.e.: a sudden change in exit site infections).

These indicators can be utilized to identify quality improvement projects that would guide practice and clinical guidelines in the future. These can be shared with all the programs across the province and at international meetings.

**Recruitment**

- Total number of referrals to PD
- Time from access referral to access creation
- Time from referral for dialysis initiation to initiation of training
- Acute vs. planned start
- Number of patients starting on PD as a preferred modality
- Number of patients transitioning to PD from other modalities
- Total number of PD starts (PD uptake)

**Maintenance/Retention**

- Number of prevalent PD pts
  - Number of patients at home
  - Number of patients on PD in long term care
  - Number of patients receiving PD Assist
- Number of patients meeting ISPD guideline targets
  - Solute and fluid removal
  - Anemia management
  - Bone mineral metabolism
- Hospitalization rates and reasons
- Temporary transfer to HD - reasons and time
- Quality of life
  - % completion rate of Edmonton Symptom Assessment system score in 6 months
- Unexpected early attrition
  - PD exits at 6 months post commencement of PD therapy
  - PD exits at 1 year post commencement of PD therapy
- Cause specific PD attrition rates by reasons
  - All PD exits
    - Death / dialysis withdrawal

    - Death within 1 month of PD initiation
    - Transplantation
        - PD not suitable (permanent transfer to HD)
        - PD Infection
        - Catheter-related problems
            - Initial nonfunction
            - Migration
        - Solute/water clearance
        - Abdominal complications
    - Psychosocial
        - Loss of caregiver,
        - Unable to cope
    - Medical reasons - comorbidities
        - Move
        - Lost to follow up
        - Recovered function
- 1 year PD survival rate (length of time on therapy)
- Catheter insertion
    - Bedside
    - Surgical
    - Radiology
    - GFR at time of catheter insertion
- Catheter removal rates by reason
    - Infection
    - Catheter related problems-
    - Solute/UF clearance
    - Abdominal complications
    - Psychosocial
    - Medical reasons
    - Transplant
    - Recovered function
- Catheter insertion complications
    - Perioperative complications
        - Bowel perforation and/or significant hemorrhage
    - Early infections within 2 weeks of catheter insertion
    - Dialysate leak
    - Catheter dysfunction at the time of first use requiring catheter manipulation or replacement
- Number of patients requiring temporary HD
    - Percentage and timing of patients who return to PD following temporary HD
- Number of patients trained on PD
- Number and reason of patients initiating training but not completing
- Length of PD training
- Number and reason of patients retrained on PD
- Number and indications for home visits

**Safety**

- Infection rates
    - Peritonitis
    - Exit site
    - Tunnel
- % TB screening completion rates within 70 days of PD initiation

## 11.0 Advance care planning

In September 2011, legislation came into effect to provide British Columbians with improved options for expressing their wishes about future health care decisions. This legislation allows capable adults to put plans into place that outline the health care treatments they consent to or refuse based on their beliefs, values and wishes.

The province of British Columbia and the BC Ministry of Health, in partnership with BC health authorities and health care providers, developed and published a resource for British Columbians to help with advance care planning (ACP).

The advance care planning guide can be found at: My Voice: Expressing My Wishes for Future Health Care Treatment

To assist patients, use the My Voice planning guide: My Voice companion

The BC Renal has prioritized the advance care planning process as an essential part of renal care. ACP discussions should take place throughout the patient journey and be revisited every time a patient's medical condition changes.

The primary goals of ACP are:

1. To enhance patient and family understanding of their End Stage Renal Disease (ESRD) and End of Life (EOL) issues, including prognosis and likely outcomes of renal replacement therapies and alternative plans of care.
2. To define the patient's key priorities in EOL care and develop a care plan that addresses these issues. Advance care planning is an effective tool for facilitating communication among patients, their families and the health care team and is integral to providing high quality dialysis care.
3. To enhance patient autonomy by shaping future clinical care to fit the patient's preferences and values.
4. To improve the health care decision process generally, including patient and family satisfaction.
5. To identify a substitute decision-maker for future medical decision-making (as appropriate).
6. To help the substitute decision-maker understand their role in future medical decision-making.
7. To promote a shared understanding of relevant values and preferences among the patient, substitute decision-maker and health care providers.

Visit the BC Renal website for more information: BCRenal.ca > Health Professionals > Clinical Resources > Palliative Care

**Advance Care Planning activity tracking and documentation**

The details of ACP discussions are documented in the health authority electronic medical record and is an essential component to ACP.

In British Columbia, renal programs track ACP activities that have occurred throughout the life of the renal patient in the PROMIS ACP module.

*Note: The ACP module in PROMIS is not a comprehensive charting tool for ACP - it is a tracking tool for patient and program planning purposes.*

The PROMIS ACP module is utilized to:

- Track activities as the patient interact with any BC Renal program and modality (i.e. CKD, HD, HHD, PD, Transplant)
- Offer a report that may assist programs identify patients who may need focus on ACP activities based on GFR levels

The diagram on Appendix I will help users navigate the PROMIS module for ACP.

The % of patients with any record in the ACP module is reported biannually on the BC renal quality indicators dashboard on the Palliative care tab. These statistics are reported at the provincial and program level.

**Symptom Assessment and Management**

The symptom burden of PD patients can be extensive, severe and with significant impact on quality of life.

The Modified Edmonton Symptom Assessment System (mESAS) has been recognized in the literature as and effective tool for assessing symptoms in ESRD

patients and is recommended to be completed on a routine basis with all renal patients.

The mESAS can be found on the BCR website at: BCRenal.ca > Health Info > Managing My Care > Symptom Assessment and Management

Guides to assist with symptom burden for both health care professionals and patients can be found at: BCRenal.ca > Health Info > Managing My Care > Symptom Assessment and Management

**Choosing to stop dialysis**

- For any patient on dialysis, there may come a time when he/she may feel that dialysis no longer improves their quality of life or meets their personal and health care goals.
- If a patient feels that dialysis is no longer a suitable treatment option for them and would like to stop this treatment, it is important that they discuss their decision with their loved ones and their PD care team.
- The PD care team will want to understand why the patient would like to stop dialysis. The reasons to discontinue treatment may include worsening health, depression, changing personal goals, declining quality of life on dialysis, and others.
- In some cases, the patient's doctor may be able to make adjustments to their treatment (e.g. decreasing treatment frequency or duration) or provide more information or context to assist in their decision to stop.
- View/download the full booklet on the BC Renal website: BCRenal.ca > Health Info > Managing my Care > Transitions in Kidney Care > Stopping Dialysis Treatment: What you need to know before stopping OR Frequently Asked Questions about Stopping Dialysis Treatment

## 11.1 Pediatric considerations for the appropriate choice of conservative care or renal replacement therapy

An ethical decision-making framework for the appropriate choice of conservative care or renal replacement in infants and children with ESRD has been developed to help determine if the burdens of dialysis outweigh the benefits for a pediatric patient and family. The framework helps guide the discussion between the healthcare team and family factoring medical considerations, quality of life determinants, patient and family preferences and contextual features. Summary recommendations for shared decision-making regarding the withholding and withdrawing of dialysis in pediatric practice can be found here: Sustaining life or prolonging dying?

## 12.0 PD multidisciplinary healthcare team: roles and responsibilities

The PD multidisciplinary health care team includes:

- Nephrologist
- Registered nurse
- Registered dietitian
- Registered social worker
- Pharmacist/pharmacy tech
- Licensed practical nurse (LPN)
- Unit clerk

Additional roles to support the team include:

- Diabetes nurse educator

Additional team members for pediatric programs includes:

- Psychologist
- Child life specialist

## 12.1 Peritoneal dialysis team functions

A successful PD program is dependent on the expertise of all members of the multidisciplinary team, thereby maximizing the utilization as well as quality of PD. All members should work in collaboration with patients and their families to develop patient-centered management plans, goal setting and advanced care planning. To ensure effective and cohesive teamwork among PD team members, definition and understanding of individual roles is important.

## 12.2 Nephrologist

Nephrologists may be involved with the patients' transition to PD from pre- dialysis care or from an alternative modality of renal replacement therapy. Often, the nephrologist specializing in PD care can differ from the patient's primary nephrologist, and transition of care should occur between physicians once the patient has undergone PD catheter insertion. Nephrologists work in partnership with the multidisciplinary team to establish therapeutic relationships which focus on delivering patient centered care. They play important roles in pre-dialysis counselling, catheter insertions, patient treatment, and quality management, among others.

## 12.3 Registered nurse

The PD nurse has many important roles, including that of a patient caregiver, educator, and care coordinator. The PD nurse provides ongoing education and support for patients throughout their PD journey and ensures continuity of care between the patient and wider healthcare team incorporating a case management approach. The RN is integral at maintaining and managing relationships and communication between PD product vendors and the PD program and patients. Patients often rely on their PD nurse as the principal source of advice on many aspects of treatment.

## 12.4 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.

## 12.5 Registered social worker

The registered social worker is essential to the wellbeing of patients as they transition and adjust to all phases of renal care. They work collaboratively with the healthcare 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.

## 12.6 Pharmacist

Peritoneal dialysis patients often require multiple pharmacotherapies and complicated drug regiments 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.

## 12.7 Licensed practical nurse (LPN)

The LPN works collaboratively with the RN to perform procedures for PD patients with stable and predictable states of health. The LPN can work in PD programs after successfully completing unit specific training in peritoneal dialysis.

## 12.8 Unit co-ordinator (unit clerk)

The unit clerk provides administrative support to ensure day to day operations of PD programs are seamless and efficient. Description of specific roles and responsibilities can be obtained by contacting the lead chairperson for each discipline. Information can be found by contacting BCRenal.ca.

## 12.9 Diabetes nurse educator

Peritoneal dialysis relies primarily on dextrose as an osmotic agent to facilitate fluid removal. Dextrose is biochemically identical to glucose, and therefore, peritoneal dialysis can significantly impact glycemic control in patients with diabetes. A diabetic nurse educator plays an important role in helping diabetic patients titrate their oral antihyperglycemics and/or insulin while on peritoneal dialysis therapy.

# 13.0 Healthcare clinician training

Initial and ongoing training and education is a key component of a successful PD program. A variety of educational support opportunities are available for all members of the multidisciplinary team at a local, provincial, national, and international level. Resources to consider are: structured training programs, continuing education opportunities, mentorship from senior members of the multidisciplinary team, conferences, and literature/internet resources.

## 13.1 Resources

- Advanced nursing online PD course offered by BC Institute of Technology (BCIT) PD education. Funding is provided by BC Renal for the newly hired nurse working on a PD unit and/or current PD nurses seeking additional professional development training. Course content and objectives can be sourced at: BCIT.ca/
- A full discussion of adult learning can be found in the ISPD guidelines - ISPD and the University of Pittsburgh -Teaching Nurses to Teach: Peritoneal Dialysis Training: ISPD.org/teaching-nurses/
- ISPD Guidelines- Peritoneal Dialysis Patient Training- 2006: ISPD.org/NAC/education/pd-curriculum/
- CANNT nursing standards: CANNT.ca
- Industry-provided specific training programs and information.
- Vantive - Kidney Campus HCP Learning Portal: Kidneycampus.ca
- Vantive PD Excellence Academy- Education: Pdempowers.com/hcp
- Introduction to PD Catheter Insertion Course- Kidney Campus, McMaster University is suggested: Cmas.ca/pd-insertion
- PD University for Interventionist Nephrologists and Interventionist Radiologists is another option for Nephrologists: ISPD.org
- Canadian Society of Nephrology (CSN): Csnscn.ca
- ISPD Home dialysis University: ISPD.org
- YouTube: ISPD.org
- The Kidney Research Scientist Core Education and National Training Program (KRESCENT): Krescent.ca
- American Society of Nephrology (ASN) Education and Meetings: Asn-online.org
- Royal College of Physicians- CPD Program

Accreditation - Provider of continuing professional development for the maintenance of certification (MOC): Cpsbc.ca
- The ISPD Fellowship Courses: ISPD.org
- Peritoneal Dialysis Curriculum: ISPD.org/NAC/education/pd-curriculum
- Renal Fellow Network-National Kidney Foundation: Renalfellow.org
- American Society of Nephrology- Career Resource Videos: Asn-online.org
- American Society of Nephrology - Dialysis Virtual Mentor: Asn-online.org/education/training/mentors/
- Peritoneal Dialysis Academy: Uab.edu/medicine/nephrology/
- Tools for Detection, Monitoring and Referral of CKD: Csnscn.ca
- Continuing Medical Education (CME) individual activities for family physicians: Kidney.org/professionals/physicians
- Chronic kidney disease education webinars to general practitioners are offered on a quarterly basis: BCRenal.ca/learning-events/clinical-education-and-webinars/ckd-e-learning-for-primary-care

## 13.2 Conferences

Annual conferences are designed to provide continuing education on relevant renal subjects targeting the multidisciplinary team. The following recommended renal conferences include:

**British Columbia**

- BC Kidney Days BCRenal.ca/learning-events/bc-kidney-days

**National**

- Canadian Society of Nephrology (CSN) Csnscn.ca
- Canadian Associations of Nephrology Nurses and Technicians (CANNT) CANNT.ca

**North America**

- Annual Dialysis Conference Annualdialysisconference.org
- American Nephrology Nurse Associations (ANNA) Annanurse.org

**International**

- International Society of Peritoneal Dialysis (ISPD) ISPD.org
- European Renal Association-European Dialysis and Transplant Association (ERA-EDTA) ERA-online.org

# 14.0 Recommended allocation of resources for PD

## 14.1 BC Renal PD funding model

The funding for PD service delivery is provided by the Ministry of Health and allocated based on patient volumes. The mandate of BC Renal is to advocate for funding to support delivery of services in an equitable manner throughout the province. Operation and delivery of services is the responsibility of the health authority renal programs. In 2003, BC Renal developed an activity-based funding approach for kidney patients with the overarching objective of establishing a sustainable model for renal services.

BC Renal is accountable for the entire provincial renal budget in partnership with the health authority renal programs. Once renal funding is delivered to a health authority, the funds can be used at the discretion of its renal program in alignment with the activities outlined in the model. This allows the ability to address regional quality indicator targets in

view of local circumstances. By accommodating both province-wide and regional targets, BC Renal funding model ensures that health authorities can address local needs, while also meeting provincial objectives for renal care. The transparency of the funding model enables the direct comparison of patient outcomes by location across the province and the fair evaluation of non-standard approaches to care[17].

Funding provided to a peritoneal dialysis program is based on projections of patient volumes for:

- Entry into treatment (per new case),
- Maintenance care (per patient year) and
- Exit from program (per discharge)

Funding provided for new, discharged and/or maintenance cases is based on:

- Task/activities required by patients under each case category (the intensity of medical care depends on acuity level)
- Most appropriate type of staff to do each task
- Amount of time to complete each task
- Frequency of completing the task (e.g. every month, upon entry, upon discharge etc.) and
- Probability that the task will be required for the patient population

See Appendix H, tables 1 and 2 for examples of the tasks related to peritoneal dialysis.

## 14.2 Application of the BC Renal PD funding model

The BC Renal activity-based funding model is founded on the concept of:

- Funding follows the patient
- Funding is based on outcomes

The funding model covers the costs of delivering multidisciplinary care for all patients with kidney disease in British Columbia, regardless of their location or treatment modality. The BC Renal activity -based funding model describes each care activity required, identifies the staff needed to complete the activity, estimates the time required for completion (validated by time motion studies), defines the frequency of the activity and estimates the probability of the activity being required for patients in each treatment modality. The number of direct patient care hours required for each category of care provider was determined. Hours were then converted to FTE requirements and corresponding labour costs after adjusting for fatigue and delay factors, indirect patient care activities, sick time, statutory holidays, vacation time and professional development time.

## 14.3 PD staffing/patient funding ratios

Programs are to use a multidisciplinary approach to identify patient needs and to overcome barriers to PD in the home. Programs in the province have comparable multidisciplinary clinical and administrative staffing needs. These include clinical and operational leadership, nephrology consult services and access to a team of nurses, dietitians, pharmacists, social workers and clerical staff. An average staffing mix is determined by the current activity-based funding model, but individual programs can tailor it as they see fit. See chart on the next page.

# 15.0 PD supply and service delivery

## 15.1 Roles and responsibilities

### 15.1.1 Vendor

- For PD patients, the vendor will assume responsibility for the integration of products, supplies, and PD services according to a negotiated provincial contract. Services include full-service delivery of all PD-related equipment and supplies for PD patients. The vendor will assume that all delivered supplies are:
  - Within shelf life ranging from 12–24 months.
  - Rotate and put away stock in patient's designated dialysis or storage area
  - Products are as specified, and that the products are clearly labelled, are new and have not been used, demonstrated, or reconditioned.
  - Delivered in a timely manner in accordance with the patient schedule
  - Notify the patient and training center of any inabilities to meet undeliverable timelines.
  - The vendor will support home patients by:
  - Providing delivery and customer service to all home PD patients
  - The vendor will offer easy to access customer care for assistance with supply ordering

## Funding ratios: Total FTEs per 100 new cases for HD, HDD, PD and pre-dialysis

**Appendix E:** This table summarizes the total FTEs required by each of the treatment modalities and subtypes described in Appendixes A to D

| | Facility-Based Hemodialysis | | | | | Home Hemodialysis | Peritoneal Dialysis | Pre-Dialysis | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Independent self-care (L1) | Low dependence (L2) | Medium dependence (L3) | High dependence (L4) | Total dependence (L5/6) | | | Category 1 (>30 ml/min) | Category 2 (15-30 ml/min) | Category 3 (<15 ml/min) |
| **Funded FTEs per 100 New Cases** | | | | | | | | | | |
| Clerk | 0.083 | 0.083 | 0.083 | 0.083 | 0.083 | 0.049 | 0.277 | 0.131 | 0.131 | 0.131 |
| Dietitian | 0.196 | 0.098 | 0.098 | 0.098 | 0.098 | 0.196 | 0.245 | 0.245 | 0.245 | 0.245 |
| Pharm | 0.071 | 0.071 | 0.071 | 0.069 | 0.069 | 0.082 | 0.082 | 0.071 | 0.071 | 0.071 |
| RN | 5.436 | 2.718 | 0.121 | 0.121 | 0.121 | 24.279 | 4.621 | 0.055 | 0.055 | 0.055 |
| SW | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.346 | 0.000 | 0.147 | 0.147 | 0.147 |
| Tech | 5.436 | 2.718 | 0.000 | 0.000 | 0.000 | 2.680 | 0.000 | 0.000 | 0.000 | 0.000 |
| **Funded FTEs per 100 Discharged Case** | | | | | | | | | | |
| Clerk | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.098 | 0.098 | 0.037 | 0.037 | 0.037 |
| Dietitian | 0.049 | 0.049 | 0.049 | 0.049 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Pharm | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RN | 0.113 | 0.113 | 0.113 | 0.113 | 0.113 | 0.105 | 0.072 | 0.131 | 0.131 | 0.131 |
| SW | 0.087 | 0.087 | 0.087 | 0.087 | 0.087 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Tech | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.315 | 0.000 | 0.000 | 0.000 | 0.000 |
| **Maintenance per 100 Patient Years** | | | | | | | | | | |
| Clerk | 2.356 | 2.356 | 2.356 | 2.356 | 2.356 | 0.587 | 0.647 | 0.105 | 0.158 | 0.315 |
| Dietitian | 0.255 | 0.510 | 0.850 | 1.276 | 1.276 | 0.707 | 0.589 | 0.098 | 0.194 | 0.294 |
| Pharm | 0.086 | 0.172 | 0.286 | 0.429 | 0.858 | 0.676 | 0.263 | 0.071 | 0.141 | 0.214 |
| RN | 5.871 | 11.743 | 19.571 | 29.357 | 58.714 | 1.346 | 2.950 | 0.251 | 0.369 | 1.093 |
| SW | 0.597 | 0.597 | 0.597 | 0.597 | 0.597 | 0.494 | 0.398 | 0.294 | 0.294 | 0.294 |
| Tech | 2.356 | 4.712 | 11.779 | 11.779 | 11.779 | 2.586 | 0.000 | 0.000 | 0.000 | 0.000 |
| Biomed | 0.858 | 0.858 | 0.858 | 0.858 | 0.858 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

### 15.1.2 PD program

Ideal supply stock levels for PD programs are maintained by the hospital store departments in most hospital-based PD programs. PD staff may be required to use a dedicated inventory system to determine the amount of stock required for a functioning PD clinic.

In community-based clinics, the training nurse may be responsible for ordering all PD training supplies and ancillaries through the vendor.

To ensure efficacy in PD supply and delivery, the PD RN/Supply coordinator will be responsible to:

- Order and coordinate arrangements for initial home dialysis patient supply order
- Order unique, or patient-specific supplies, from the hospital purchasing department or vendor
- Rotate stock and noting expiry dates if not done by hospital store departments
- Store all supplies according to vendor recommendations
- Ensure all patient prescription changes are communicated to vendor in a timely manner

### 15.1.3 Patient

The PD team will determine the patient's supply order based on prescription and ancillary needs. Upon completion of training, the patient will be responsible for:

- Ordering supplies according to delivery schedule. A minimum of five business days are required for orders to be placed
- Providing on-hand inventory at time of order
- Storing all supplies and safety stock according to vendor recommendations
- Sorting supplies and noting expiry dates
- Using products according to prescription
- Ensuring availability of someone in the home to receive supply deliveries.
- Allowing 60 days notice for travel (Discuss travel plans with PD team)
- Maintaining a minimum of two weeks safety stock

### 15.1.4 BC Renal

BC Renal is responsible for:

- Coordination of the provincial PD program in collaboration with all peritoneal programs
- PD provincial contracts
- Financial costs for all peritoneal dialysis supplies and products
- Coverage of domestic travel PD supplies cost for PD patients

### 15.1.5 Purchaser

Each Health Authority is responsible for purchasing PD training supplies and ancillaries. Orders are to be placed directly with the vendor.

## 15.2 Contract

### 15.2.1 Process

The provincial contract provides supplies to patients with financial coverage by the BC Renal. The

Peritoneal Dialysis Committee, BC Renal and PHSA supply chain reviews evidence-based products using specific evaluation criteria to identify the product that delivers the greatest overall clinical, technical, and financial value.

### 15.2.2 Expectations

A set of quantifiable key performance indicators are used to ensure efficiency, capability and effectiveness of various operational aspects of the contract.

### 15.2.3 Monitoring

BC Renal will manage, and monitor the provincial PD contract, and facilitate the contract with PHSA supply chain. Key performance indicators will be reviewed at quarterly business meetings.

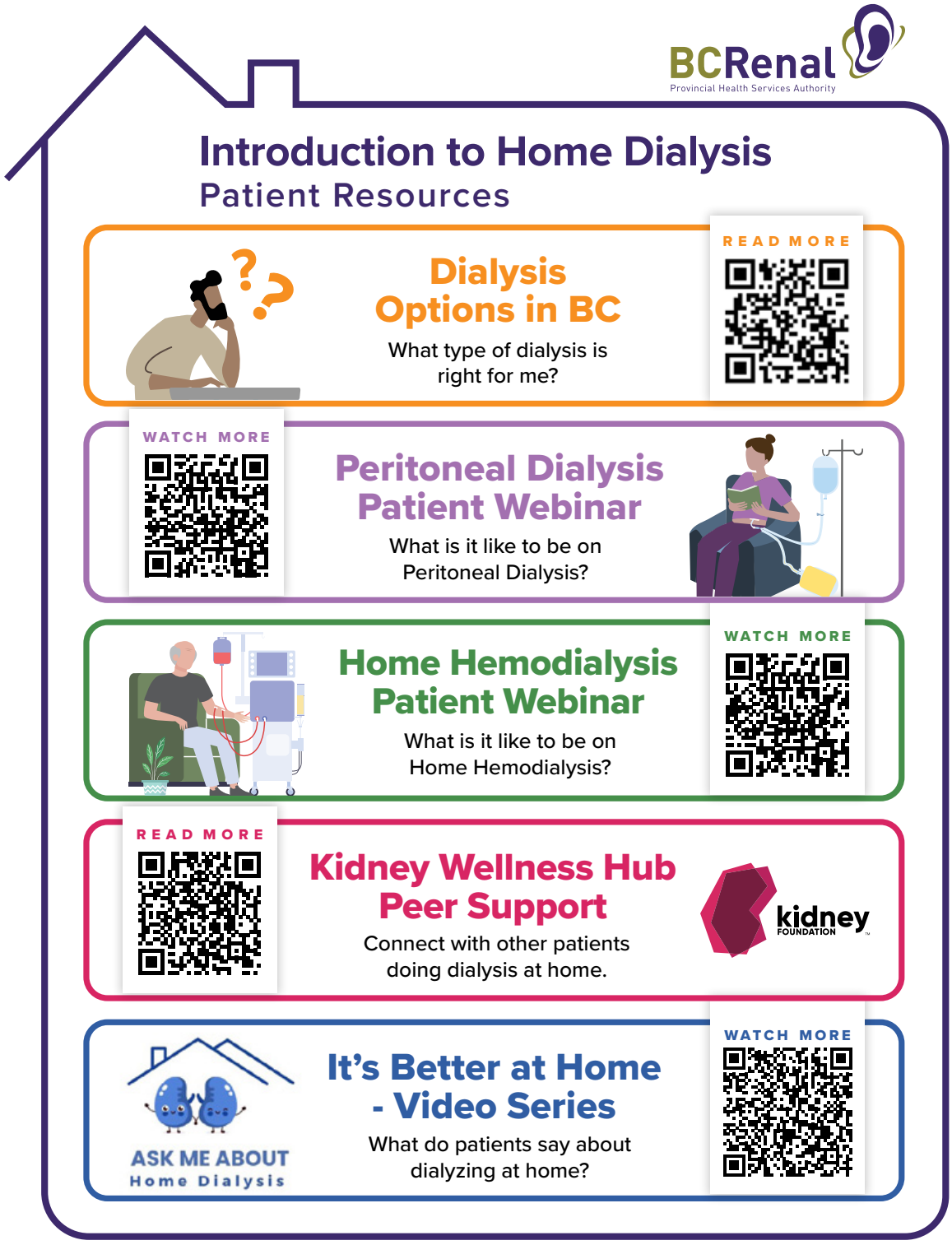
## 16.0 Emergency preparedness

- Disasters often strike quickly, and without warning. Natural disasters (blizzards, earthquakes, floods, hurricanes, tornadoes, etc.) or electrical power blackouts can disrupt healthcare services, including dialysis treatment.
- Dialysis patients are particularly at risk because they need power and water for their treatment, and these may not be available for several days in the event of a disaster.
- To prepare for an emergency, patients are asked to keep an updated copy of the following with them at all times:
  - Medication List Form
  - Emergency Information Form
  - Medical Condition and History Form
  - Emergency wallet card (for PD and HD)
  - See Appendix F for more details
- All home dialysis patients are asked to prepare an emergency pack with a minimum 3-day emergency diet and medication supply.
- PD patients are asked to keep a minimum of 7 days of additional PD supplies in their homes This should include both CAPD and APD supplies dependent on the patients therapy. Important to remember that the APD patient may need to switch to CAPD in the event of loss of power.
- PD patients should notify their PD program when an emergency situation arises to provide them with information around availability of supplies and resources to perform PD in their home. The PD patient should notify the PD program if they need to re locate to a new location.
- PD patients should keep an emergency PD supply bag ready to use if they are required to leave their home for safety reasons. The emergency bag should include supplies to perform CAPD exchanges for a minimum of 1–2 days during a disaster.
- Supplies to include:
  - Face masks
  - Sanitizing hand gel
  - Twin bags of dialysate
  - Clamps
  - Gauze
  - Mini caps
  - Paper towels and clean towels
- Visit the BC Renal website for more information: BCRenal.ca > Health Professionals > Professional Resources > Emergency Preparedness

## 17.0 Appendices

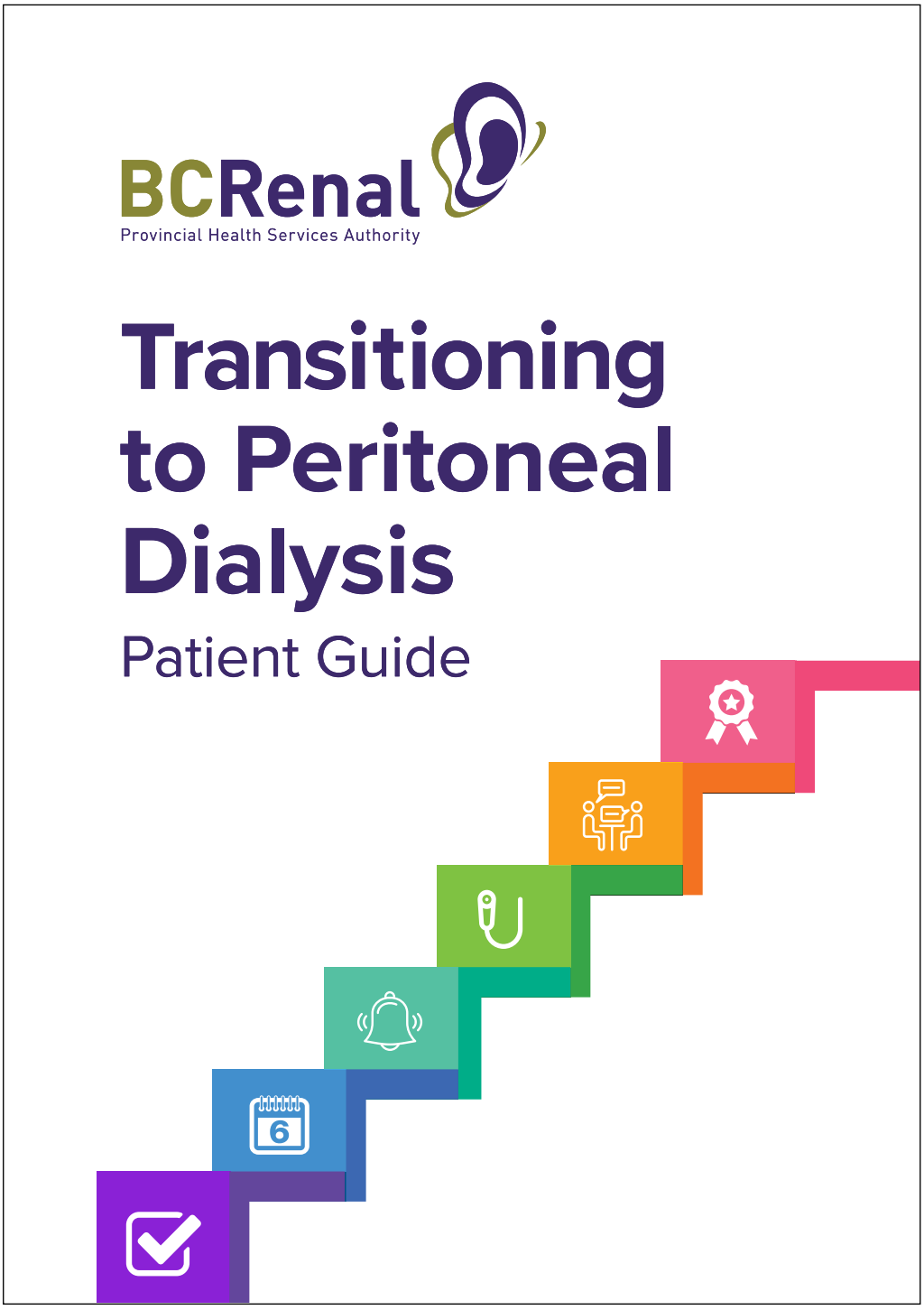
### Appendix A: Introduction to Home Dialysis – Patient Resource Tool Kit

Patients are provided with a list of informative home dialysis resources including webinars, videos, and access to support groups



## Appendix B: Transitioning to Peritoneal Dialysis - Patient Guide

View/download the full booklet on the BC Renal website: BCRenal.ca > Health Info > Managing my Care > Transitions in Kidney Care > PD Transition Guide Booklet



## Appendix C: Transitioning to Peritoneal Dialysis - Care Team Guide

View/download the full guide: Transition to Peritoneal Dialysis (PD)

# Care Team Guide:
# Transition to Peritoneal Dialysis

BCRenal
Provincial Health Services Authority

PD can be done as self-care or care by companion/caregiver in a patient's home or care facility.
**Note:** * identifies tasks that may be done by the **referring Team or PD Team or link/ transition/navigator nurse or designated other.** Division of duties is arranged locally.

| Step | Major Tasks | | |
|---|---|---|---|
| | **Referring Team (TX, HD, HDD)** | | **PD Team** |
| 1. Identifies patients interest and eligibility for PD<br><br>**Refer to Step 1 of the *Transitioning to PD* booklet** | Identifies patients who are interested and eligible for PD using basic eligibility criteria.<br>• *See Appendix A for basic PD eligibility criteria*<br>• *See Appendix B for information on Modality Choices*<br><br>Provides Transitioning to PD booklet. | | |
| 2. Patient referral to PD<br><br>**Refer to Step 1 of the *Transitioning to PD* booklet** | Refers eligible PD candidates to PD for PD suitability assessment. Updates PROMIS. | ➡<br>⬅ | Receives patient referral.<br><br>Books appointment for PD suitability assessment & orientation with PD training nurse.<br><br>Communicates dates and details of appointments with patient and referring team. |
| 3. PD suitability assessment and modality education<br><br>**Refer to Step 1 of the *Transitioning to PD* booklet** | | | *Conducts PD suitability assessment & orientation<br>• *See Appendix B for PD modality education topics for review*<br>• *See Appendix C/link for example of PD assessment tool.*<br>• *See Appendix D for PD e-learning modules*<br><br>Advises patient & referring team of PD assessment outcome. Updates assessment outcomes in PROMIS.<br><br>If patient has not already received, provides Transitioning to PD booklet to patient.<br><br>Maintains current list of patients suitable for PD. |
| | ⬇ | | ⬇ |

# Home Dialysis
## Patient Suitability Assessment

BCRenal
Provincial Health Services Authority

The following assessment questions may be useful as a guide to develop an effective plan of care for the home dialysis patient.

### Patient responses will guide the plan of care to:

- Be individualized
- Specify the services necessary to address the patients needs identified in the assessment
- Include measurable and expected outcomes
- Include estimated timetables to achieve outcomes
- Contain outcomes consistent with current clinical practice standards.

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **COGNITIVE ABILITY** | | |
| **EMPLOYMENT**<br>• Full time<br>• Part time<br>• Retired<br>• Unemployed<br>» **Occupation**<br>» **Hobbies** | | |
| **LEVEL OF INDEPENDENCE**<br>• Independent<br>• Needs assistance<br>  • In what?<br>• Totally dependent | | • May require open discussion with pts family and/or support person to identify their commitment level to assist.<br>• May consider PD Assist if patient meets eligibility criteria. |
| **LEVEL OF EDUCATION**<br>• No education<br>• Elementary<br>• High school<br>• College/university | | • May need to consider training material and methods to match education level. If illiterate, pictures and return demonstrations may be required for training. |
| **LANGUAGE**<br>• English<br>• Other<br>  • Spoken<br>  • Written<br>  • Read | | • May need to consider training material and methods to match education level. If illiterate, pictures and return demonstrations may be required for training. |

continued...

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **BARRIERS TO THE PATIENT'S ABILITY TO COMMUNICATE VERBALLY IN ENGLISH**<br>• Not able to communicate in English<br>• Only able to communicate basic needs to staff (uses single words or short phrases – requires interpretation assistance for conversations and care planning)<br>• Able to communicate with staff in most situations (able to carry on conversations with staff. Requires occasional interpretation assistance for more complex conversations) | | • May require open discussion with family and/or support person to identify their ability to assist for training and ongoing communication between patient and program. |
| **PAST EXPERIENCES WITH LEARNING NEW SKILLS**<br>• No<br>• Yes | | Questions to consider:<br>• Have they learned to use a computer?<br>• Do they use automated banking?<br>• How did they learn these skills?<br>• Consider using VARK questionnaire to assist in identifying learning styles: **http:/vark-learn.com** |
| **PATIENT'S LEARNING PREFERENCE?**<br>• Visual<br>• Hearing<br>• Doing<br>• Solitary (use self study)<br>• Social (group activity, role playing | | • Develop a teaching plan that mirrors the patient's learning preference. |
| **KNOWN OR DIAGNOSED COGNITIVE DEFICITS REPORTED BY PATIENT OR FAMILY?**<br>• No<br>• Yes | | • May require an open discussion with family and/or support person to identify their commitment level to assist if cognitive.<br>• Impairment inhibits short term memory and ability to learn and or make decisions related to treatment.<br>• May require SW consult and assistance to perform clock test and/or mini mental health test. |

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **DOES PATIENT REPORT ANY PAST OR CURRENT MENTAL HEALTH ISSUES, CONCERNS OR MOOD DISTURBANCES (FEELING OF DEPRESSION OR ANXIETY)?**<br>• Dementia<br>• Anxiety disorder<br>• Depression<br>• Alcohol or substance abuse<br>• Post-traumatic stress syndrome<br>• Alzheimer's<br>• Bipolar disorder<br>• Schizophrenia<br>• Other | | • Assess if patient's ability to self manage at home may be affected. Active chemical dependency may impair the pts ability to assess health need.<br><br>Questions to consider:<br>• Is patient followed with psych/ social work support?<br>• Is a consult required? |
| **HOME ENVIRONMENT AND LIVING ARRANGEMENTS** | | |
| **LIVING ARRANGEMENTS**<br>• Lives Alone<br>• With partner/spouse<br>• With children<br>• Extended family<br>• Roommate | | Questions to consider:<br>• Will patient need support to self manage?<br>• Do they have someone to assist?<br>• Does the patient identify that help will come from someone that they live with? |
| **TYPE OF DWELLING**<br>• House ☐ Rent ☐ Own # of levels _____<br>• Apartment ☐ Rent ☐ Own<br>• Assisted living/LTC/ nursing home<br>• No fixed address | | • Can home therapy be performed in their current living environment?<br>• Electrical and plumbing upgrades may be required for HHD. If renting, landlord approval may be required.<br>• PD is not accommodated in all LTC facilities. |
| **PETS SHARING LIVING SPACE?**<br>• No<br>• Yes Type: _____ | | • Is the patient aware that pets cannot be in the room when they are setting up for dialysis? |

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **STORAGE SPACE FOR HOME PRODUCTS?**<br>• No<br>• Yes<br>Location: _____<br>• Heated<br>• Well lit<br>• Well ventilated | | • Is there adequate home storage for supplies and equipment?<br>May need to consider:<br>• Altering supply delivery schedules (increase frequency and reduce quantities)<br>• Storing some supplies in an alternative location and move as required. |
| **DESIGNATED AREA FOR PERFORMING DIALYSIS**?<br>• No<br>• Yes<br>Where: _____ | | |
| **HAS ACCESS TO ELECTRICITY, WATER AND DRAIN FOR AUTOMATED EQUIPMENT?**<br>• No<br>• Yes | | • Electrical and plumbing upgrades may be required for HHD.<br>• If renting, landlord approval may be required. |
| **DOES THE PATIENT HAVE A TELEPHONE LINE OR FUNCTIONING CELL PHONE?**<br>• No<br>• Yes | | |
| **IS THERE ROAD ACCESS FOR SUPPLY DELIVERIES AND/ OR PD ASSIST SERVICES (IF REQUIRED)?**<br>• No<br>• Yes | | |
| **IS THE PATIENTS CURRENT LIVING SITUATION A POTENTIAL BARRIER TO POSITIVE TREATMENT OUTCOMES?**<br>• No<br>• Yes | | • Is a home visit required to assess home environment? |

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **PHYSICAL ABILITY** | | |
| **PERTINENT MEDICAL HISTORY** | | |
| **PREVIOUS ABDOMINAL SURGERIES**<br>• No<br>• Yes<br>Type: _____ | | |
| **PATIENT HAS NORMAL VISION WITH OR WITHOUT EYE GLASSES**<br>• No<br>• Yes | | May need to consider using specific patient education tools:<br>• Large print/font<br>• Audio tools |
| **WHAT VISION AIDS DOES THE PATIENT USE?**<br>• Wears glasses<br>• Contact lenses<br>• Magnifier | | |
| **DOES THE PATIENT HAVE HEARING PROBLEMS?**<br>• No<br>• Yes | | • May need to consider:<br>  • print material<br>  • demonstrations<br>  • diagrams<br>  • pictures<br>• Consider contacting Canadian Hard of Hearing Association. |
| **DOES THE PATIENT USE HEARING AIDS?**<br>• No<br>• Yes L R | | |
| **DOES THE PATIENT HAVE WEAKNESS OR TREMORS IN UPPER LIMBS?**<br>• No<br>• Yes L R | | • OT support may be required to assist with support aids/options.<br>• Open discussion required to identify available support in the home and the commitment level of the support.<br>• PD Assist may be an option if patient meets eligibility criteria. |
| **WEAKNESS IN LOWER LIMBS**<br>• No<br>• Yes L R | | |

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **AMPUTATION IN UPPER LIMBS**<br>• No<br>• Yes L R | | • OT support may be required to assist with support aids/options. |
| **DOES THE PATIENT REQUIRE FURTHER FUNCTIONAL ASSESSMENT?**<br>• No<br>• Yes- **If so, refer to *Functional Assessment for PD or HHD.*** | | • May assist in assessing the patient's ability to perform specific tasks physical, cognitively, or reading skills |
| **ASSESSMENT OF CAREGIVER (IF APPLICABLE)** | | |
| **CARE GIVERS RELATIONSHIP TO THE PATIENT**<br>• Spouse/partner<br>• Friend<br>• Other family member | | |
| **CARE GIVER LIVES WITH THE PATIENT?**<br>• No<br>• Yes | | |
| **CARE GIVER UNDERSTANDS COMMITMENT INVOLVED**<br>• No<br>• Yes | | |
| **CARE GIVER IS WILLING AND MOTIVATED**<br>• No<br>• Yes | | |
| **CARE GIVER HAS NO BARRIER IN COGNITIVE ABILITY**<br>• No<br>• Yes | | |
| **CARE GIVER IS AVAILABLE AT THE NECESSARY TIMES FOR DIALYSIS**<br>• No<br>• Yes | | |
| **ASSESSMENT OF HOME (HOME HEMODIALYSIS ONLY)** | | |
| **IF THE PATIENT IS A RENTER, IS THE LANDLORD AWARE OF POSSIBLE HOME RENOVATIONS?**<br>• No<br>• Yes | | • Will require written consent before training commences.<br>• Bring Landlord Consent form to Pre-Assessment clinic/meeting. |

| ASSESSMENT | COMMENTS | CONSIDERATIONS |
|---|---|---|
| **DOES THE PATIENT HAVE HOMEOWNERS INSURANCE?**<br>• No<br>• Yes | | • This is a requirement due to the increased risk of water damage with a HHD machine. |
| **WHAT TYPE OF WATER SUPPLY DOES THE PATIENT HAVE?**<br>• Well<br>• Municipal<br>• Other | | • Private well water should be tested a minimum of once a year (q 6months preferred) and more frequently for shallow/ surface wells as they are more susceptible to contamination. It is important to test water at the tap and the source. |
| **IF THE PATIENT HAS A WELL, HOW OFTEN IS THE WATER TESTED?** | | |
| **DOES THE PATIENT HAVE A SEPTIC SYSTEM?**<br>• No<br>• Yes | | • Patients should be aware that it is their responsibility to ensure their septic system is well functioning, maintained and is able to manage in the water demands of HHD. |
| **IF THE PATIENT DOES HAVE A SEPTIC SYSTEM:**<br>• What is the size of the septic system?<br>• What is the age of the septic system?<br>• What are the water demands of the household? | | • See *Home Hemodialysis and Septic Systems* document for more information. |
| **IS THERE ACCESS TO THE MAIN ROAD FOR DELIVERIES?**<br>• No<br>• Yes | | • A requirement for safe delivery of supplies.<br>• If no access to main road, have the patient describe how deliveries will be made to the home. Will require further evaluation by team. |
| **DOES THE PATIENT HAVE A TELEPHONE LINE OR FUNCTIONING CELL PHONE?**<br>• No<br>• Yes | | • Mandatory for emergencies and machine issues. |

# Peritoneal Dialysis Functional Assessment

BCRenal
Provincial Health Services Authority

**The functional assessment provides examples of basic skills that are needed to be able to perform and manage Peritonal Dialysis.**

### Instructions to perform the functional assessment:

1. Gather supplies and place them on a working surface.
2. Nurse to demonstrate and verbally descrie basic skill (#1-8) as it is performed.
3. Have patient perform each basic skill (#1-8) following.
4. Patient to complete basic skill #9 and #10 without assistance.
5. Nurse to document observations.

### Supplies required

- Transfer set with white mini cap
- Mini cap
- Red clamp
- Mask
- PD solution bag with tubing and colored pull ring attached
- 2 liter PD solution bag
- Tongue depressor
- IV pole
- Pencil/pen

### Resources

VIHA: Functional assessment.  22 June 2016 Reviewed by: Backx,T, VKCC, NKCC, CI/SI Navigators

| BASIC SKILL | CAN PERFORM | CANNOT PERFORM | COMMENTS |
|---|---|---|---|
| 1. Pick up the PD solution bag and hold it over head for a count of 3. | | | |
| 2. Hang PD solution bag on IV pole. | | | |
| 3. Hold the transfer set and twist the clamp open and closed until it clicks. | | | |
| 4. Open a minicap package and place on the end of the transfer set without contamination. | | | |
| 5. Remove the mini cap from the transfer set. | | | |
| 6. Remove the colored ring from the PD solution bag. | | | |
| 7. Attach the red clamp anywhere along the PD tubing and snap it closed. Release the clamp to open. | | | |
| 8. Pick up the tongue depressor and snap it into 2 pieces. | | | |
| 9. Look at the picture of the home choice cycler below and record what is seen in the display screen. | | | |


What is displayed on the screen?

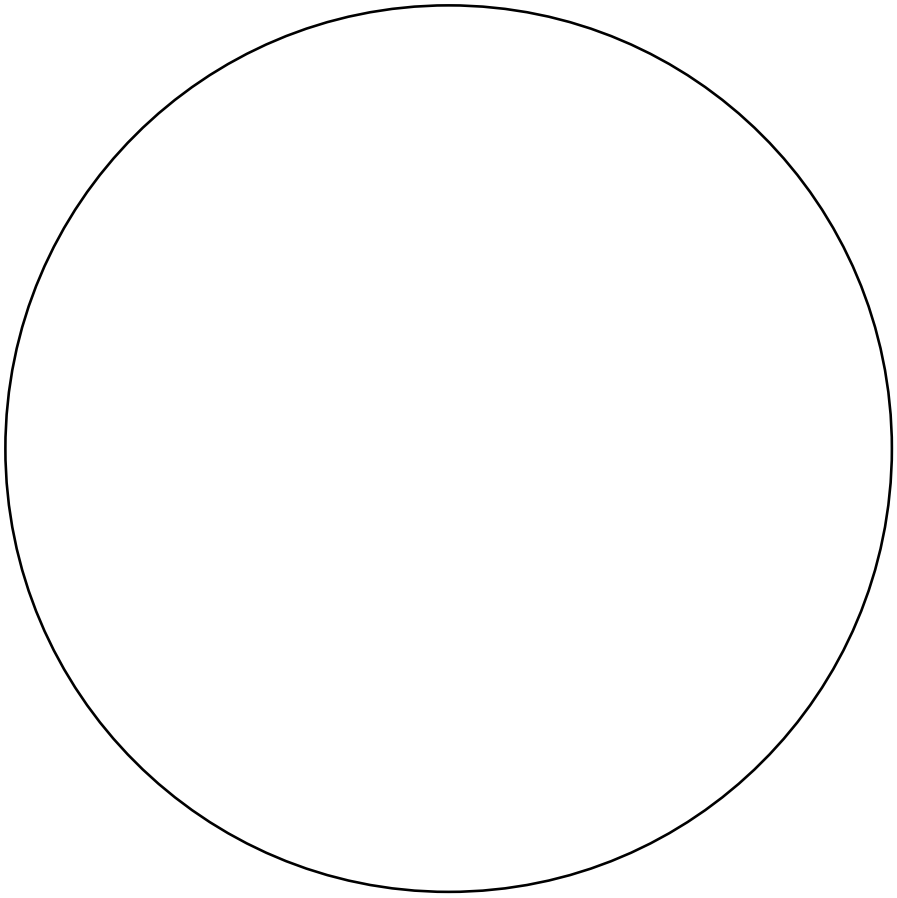
_____

_____

_____

## Clock Test

| BASIC SKILL | CAN PERFORM | CANNOT PERFORM | COMMENTS |
|---|---|---|---|
| 10. Using the circle diagram below as a clock face:<br>1. Put the numbers on the face of the clock.<br>2. Make the clock say “10 minutes after 11”. | | | |



## PD Functional Assessment-
## For Nursing Use Only

| | |
|---|---|
| Patient name | |
| Assessment date | |
| Assessment completed by | |

Attach patient label here

Patient completed all aspects of the assessment following visual/verbal demonstration without difficulty.
☐ Yes ☐ No

Comments:

Patient required repeated prompting to complete all aspects of the assessment following visual/verbal instructions.
☐ Yes ☐ No

Comments:

Clock test score: _____

- Score 1 point for each number in its correct eighth (1,2,4,5,7,8,10,11).
  - No points for pen marks or words instead of numbers.
- Score 1 point for short hand pointing to number 11
- Score 1 point for long hand pointing to number 2
  - No points for hands approximately the same length
  - No point if the short hand is pointing to the 2 and the long hand pointing to the 11

Results:
10 or greater suggests cognitive impairment unlikely
6 - 9 indicates probable impairment
0 - 5 indicates prominent impairment

Comments:

Future Steps:

Documentation completed: ☐ Chart ☐ PROMIS

## Appendix E: PD Assist Eligibility Criteria

PD client and or support:

- Has completed the PD training
- Can perform the procedures related to connecting and disconnecting from the cycler and associated troubleshooting of cycler complications that may occur during the therapy.
- Can manage all non-cycler aspects of their PD care inclusive of but not limited to fluid management, access care, effluent assessment, supply ordering.
- Can contact the PD program to communicate any identified concerns or problems associated with their health status or PD therapy.
- Are unable to perform the cycler set up and dismantling procedure due to physical, cognitive, psychological and or social reasons.

Assistance may be required in one of the following scenarios:

**Long term:**
Assistance by a CG is required one time per day, several times each week or up to 7 days per week until the client* leaves the PD program.

| | |
|---|---|
| **PHYSICAL** | ◈ Health status prevents the client from dismantling/setting up the cycler.<br>◈ Dexterity/strength/vision deficits limit the ability of the client to complete the tasks associated with cycler dismantling/set up. Examples of deficits include but are not limited to the inability:<br>• To gather supplies<br>• Lift dialysate solution bags<br>• Open supply packaging<br>• Break seals on solution bags |
| **COGNITIVE PSYCHOLOGICAL** | ◈ Cognitive function deficits (memory, problem solving, decision making) which may/will impact the client's ability to safely complete the necessary steps associated with cycler dismantle/set up. Examples may include but are not limited to the inability to:<br>• Correctly sequence tasks associated with cycler set up/dismantle<br>• Troubleshoot potential cycler machine alarm conditions occurring during cycler set up/dismantle<br>◈ Learning deficits which impact the client's ability to safely complete the steps involved in cycler set up/dismantle<br>◈ Confidence to perform cycler set up/dismantle procedures independently is absent |
| **SOCIAL** | ◈ Absent or intermittent availability of support person(s) following identification that such support to manage CCPD is needed |

**Short term including respite:**
Assistance required by a caregiver for 2 weeks to 3 months for what is thought to be temporary reasons. The client is anticipated to be able to return to total self-management of PD cycler therapy however may require long term assistance if status remains compromised.

| | |
|---|---|
| **PHYSICAL** | ◈ Health status which is assessed to temporarily prevent the client from having the ability to set up/dismantle the cycler. Example: cardiovascular changes, recent hospitalization, surgery,<br>◈ Dexterity/strength/vision deficits felt to be temporary, which limits the ability of the client to complete the tasks associated with cycler set up/dismantle. Examples of deficits include but are not limited to the inability to:<br>• Gather supplies<br>• Lift dialysate solution bags<br>• Open supply packaging<br>• Break seals on solution bags |
| **COGNITIVE PSYCHOLOGICAL** | ◈ Cognitive function (memory, problem solving, decision making) felt to be temporary and is assessed to impact the client's ability to safely complete the necessary steps associated with cycler set up/dismantle. Examples may include but are not limited to the inability to:<br>• Correctly sequence the steps associated with cycler set up/dismantle<br>• Troubleshoot potential cycler machine alarm conditions occurring during cycler set up/dismantle<br>◈ Learning deficits which impact the client's ability to safely complete the steps involved in cycle that could improve with exposure to using the cycler.<br>◈ Lack of confidence to perform cycler set up/dismantle procedures independently, but could improve with exposure to using cycler |
| **SOCIAL** | ◈ Support person, who provides assistance for CCPD, is intermittently unavailable |

** The term client refers to either the PD client or their designated support person if required.*

## Appendix F: Patient Handouts for Disaster Preparedness

To prepare for an emergency, patients are asked to keep an updated copy of the following with them at all times. View/download these resources on the BC Renal website: BCRenal.ca > Health Info > Kidney Care > Emergency Preparedness

# Medication List

BCRenal
Provincial Health Services Authority

- Keep an updated list of all your medications including the dosage and when you take them. Keep a copy with you at all times.
- Know which medications are absolutely necessary for your survival.
- Carry a list of your medications (amount, frequency) with you at all times.
- Keep (at least) a 3-day supply of medications at all times. Rotate and check expiration dates.
- If you travel, carry your medication in your hand luggage.

| Medication | Dosage | Frequency |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Provincial Health Services Authority · BC Children's Hospital · fraserhealth · Interior Health · island health · northern health · Providence Health Care · Vancouver CoastalHealth

BC Renal • BCRenal.ca April 2020

# Emergency Information

BCRenal
Provincial Health Services Authority

Please print clearly, and update it if any of the information changes.
**A copy of this sheet should be with you at all times.**

| | |
|---|---|
| **Last Name** | |
| **First Name** | |
| **Date of Birth (dd/mm/yyyy)** | |
| **Address** | |
| **Phone Number** | |
| **Personal Health Number** | |
| **Your nearest relative or someone to be contacted in case of an emergency:** | |
| **Last Name** | |
| **First Name** | |
| **Relationship to You** | |
| **Address** | |
| **Phone Number** | |

Provincial Health Services Authority · BC Children's Hospital · fraserhealth · Interior Health · island health · northern health · Providence Health Care · Vancouver CoastalHealth

BC Renal • BCRenal.ca April 2020

# Your Medical Condition and History

BCRenal
Provincial Health Services Authority

If you need to go to another hospital or clinic after a disaster, or if your medical records are unavailable or destroyed, having your medical information with you will help temporary care givers to understand your special needs. You should keep this updated.

| | |
|---|---|
| **Date Completed** | |
| **Primary ESRD Diagnosis** | |
| **Other Medical Problems** | |
| **Infectious Precautions** | |
| **Allergies** | |
| **Blood Type (if known)** | |
| **Modality (type of treatment)** | |
| **Hemodialysis at home? (circle one)** | **YES / NO** |

Provincial Health Services Authority · BC Children's Hospital · fraserhealth · Interior Health · island health · northern health · Providence Health Care · Vancouver CoastalHealth

**Instructions:** Fill out card, cut around the dotted line, fold on the solid lines, and store in your wallet.

# For HD patients

BCRenal

PLANNING FOR **DISASTER**

## I am a dialysis patient:

Dialysis Unit Tel: _____

☐ Hemodialysis: In-centre ☐ Hemodialysis: Home ☐ Peritoneal Dialysis: Home

## For emergency responders:

1. Caution dialysis access.
2. Check electrolytes and/or ECG for hyperkalemia.
3. Give calcium or sodium polystyrene sulphonate (Calcium Resonium or Kayexelate) if hyperkalemia.

★ *Patient must be prioritized for transportation.*

## Emergency Instructions for Dialysis Patients

BCRenal

- If safe, wait at home. The dialysis unit will try to contact you.
- Listen for instructions on radio or TV.
- If you have no contact from the dialysis unit then go to the nearest shelter, emergency reception centre or the Emergency Department. **Tell them you need dialysis.**

**Begin Emergency Diet:**

1. **Restrict fluids to 2 cups a day or less.**
2. No salt, salty foods or salt substitutes.
3. No high potassium foods: potato, tomato, orange, banana, melon, dried fruit, legumes, vegetables.
4. Restrict lower potassium foods: apple, applesauce, grapes, berries, canned peaches, pears or pineapple to 4 servings a day (serving is ½ cup).
5. Restrict protein foods: meat, fish, poultry, egg or peanut butter to 3 ounces (90 grams) a day or ½ your usual intake.
6. Restrict milk or yogurt to ½ cup a day (evaporated milk ¼ cup). **Count milk as part of your fluid restriction.**
7. Use unsalted crackers, cookies, rice, noodles, cereal, roti or bread to add calories.
8. Use jam, jelly, honey, sugar, candies, margarine, butter or oil freely to add calories.
9. If you have diabetes: keep instant glucose tablets, sugar, jam, candies, low potassium fruit juices or sugared pop on hand to treat low blood glucose.

**This diet is not a substitute for dialysis. Be prepared:**
- Have an emergency pack filled with food and supplies on hand.
- Keep at least 3 days worth of your medications on hand.

## Patient Contact Information

BCRenal

**Name:** _____

**PHN:** _____ **DOB:** _____

**Address:** _____

**Tel:** _____ **Email:** _____

**Emergency Contact Name:** _____

**Tel:** _____ **Email:** _____

**Out of Province Contact Name:** _____

**Tel:** _____ **Email:** _____

# For PD patients

## I am on Peritoneal Dialysis (PD).

BCRenal

**Name:** _____

**My PD clinic is:**

☐ RCH ☐ ARH ☐ SMH ☐ VGH ☐ SPH ☐ KGH ☐ PRH ☐ RIH ☐ KBRH ☐ UHNBC ☐ RJH ☐ NRGH

**PD clinic telephone:** _____

**My nephrologist's name:** _____

**My nephrologist's telephone:** _____

## Local Emergency Department/Community Hospital Instructions

- Contact the PD clinic/Nephrologist ASAP for treatment direction.
- *Must be prioritized for transportation if directed by the Nephrologist.*
- Refer to BC Renal website guidelines and tools for information on clinical management of the patient on PD ➡

SCAN ME

**Clinical Care Paths**

- Peritonitis
- PD catheter infections
- Flow related complications
- Bowel management
- Catheter integrity malfunction
- Contamination of PD catheter
- Fluid assessment and management

**Performing PD Procedures**

- Performing a CAPD Baxter Twin Bag exchange
- Collecting a PD effluent specimen
- Changing a PD transfer set
- Adding medications to dialysate
- Performing an exit site dressing change

## Patient Instructions

BCRenal

**Be prepared:**

- Have your emergency PD supply bag stocked with PD solutions, minicaps, transfer set and red clamps at all times.
- Take your PD emergency supply bag with you if you need to go to your local emergency department.
- Provide the local emergency department with this information wallet card when you arrive.
- Bring your cloudy bag of PD solution with you to your local emergency department if you think you might have peritonitis.

## Appendix G: Provincial Guideline: Indications and Urgency Criteria for Surgical Peritoneal Dialysis Catheter Access: Procedures on Adults

### General Surgery

| Scheduled vs. Unscheduled | BC Surgical Priority Level (see note 4) | Wait Time Target | Description | Details |
|---|---|---|---|---|
| Unscheduled | Not identified | <24 hours | Immediate need for surgical intervention<br>*Insertion of PD catheter* | Inpatient<br>• Symptomatic renal failure<br>• Failing vascular (HD) access,<br>• Urgent new dialysis start within 48 hr. and not a candidate for bedside or radiological insertion,<br>• Non-functioning PD catheter for PD patient<br>• Failed bedside or radiological PD cath |
| | | | Immediate need for surgical intervention<br>*Removal of PD catheter* | Inpatient<br>• Acute peritonitis<br>• Tunnel infection |
| Scheduled | 1 | 2 weeks | General Surgery Other P1<br>*Insertion of PD catheter*<br><br>*Removal of PD catheter* | Outpatient<br>• Symptomatic renal failure with dialysis initiation within 2 weeks<br>• Failing HD access<br>• Urgent change in status<br>• Nonfunctioning PD catheter for current PD patient<br><br>Outpatient<br>• Recurrent peritonitis<br>• Tunnel infection<br>• Sclerosing peritonitis<br>• Fungal peritonitis |
| Scheduled | 2 | 4 weeks | General Surgery Other P2<br>*Insertion of PD catheter*<br><br>*Removal of PD catheter* | Outpatient<br>• Asymptomatic advanced renal failure with dialysis initiation within 6 weeks<br>Repair of hernia<br><br>Transferred to HD- noninfectious reasons |
| Scheduled | 3 | 6 weeks | General Surgery Other P3<br>*Insertion of PD catheter*<br><br>*Removal of PD catheter* | Asymptomatic advanced renal failure with estimated peritoneal dialysis start time less than 8 weeks<br><br>Post-transplant<br>Transfer to HD |

| Scheduled vs. Unscheduled | BC Surgical Priority Level (see note 4) | Wait Time Target | Description | Details |
|---|---|---|---|---|
| Scheduled | 4 | 12 weeks | General Surgery Other P4<br>Insertion of PD catheter | Asymptomatic advanced renal failure with estimated peritoneal dialysis start tie less than 3 months |
| Scheduled | 5 | 26 weeks | General Surgery Other P5 | Advanced renal failure with estimated peritoneal dialysis start date less than 6 months |

## Vascular Surgery

| Scheduled vs. Unscheduled | BC Surgical Priority Level (see note 4) | Wait Time Target | Description | Details |
|---|---|---|---|---|
| Scheduled | 1 | 2 weeks | CRF- poor dialysis access OR failing dialysis access (dialysis already underway) | Outpatient<br>• Symptomatic renal failure with dialysis initiation within 2 weeks<br>• Failing HD access<br>• Urgent change in status<br>• Nonfunctioning PD catheter for current PD patient<br><br>Outpatient<br>• Recurrent peritonitis<br>• Tunnel infection<br>• Sclerosing peritonitis<br>• Fungal peritonitis |
| Scheduled | 2 | 4 weeks | CRF – dialysis already started by catheter | Outpatient<br>• Asymptomatic advanced renal failure with dialysis initiation within 6 weeks<br><br>Repair of hernia<br><br>Transferred to HD- noninfectious |
| Scheduled | 3 | 4 weeks | CRF - dialysis anticipated within 3 months | Outpatient<br>Asymptomatic advanced renal failure |
| Scheduled | 4 | 6 weeks | CRF – dialysis anticipated within 3–6 months<br><br>Removal of insertion | Outpatient<br>Asymptomatic advanced renal failure<br><br>Post-transplant |
| Scheduled | 5 | 26 weeks | CRF – dialysis anticipated in more than 6months | Advanced renal failure |

## Notes:

1. Sched = scheduled; Unsched = unscheduled. CRF = Chronic Renal Failure
2. Refer to attachment #1 for a surgical HD procedure (AV fistula or AV graft).
3. Wait time targets for scheduled surgeries are the same as on the Vascular Surgery Provincial List of Patient Condition and Diagnosis Descriptions (V6 - 2015; Surgical Patient Registry). The latter does not identify wait times for unscheduled surgeries, so the ones above were developed by a Provincial Renal/VA Surgery Working Group and are specific to renal VA access procedures.
4. Wait Time Targets:
5. Adults = time from booking form received in OR to procedure date.
6. Children = time from decision to have surgery to procedure date.
7. BC Surgical Priority Levels:

| Priority Level | Wait Time Target (Wks) |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 5 |
| 4 | 12 |
| 5 | 26 |

# Appendix H: BC Renal Funding Model

## PD program entry - table 1

BC Provincial Renal Agency

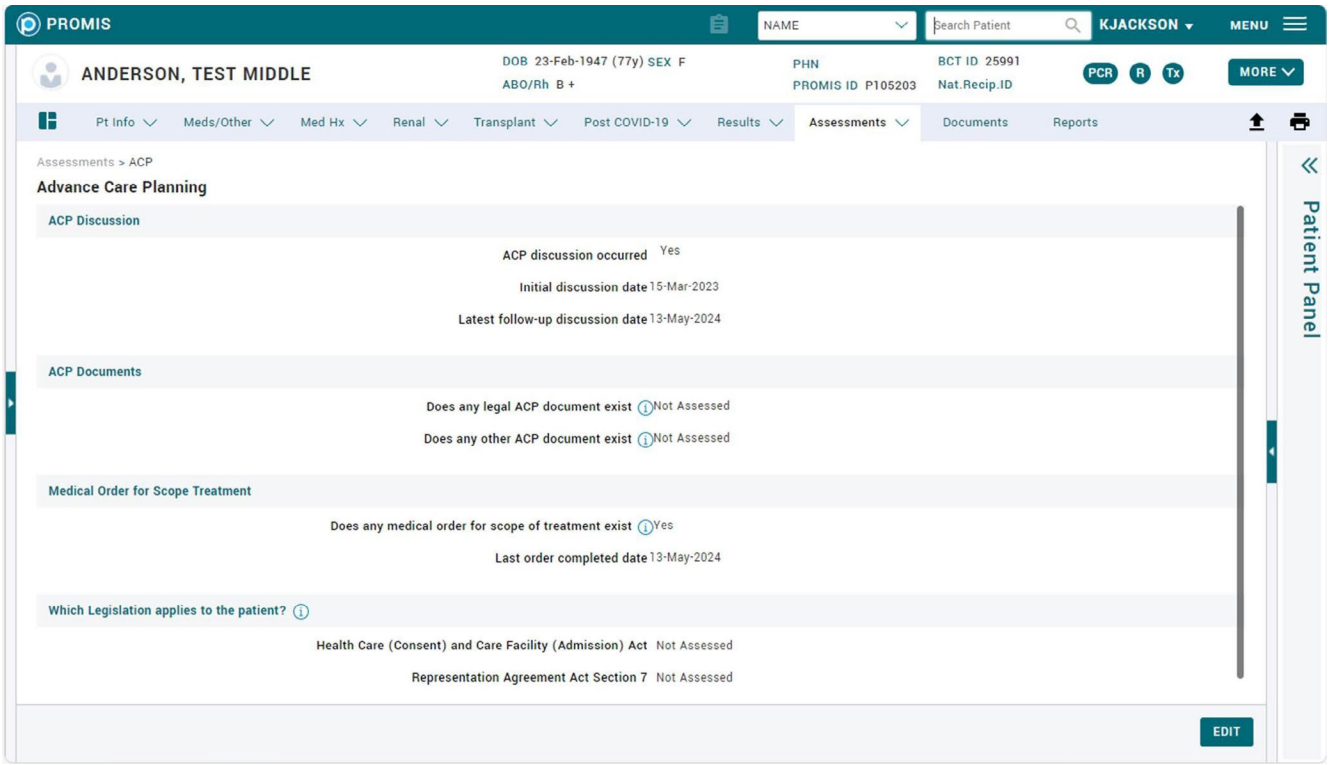
Appendix D: The key activities required for entry, maintenance and exit treatment for peritoneal dialysis patients.

| Activity Number | Task | Staff | Probability | Minutes | Probability adjusted minutes | Per | Patient year factor | Hours per patient year | Direct Hours per Staff Category | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Clerk | Dietitian | Pharm | RN | SW | Tech | Biomed | Nephrologist |
| **PD Program Entry** | | | | | | | | | | | | | | | | |
| Entry | Patient identification | RN | 100% | 10 | 10 | New case | 1 | 0.17 | | | | 0.17 | | | | |
| Entry | Patient identification | SW | 0% | 10 | 0 | New case | 1 | - | | | | | - | | | |
| 1 | Create training chart | RN | 100% | 20 | 20 | New case | 1 | 0.33 | | | | 0.33 | | | | |
| 1 | Create training chart | Clerk | 100% | 30 | 30 | New case | 1 | 0.50 | 0.50 | | | | | | | |
| 1 | Create training chart | Dietitian | 100% | 0 | 0 | | 1 | - | | - | | | | | | |
| Entry | Data entry | Clerk | 100% | 20 | 20 | New case | 1 | 0.33 | 0.33 | | | | | | | |
| 3 | Assess patient | RN | 100% | 30 | 30 | New case | 1 | 0.50 | | | | 0.50 | | | | |
| 3 | Conduct blood work: hematology, chemistry, iron panel, hepatitis series, parathyroid hormone, TSH | RN | 100% | 20 | 20 | New case | 1 | 0.33 | | | | 0.33 | | | | |
| 8 | In-unit insertion of bedside catheter or pre-post op teaching if surgical insertion | RN | 100% | 120 | 120 | New case | 1 | 2.00 | | | | 2.00 | | | | |
| **PD Catheter Healing** | | | | | | | | | | | | | | | | |
| 8 | Flush 1/week for approximately 3 weeks (excludes home care time but increased coordination time) | RN | 50% | 240 | 120 | New case | 1 | 2.00 | | | | 2.00 | | | | |
| 8 | Flush 1/week for approximately 3 weeks (if patient lives in | RN | 50% | 180 | 90 | New case | 1 | 1.50 | | | | 1.50 | | | | |
| 8 | IPD 3/week for approximately 3 weeks (10 hr per day x 3 | RN | 10% | 1350 | 135 | New case | 1 | 2.25 | | | | 2.25 | | | | |
| 8 | IPD 3/week for approximately 3 weeks (10 hr per day x 3 | RN | 10% | 0 | 0 | New case | 1 | - | | | | - | | | | |
| 8 | Consult during recovery period | Diet | 100% | 60 | 60 | New case | 1 | 1.00 | | 1.00 | | | | | | |
| 8 | Consult during recovery period | SW | 0% | 30 | 0 | New case | 1 | - | | | | | - | | | |
| **Hands on PD Preparation and Training** | | | | | | | | | | | | | | | | |
| 1 | Plan for patient | RN | 100% | 60 | 60 | New case | 1 | 1.00 | | | | 1.00 | | | | |
| 1 | Order supplies, and drugs and conduct other administrative tasks plus coordinate PH, HC nursing | RN | 100% | 60 | 60 | New case | 1 | 1.00 | | | | 1.00 | | | | |
| 1 | Order supplies, and drugs and conduct other administrative tasks | Clerk | 100% | 60 | 60 | New case | 1 | 1.00 | 1.00 | | | | | | | |
| 1 | Assessment by SW | SW | 0% | 30 | 0 | New case | 1 | - | | | | | - | | | |
| 1 | Assessment by pharmacist | Pharm | 100% | 31 | 31 | New case | 1 | 0.52 | | | 0.52 | | | | | |
| 1 | Train patient in self care (5 days x 6 hr / day 1:1 staffing) | RN | 100% | 1800 | 1800 | New case | 1 | 30.00 | | | | 30.00 | | | | |
| 1 | Post training phone monitoring (50 minutes per week x 3 weeks post training) | RN | 100% | 150 | 150 | New case | 1 | 2.50 | | | | 2.50 | | | | |
| 1 | Post training phone monitoring | SW | 0% | 30 | 0 | New case | 1 | - | | | | | - | | | |
| 1 | Post training phone monitoring | Dietitian | 100% | 30 | 30 | New case | 1 | 0.50 | | 0.50 | | | | | | |
| **PD Training Exit** | | | | | | | | | | | | | | | | |
| 1 | Update patient chart (10 min. per week x 3 weeks) | RN | 100% | 30 | 30 | New case | 1 | 0.50 | | | | 0.50 | | | | |
| 1 | Update patient chart | Clerk | 100% | 30 | 30 | New case | 1 | 0.50 | 0.50 | | | | | | | |
| 1 | Communicate orders to lab and pharmacy | RN | 100% | 10 | 10 | New case | 1 | 0.17 | | | | 0.17 | | | | |
| 1 | Overall coordination and arrange follow up visits | RN | 100% | 60 | 60 | New case | 1 | 1.00 | | | | 1.00 | | | | |
| 1 | Overall coordination and arrange follow up visits | Clerk | 100% | 30 | 30 | New case | 1 | 0.50 | 0.50 | | | | | | | |
| **Cycler training (assume 50% of new patients will get this)** | | | | | | | | | | | | | | | | |
| 1 | Training (4 hr x 1:1) in urban areas | RN | 25% | 240 | 60 | New case | 1 | 1.00 | | | | 1.00 | | | | |
| 1 | Training (8 hr x 1:1) in rural/remote areas | RN | 25% | 480 | 120 | New case | 1 | 2.00 | | | | 2.00 | | | | |
| 1 | Post training phone monitoring (30 minutes per week x 3 weeks post training) | RN | 50% | 90 | 45 | New case | 1 | 0.75 | | | | 0.75 | | | | |
| **Other activities in addition to regularly scheduled clinic visits** | | | | | | | | | | | | | | | | |
| 3 | Conduct PET test | RN | 100% | 120 | 120 | New case | 1 | 2.00 | | | | 2.00 | | | | |
| **Entry per new case** | | | | | | | | | **2.83** | **1.50** | **0.52** | **51.00** | - | - | - | - |

## Ongoing PD follow-up - table 2

| Activity Number | Task | Staff | Probability | Minutes | Probability adjusted minutes | Per | Patient year factor | Hours per patient year | Direct Hours per Staff Category | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Clerk | Dietitian | Pharm | RN | SW | Tech | Biomed | Nephrologist |
| **Ongoing PD Follow-up** | | | | | | | | | | | | | | | | |
| **Clinic Visits monthly for first year then quarterly (after first year 20% q 2 months)** | | | | | | | | | | | | | | | | |
| 3 | Communicate with, and assess patient | RN | 40% | 60 | 24 | Patient month | 12 | 4.80 | | | | 4.80 | | | | |
| 3 | Communicate with, and assess patient | RN | 20% | 60 | 12 | Patient 2 months | 6 | 1.20 | | | | 1.20 | | | | |
| 3 | Communicate with, and assess patient | RN | 40% | 60 | 24 | Patient quarter | 4 | 1.60 | | | | 1.60 | | | | |
| 3 | Coordinate and communicate with lab, pharmacy, GPs, and supplies (2.5 hours per 1/2 day clinic that has 8 | Clerk | 40% | 38 | 15.2 | Patient month | 12 | 3.04 | 3.04 | | | | | | | |
| 3 | Coordinate and communicate with lab, pharmacy, GPs, and supplies (2.5 hours per 1/2 day clinic that has 8 | Clerk | 20% | 38 | 7.6 | Patient 2 months | 6 | 0.76 | 0.76 | | | | | | | |
| 3 | Coordinate and communicate with lab, pharmacy, GPs, and supplies (2.5 hours per 1/2 day clinic that has 8 | Clerk | 40% | 38 | 15.2 | Patient quarter | 4 | 1.01 | 1.01 | | | | | | | |
| 3 | SW acuity of 0.89 intervention | SW | 98% | 287 | 275.52 | Patient year | 1 | 4.59 | | | | | 4.59 | | | |
| 3 | Communicate with, and assess patient | Dietitian | 50% | 45 | 22.5 | Patient month | 12 | 4.50 | | 4.50 | | | | | | |
| 3 | Assess medication needs and followup | Pharm | 80% | 31 | 24.8 | Patient quarter | 4 | 1.65 | | | 1.65 | | | | | |
| **Other activities in addition to regularly scheduled clinic visits** | | | | | | | | | | | | | | | | |
| 3 | Conduct monthly lab tests | RN | 60% | 15 | 9 | Patient month | 12 | 1.80 | | | | 1.80 | | | | |
| 3 | Deliver iron infusion (if required) | RN | 8% | 60 | 4.8 | Patient month | 12 | 0.96 | | | | 0.96 | | | | |
| 3 | Conduct K+/v test (15 min + 15 min modelling) | RN | 50% | 30 | 15 | Patient quarter | 4 | 1.00 | | | | 1.00 | | | | |
| 3 | Coordinate and communicate with lab, pharmacy, GPs, and order additional tests | RN | 50% | 30 | 15 | Patient month | 12 | 3.00 | | | | 3.00 | | | | |
| 3 | Update orders and make prescription changes, provide further education and order supplies | RN | 50% | 30 | 15 | Patient month | 12 | 3.00 | | | | 3.00 | | | | |
| | Support above acitivites | Clerk | 60% | 15 | 9 | Patient month | 12 | 1.80 | 1.80 | | | | | | | |
| 3 | Update orders and make changes, provide further education and order additional tests | Diet | 50% | 15 | 7.5 | Patient month | 12 | 1.50 | | 1.50 | | | | | | |
| **Manage acute episodes of care** | | | | | | | | | | | | | | | | |
| 1 | Clinic visit for peritonitis episode (acutal experience is about 30% of total patient years) | RN | 15% | 240 | 36 | Patient year | 1 | 0.60 | | | | 0.60 | | | | |
| 1 | Manage/coordinate peritonitis episode remotely | RN | 15% | 240 | 36 | Patient year | 1 | 0.60 | | | | 0.60 | | | | |
| 1 | Manage/coordinate hospital admission (assume 1 admission per patient year) | RN | 100% | 120 | 120 | Patient year | 1 | 2.00 | | | | 2.00 | | | | |
| **PD Nurse additonal 1hr/mo** | | | | | | | | | | | | **12.00** | | | | |
| **Maintenance per patient year** | | | | | | | | | **6.61** | **6.00** | **1.65** | **32.56** | **4.59** | - | - | - |
| **PD Exit** | | | | | | | | | | | | | | | | |
| Exit | Coordinate patient transfer to palliative | RN | 20% | 120 | 24 | Discharged | 1 | 0.40 | | | | 0.40 | | | | |
| Exit | Discharge procedures due to death | RN | 50% | 20 | 10 | Discharged | 1 | 0.17 | | | | 0.17 | | | | |
| Exit | Coordinate patient transfer (to HD) | RN | 30% | 45 | 13.5 | Discharged | 1 | 0.23 | | | | 0.23 | | | | |
| Exit | Coordinate patient transfer | Clerk | 100% | 60 | 60 | Discharged | 1 | 1.00 | 1.00 | | | | | | | |
| **Per Discharge** | | | | | | | | | **1.00** | - | - | **0.79** | - | - | - | - |

# Appendix I: Advance Care Planning Module (PROMIS)



# 18.0 References


1. Advanced Care Planning; retrieved from https:// www.uptodate.com/contents/advance-care- planning-and-advance-directives
2. Bernadini J, Price V, et al. PD training. Peritoneal Dialysis International 2006; Vol. 26: 625–632
3. BC Renal agency Peritoneal Dialysis Guideline: Bedside Percutaneous Insertion/Removal of chronic peritoneal dialysis catheters. November 2013. Retrieved from: http://www.bcrenalagency. ca/resource-gallery/Documents
4. Counts C. ANNA Core Curriculum for Nephrology Nursing 2008; (5th ed.):765-851
5. Dionne Janis, d'Agincourt-Canning L. Sustaining Life or prolonging dying? An appropriate choice of conservative care for children in end stage renal disease: an ethical framework. Pediatric Nephrology 2015; 30:1761-1769
6. Crabtree J. H, et al. Catheter insertion and care. Access Care and Complications Management Update 2012; Retrieved from http://www.qxmd. com/references/access-care-guide
7. Crabtree JH. Fluoroscopic placement of peritoneal dialysis catheters: a harvest of long hanging fruits. Peritoneal Dialysis International 2008; Mar-Apr 28(2): 134-7.
8. Daugirdas John T, Blake Peter G, Ing Todd S. Handbook of Dialysis 4th edition. Wolters Kluwer, Lippincott Williams and Wilkins 2007; 387-405
9. Facing the facts; The impact of Chronic Disease in Canada. 2014. Retrieved from www.who.int/chp/ chronic_disease_report/media/CANADA.pdf · PDF file
10. Figueiredo A, et al. Clinical practice guidelines for peritoneal access. Peritoneal Dialysis International 2010; 30: 424-429.
11. Figueiredo A, Bernardini J, Bowes E, Hiramatsu M, et al. A Syllabus for Teaching Peritoneal Dialysis to Patients and Caregivers. International Society of Peritoneal Dialysis 2016; http://www.pdiconnect. com/content/36/6/592.abstract
12. Ghaffari A, Kumar V. Guest S. Infrastructure requirements for an urgent start peritoneal dialysis program. Peritoneal dialysis International 2013; Vol. 33:.611-617
13. Glasgow R.E., Davis C.L., Funnell M.M., Beck,
14. A. Implementing practical interventions to support chronic illness self-management. Joint Commission Journal on Quality and safety 2003, 29(11): 563-574.
15. Goal setting guide. 2008. Retrieved from http:// www.goal-setting-guide.com/smart-goals.html
16. Henderson Lee W, Thuma Richard S. Quality Assurance in Dialysis 2nd edition. Kluwar academic publishers. 1999. Print
17. Knowles, MS. The Adult Learner: The definitive classic in adult education and human resource development. Gulf Publishing 1998
18. Levin A, Lo C, Noel K, Djurdev O, Amano E. Activity- Based Funding Model Provides Foundation for Province Wide Best Practices in Renal Care. Health Care Quarterly 2013; Vol.16 N. 4
19. Lorig K, et al. Living a healthy life with chronic conditions: self-management of heart disease,arthritis, diabetes, asthma, bronchitis, emphysema and others, (3rd ed.). Bull publishing company. 2006
20. Manns B. J., Mendelssohn D. C, Taub K. J. The economics of end-stage renal disease care in Canada: incentives and impact on delivery of care. Int J Health Care Finance Econ 2007:7(2-3):149-169
21. McGowan Patrick. Self-management support for health care providers. Workshop at Royal Columbian Hospital, Vancouver BC 2013.
22. National Institute for Health and Clinical Excellence, Peritoneal Dialysis in the treatment of stage 5 chronic kidney disease, July 2011 NICE clinical guideline: 125
23. Oliver M. J., Verrelli M., Zacharias J. M., et al. Choosing peritoneal dialysis reduces the risk of invasive access interventions. Nephrology Dialysis Transplantation. 2012;27(2):810–816. doi: 10.1093/ ndt/gfr289
24. Quinn R. R., Ravani P., Zhang X., et al. Impact of modality choice on rates of hospitalization in patients eligible for both peritoneal dialysis and hemodialysis. Peritoneal Dialysis International. 2014;34(1):41–48. doi: 10.3747/pdi.2012.00257.
25. Report of the Renal Association Working Party on Peritoneal Access 2008. Retrieved from http:// www.renal.org/pages/guidelines/peritonealaccess
26. Scope of Practice for Licensed Practical Nurses. Revised June 16, 2017
27. Transitions of Care toolkit developed by the forum of ESRD networks medical advisory council 2015

28. Wang A. Y.-M, Lai K. The importance of residual renal function in dialysis patients. Kidney International. 2006;69(10):1726–1732. doi: 10.1038/ sj.ki.5000382.

29. Wei F, Zhaohui N, Qian J. Key Factors for a High- Quality Peritoneal dialysis Program- The Role of the PD Team and Continuous Quality Improvements. Peritoneal Dialysis International 2014 June 34(2) S 35-42 1 (Australian Model for Home)

30. Wilkie , Can We Make Better Use of Checklists to Improve Peritoneal Dialysis Outcomes? Perit Dial Int January-February 2017 37:3;

31. Bevilacqua, M. U., Turnbull, L., Saunders, S., Er, L., Chiu, H., Hill, P., Singh, R.S., Levin, A., Copland, M.A., Jamal, A., Brumby, C., Dunne, O., & Taylor, P. A. (2017). Evaluation of a 12-month pilot of long-term and temporary assisted peritoneal dialysis. Peritoneal Dialysis International, 37(3), 307-313.

32. Mehrotra, R., Chiu, Y. W., Kalantar-Zadeh, K., & Vonesh, E. (2009). The outcomes of continuous ambulatory and automated peritoneal dialysis are similar. Kidney international, 76(1), 97-107.

33. Brown, E. A., Blake, P. G., Boudville, N., Davies, S., de Arteaga, J., Dong, J., Finkelstein, F., Foo, M., Hurst, H., Johnson, D.W., Johnson, M., Liew, A., Moraes, T., Perl, J., Shroff, R., Teitelbaum, Wang, A.Y., & Warady, B. (2020). International Society for Peritoneal Dialysis practice recommendations: Prescribing high-quality goal-directed peritoneal dialysis. Peritoneal Dialysis International, 40(3), 244-253.

34. Wong, S. N., Turnbull, L., Saunders, S., Er, L., Bevilacqua, M. U., Levin, A., & Singh, R. S. (2024). Evaluation and outcomes of a 5-year assisted peritoneal dialysis program. Peritoneal Dialysis International, 44(3), 177-184.

35. Crabtree, J. H., Shrestha, B. M., Chow, K. M., Figueiredo, A. E., Povlsen, J. V., Wilkie, M., Abdel-Aal, A., Cullis, B., Goh, B., Briggs, V.R., Brown, E.A., & Dor, F. J. (2019). Creating and maintaining optimal peritoneal dialysis access in the adult patient: 2019 update. Peritoneal Dialysis International, 39(5), 414-436.