

Assisting with the Bedside (Percutaneous) Removal of Chronic Peritoneal Dialysis Catheters

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<http://www.bcrenalagency.ca/healthcare-professionals/guidelines-protocols-clinical-tools>

Related procedure: Assisting with the Bedside¹ (Percutaneous) Insertion of Chronic Peritoneal Dialysis Catheters (on the BCPRA website).

1.0 PRACTICE STANDARD

Skill Level (Nursing):

Nurses² who have received orientation to the procedure, potential complications and relevant peritoneal dialysis (PD) equipment and supplies may assist the physician with bedside PD catheter removals.

A two-hour orientation to PD catheter insertions and removals is anticipated to be sufficient for nurses who have experience in peritoneal dialysis or assisting with procedures. A longer time may be required for those who do not have peritoneal dialysis experience or experience in assisting with procedures. Orientation to include observation of one procedure and assistance (gloved) with second.

¹ Throughout this document “bedside” procedure refers to a procedure performed in a setting outside the operating room.

² Nothing in current legislation or the standards of the Licensed Practical Nurses (LPN) College of BC precludes an LPN in assisting with PD catheter insertions/removals. Employer policies may limit LPN practice in a particular hospital or unit after consideration of factors such as the availability of support, education, experts for consultation, staffing levels, etc. If conscious sedation is utilized, a formalized Operating Room LPN program may be required (information based on telephone communication with the CLPNBC, May 2009, 2013).

Need to Know:**Pre-PD bedside catheter removal:**

- Written consent must be obtained prior to initiating the procedure.
- Anticoagulants (including acetylsalicylic acid or Aspirin®) and antiplatelet drugs are discontinued 5 days prior to the procedure to prevent bleeding (if they have not been, please inform the physician performing the procedure).
- An international normalized ratio (INR) may be ordered 3 days prior or just prior to the procedure to measure coagulation status (if ordered, ensure results are available on the chart prior to the procedure).
- Patients are not asked to complete a bowel preparation prior to the procedure.
- Patients may eat and drink normally on the day of the procedure.
- Patients are asked to take their regular medications on the day of the procedure.
- Pre-procedure antibiotics are not given to the majority of patients. Post-kidney transplant patients are an exception and the BC Transplant nephrologist will usually order pre and post catheter removal antibiotics (IV and/or oral antibiotics for pre catheter removal and oral antibiotics for post catheter removal) for these immunosuppressed patients.
- Patients need to be empty of dialysate (if not, need to drain prior to catheter removal).
- Procedure is done using local anaesthetic (area of the primary incision is anaesthetized). Anti-anxiety medication may also be offered.

During PD bedside catheter removal: Use maximal sterile barrier precautions:

- Staff: surgical mask covering mouth and nose, surgical cap or hood, sterile or clean gown and sterile gloves.
- Patient: gown or pajamas and sterile drapes from head to toe with the abdomen exposed. A mask covering the patient's mouth and nose is recommended, especially if patient is methicillin-resistant staphylococcus aureus (MRSA) positive or has an airborne infectious disease.

Post-PD bedside catheter removal:

- Dressing over the incision remains in place for one to two weeks post-procedure (unless dressing is not intact or wound requires assessment secondary to pain, wet dressing or suspected infection).
- Patients return to the PD clinic or another designated area one or two weeks post-procedure to have their sutures removed.

Potential complications of PD bedside catheter removals include:

- Bleeding
- Infection

2.0 EQUIPMENT

- PD catheter insertion tray (see Appendix 1 of guideline on Assisting with the Bedside Insertion of Chronic PD Catheters)
 - Sterile gloves x 2
 - Sterile or clean gowns x 2
 - Surgical cap or hood x 2
 - Sterile towel x 1 (to dry hands)
 - Masks x 3 (MD, RN, patient)
 - Syringe and needle
 - Soaker (blue) pads x 2
 - Antiseptic solution and scrub brush
 - Lidocaine with epinephrine
 - 1 set of retractors/spreader
 - Beta or Kelly clamp
 - Sutures
 - Dressing over incision site (e.g. Mepore)
- Cautery or silver nitrate sticks should be ready for use if needed.

3.0 ASSESSMENT AND INTERVENTIONS

Preparation for PD catheter removal:

1. Ensure timely arrival of patient (1 hour prior to procedure).
2. Ensure consent has been signed.
3. Record patient's current condition including vital signs (BP, pulse, and temperature), blood glucose using portable meter (if patient has diabetes) and allergies.
4. If ordered and not already performed, arrange to have blood drawn for stat INR (need results prior to starting the procedure).
5. Assess need and, if required, request order for pre-medication. Administer pre medication.
6. If post-kidney transplant patient, ensure pre and post catheter removal antibiotics have been ordered (if not, contact the nephrologist or BCTS). Administer pre-removal antibiotics.
7. Ensure patient is empty of dialysate (or drain prior to removal).
8. Position patient supine and close to the edge of the bed in the flat position. Drape the patient and fold patient's arms on chest (i.e. out of the way). Expose the abdomen.
9. Place soaker pads under the patient's trunk area.
10. Wash hands with conventional antiseptic-containing soap and water or with waterless alcohol-based gels or foams.

During PD catheter removal:

1. Don surgical mask and cap or hood, sterile or clean gown and sterile gloves.
2. Place mask on patient, especially if patient is methicillin-resistant staphylococcus aureus (MRSA) positive or has an airborne infectious disease.
3. Open the outer wrapper of the PD insertion tray. Open inner wrapper with lifting forceps.
4. Add to the tray: syringe and needle for local anaesthetic and abdominal pads (2).
5. Add antiseptic to bowl.
6. Ensure sterile gown and towel are accessible for doctor.

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7. Close inner wrapper of tray.
8. Position the prepared garbage can and sharps container.
9. Open the inner wrapper of tray with the lifting forceps when doctor arrives.
10. Provide assistance to physician as required:
 - o Assistance to gown
 - o Local anaesthetic
11. Cleanse incision and apply dressing to site as per protocol.
12. Monitor vital signs.
13. Remove gloves and wash hands with conventional antiseptic-containing soap and water or with waterless alcohol-based gels or foams.

Post-PD removal:

1. Monitor vital signs until stable.
2. Observe the exit site and dressing over the incision site for frank bleeding.
3. Obtain order to restart anticoagulants or antiplatelets as necessary.
4. Discharge according to program specific criteria (usually within 1–2 hours of procedure unless given pre-medication):
 - o Vital signs within normal range for patients.
 - o No evidence of bleeding at incision or exit site.
 - o Able to ambulate.
 - o Patient teaching completed (see next section).

4.0 PATIENT EDUCATION AND RESOURCES**Pre-PD bedside catheter removal topics:**

- Information about the procedure
- Medication changes for day of procedure
- Showering the night before and/or morning of procedure
- What to bring to the hospital the day of the procedure (snack and medications)
- What to wear (loose clothes such as jogging suit) the day of the procedure
- What to expect during the recovery period

Post-PD bedside catheter removal topics:

- Dressing care
- No showers, baths or swimming until your nurse or doctor tells you
- Management of discomfort/pain
- No heavy exercise or lifting until your nurse or doctor tells you
- If post-transplant patient, post-removal antibiotics
- Follow-up appointment to have sutures removed
- When to call for medical assistance (kidney doctor, nurse or emergency department)

5.0 DOCUMENTATION

1. Document patient tolerance to the procedure and any complications, length of the procedure, time and mode of discharge and blood loss in the patient record.
2. Document insertions, re-insertions, and removals in the Dialysis Access module in PROMIS.

6.0 REFERENCES

1. American Nephrology Nurses' Association. (2008). *Core Curriculum for Nephrology Nursing, 5th ed.*, 777-795.
2. Ash, S. (2003). Chronic peritoneal dialysis catheters: overview of design, placement, and removal procedures. *Seminars in Dialysis, 16*(4), 323-324.
3. Asif, A. (2004). Peritoneal dialysis access-related procedures by nephrologists. *Seminars in Dialysis, 17*(5), 398-406.
4. Flanigan, M. and Gokal, R. (2005). Peritoneal catheters and exit-site practices toward optimum peritoneal access: a review of current developments. *Peritoneal Dialysis International, 25*, 132-139.

7.0 DEVELOPED BY

1. BC PD Clinicians Group
2. Adapted from: PD Catheter Management, Royal Columbian Hospital

8.0 REVIEWED BY

1. BC PD Clinicians Group
2. BC Provincial Renal Agency - Medical Advisory Committee