| Recommended Practice Resource | |
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*This document has been adopted for use at the Shared Health level by all Shared Health staff and at all Shared Health governed sites, including contracted facilities.*

This document is evidence-informed and reflects current best practices identified through a review of relevant literature during its development. It has been reviewed and endorsed by Kidney Health Manitoba, and the Provincial Clinical Policy Committee to support consistency and quality in clinical practice across the province. This document is intended to be used in alignment with the Peritoneal Dialysis Measuring Peritoneal Dialysis Adequacy: Kt/V Collection Provincial Clinical Guideline.

**Title:** Peritoneal Dialysis Measuring Peritoneal Dialysis Adequacy: CAPD Recommended Practice Resource

**Document Number:** 615.105.100-RP-03
**Category:** 615 – Provincial Medicine Program
**Subcategory:** 615.105 – Kidney Health Manitoba

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## 1.0. Scope

**1.1.** This recommended practice resource applies to all staff working in a peritoneal dialysis unit in Manitoba that provide care to patients with chronic kidney disease.

**1.2.** This recommended practice resource applies to the assessment of peritoneal dialysis prescription adequacy for patients utilizing Continuous Ambulatory Peritoneal Dialysis (CAPD) therapy. It establishes standardized procedures and evidence-based practices to ensure accurate and consistent evaluation of dialysis effectiveness, supporting optimal patient outcomes and timely adjustments to therapy as needed.

## 2.0. Definitions

### 2.1. Defined Terms

2.1.1 **Continuous Ambulatory Peritoneal Dialysis** is a manual form of peritoneal dialysis that includes the filling and emptying of your abdomen with dialysate which is called an exchange. An exchange

may be done 3 to 5 times during the day, and once during the night to remove wastes, chemicals, and extra fluid from your body.

2.1.2 **Kt/V:** A key measure used in dialysis to quantify how effectively waste products (mainly urea) are being removed from a patient's blood. (K=Clearance × t=time / V=Volume)

2.1.3 **Peritoneal Dialysis** is a type of dialysis used to treat people with kidney failure. Unlike hemodialysis, which filters blood outside the body using a machine, peritoneal dialysis uses the lining of your abdomen (the peritoneum) as a natural filter to remove waste, toxins, and excess fluids from the blood.

2.1.4 **Sharesource:** The Vantive Sharesource is a wireless service program to deliver patient treatment information to the peritoneal dialysis unit and to the Vantive Company. The Vantive automated peritoneal dialysis systems may be used with the Vantive Sharesource program. The patient must consent for the transmission of personal health information (treatment information) to the PD unit and to Vantive to use this software. The patient must sign an electronic consent with the initial treatment on the specific machine and every time the machine is swapped.

2.1.5 **Twin Bag:** Trademark name for dialysate solution used to perform continuous ambulatory peritoneal dialysis.

### 2.2. Abbreviations

2.2.1 **CAPD:** Continuous Ambulatory Peritoneal Dialysis

2.2.2 **Kt/V:** Adequacy Test (K=Clearance × t=time / V=Volume)

2.2.3 **mL:** Milliliters

2.2.4 **PD:** Peritoneal Dialysis

## 3.0. Training

**3.1.** During orientation to the peritoneal dialysis unit a demonstration and practice opportunity will be provided.

## 4.0. Equipment/ Supplies

**4.1.** 24-hour urine collection container

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4.1.1 Other collection containers are not accepted by the laboratory.

**4.2.** Clean red clamps × 2

**4.3.** Patient Addressograph Labels

**4.4.** Peritoneal Dialysis Kt/V Requisition (Shared Health Form - R250-10-84)

**4.5.** 24 Hour Urine Collection Requisition (Urine Chemistry Testing Requisition Shared Health Form – R250-10-95) – If required by the site

**4.6.** Serum Testing Requisition (Hospital Biochemistry/Hematology Requisition Shared Health Form – R250-10-93) (If Required)

**4.7.** Clean scissors

**4.8.** Equipment for Continuous Ambulatory Peritoneal Dialysis (CAPD) exchanges

4.8.1 As per Peritoneal Dialysis Bag Exchange Utilizing Twin Bag . This would include:

4.8.1(a) Twin Bag prescribed dialysate solution (as ordered)

4.8.1(b) Medication (if ordered)

4.8.1(c) MiniCap Disconnect Cap (× 2)

4.8.1(d) Clean red clamps (× 2)

4.8.1(e) IV Pole (optional)

4.8.1(f) Graduated cylinder

4.8.1(g) Tape (optional)

4.8.1(h) Heparin 1,000 units/mL (optional)

4.8.1(i) Towel/incontinent pad

**4.9.** Clean, single use paper bag (Optional)

4.9.1 For supplies given to patient for home collection.

## 5.0. Procedure

### 5.1. Key Points:

5.1.1 Adequacy of the peritoneal dialysis (PD) prescription involves both peritoneal and residual renal clearance of waste products from the

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blood, thus all urine and peritoneal dialysis effluent is collected in a 24-hour period. A blood sample is taken with the 24-hour urine and peritoneal dialysis effluent collection. This is called a Kt/V collection.

5.1.1(a) Patients are advised that Kt/V samples and lab work need to be completed at the same laboratory within 24 hours of collection.

5.1.2 A Kt/V collection is performed 4 – 6 weeks after initiation of peritoneal dialysis, 6 months thereafter or as directed by the PD unit.

5.1.2(a) If patient is on antibiotics for infection (peritonitis) hold any scheduled Kt/V collection until one month post completion of antibiotics.

5.1.2(b) If the patient is experiencing issues, rebook the Kt/V collection after resolution.

5.1.2(c) When modeling is done resulting in prescription changes, then remodeling is done one month after implementation of those prescription changes.

5.1.3 The Kt/V collection results are entered into a modeling software program by the peritoneal dialysis nurse and the patient's peritoneal dialysis prescription is modified to attain maximal clearance. The patient's lifestyle and preferences are factored into the peritoneal dialysis prescription.

5.1.3(a) The modeling is not done with every Kt/V collection. The modeling is done if the adequacy is not met and/or the patient is symptomatic.

5.1.3(b) All Kt/V results are entered into Sharesource, but not all Kt/V collections are entered into the modeling software.

5.1.4 Peritoneal dialysis patients are taught Kt/V collection with their initial PD training. Instructions and supplies for home collection are provided at the end of the training period and as required by the peritoneal dialysis unit.

**5.2.** Start 24-hour urine collection:

5.2.1 Discard the first morning urine.

5.2.2 Collect all urine including the first morning urine of the next day.

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5.2.3 Perform hand hygiene and don gloves before handling used urine containers. Doff gloves and perform hand hygiene after handling urine containers.

**5.3.** Start 24-hour dialysate collection:

5.3.1 Perform hand hygiene and follow Routine Practices for Infection Prevention and Control. Maintain aseptic technique for all connections/disconnections.

5.3.2 Discard the effluent of the morning CAPD bag exchange.

5.3.3 Collect the effluent of the exchanges for the next 24 hours including the first morning exchange of the next day.

5.3.3(a) Heparin can be instilled as required.

5.3.3(b) If instilling heparin, perform hand hygiene prior to instillation.

5.3.4 The dialysate used can be Dianeal, Extraneal, or Physioneal.

**5.4.** Prepare and send the effluent bags for testing:

5.4.1 Cut the excess tubing off and tie and clamp all ports.

5.4.2 Affix a patient addressograph label and identify each bag #1, #2, etc.

**5.5.** Perform hand hygiene and follow Routine Practices for Infection Prevention and Control.

**5.6.** Fill in Peritoneal Dialysis Kt/V Requisition (Shared Health Form - R250-10-84).

**5.7.** Complete 24-hour urine requisition (Urine Chemistry Testing Requisition Shared Health Form – R250-10-95) and send specimen. Ensure container is labeled with a Patient Addressograph Label.

5.7.1 At St Boniface Hospital – Any and all urine is sent for testing.

5.7.2 At Seven Oaks Hospital, if 24-hour urine collection is <100 mL, do not send and indicate ‘Anuria Patient’ on Peritoneal Dialysis - Kt/V Requisition (Shared Health Form - R250-10-84). If two consecutive 24-hour urine collections are <100 mL, then no need to collect urine for subsequent Kt/V’s.

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5.7.3 Patient's height and dry weight must be documented for the test to be performed.

**5.8.** Ensure serum tests (glucose, albumin, creatinine, and urea) have been performed within the past 24 hours at the same laboratory where the Kt/V will be processed.

5.8.1 If serum testing has not been completed, please complete Hospital Biochemistry/Hematology Requisition Shared Health Form – R250-10-93, check off glucose, albumin, creatinine and urea. Direct patient to go to the laboratory for blood sample collection.

**5.9.** Send specimens to biochemistry laboratory and follow routine infection control practices.

**5.10.** Perform hand hygiene and follow Routine Practices for Infection Prevention and Control.

**5.11.** Provide patient with clean red clamps and new urine container for the next collection (if applicable).

**5.12. Documentation**

5.12.1 Patient Health Record

5.12.1(a) An Integrated Progress Note (IPN) should be written indicating:

- That the patient brought in a Kt/V
- Document the number of day bag(s)
- Whether or not a urine sample was collected
- Description of effluent (clear, fibrin present, etc.)

5.12.1(b) Date of Kt/V collection and result (note 24-hour urine volume on kardex).

5.12.1(c) Any changes to peritoneal dialysis prescription.

- Ensure the Peritoneal Dialysis Patient Kardex is updated with any changes.

## 6.0. Resources

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**6.1.** Peritoneal Dialysis Measuring Peritoneal Dialysis Adequacy: Kt/V Collection Provincial Clinical Guideline.

**6.2.** Peritoneal Dialysis - Kt/V Requisition Shared Health Form - R250-10-84.

**6.3.** Urine Chemistry Testing Requisition Shared Health Form – R250-10-95.

**6.4.** Peritoneal Dialysis Bag Exchange Utilizing Twin Bag.

**6.5.** Hospital Biochemistry/Hematology Requisition Shared Health Form – R250-10-93 (if required).

**6.6.** Patient Instructions for Collection of 24-Hour Urine Specimens. Patient Brochure 24 Hour Urine Collection PB110-50-01ENG V5.1

**6.7.** Shared Health Blood and Urine Testing. Lab Information Manual. Lab Information Manual (2014 SBH).

**6.8.** Shared Health Routine Practices Protocol for Infection Prevention and Control (May 1, 2024).

**6.9.** Shared Health Use of Personal Health Information Without Consent Policy 310.140.103 (January 1, 2022).

## 7.0. References

**7.1.** Patterson, P. A., Neumann, J. L. & Chavies, T. L. (2022). Peritoneal Dialysis. Bodin, S.M. (Editor). Contemporary Nephrology Nursing (4th Edition). Anthony J. Jannetti, Pitman: New Jersey. pp. 285 – 331.

**7.2.** Todd, L., Ales, L.M. & Lambertson, K. (2020) Peritoneal Dialysis. Counts, C.S. (Editor). Core Curriculum for Nephrology Nursing (7th Edition). Anthony J. Jannetti, Pitman: New Jersey. pp 1127 – 1221.

## 8.0. Contact(s)

**8.1.** **Document Sponsor:** Lead – Provincial Clinical Integration, Health Service Integration & Quality – Shared Health

**8.2.** **Document Owner(s):** Peritoneal Dialysis Policy & Procedure Working Group, Kidney Health Manitoba – Shared Health

## Document Review History

- 18-AUG-2025 – Infection, Prevention & Control - [Endorsed]

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- 29-JUL-2025 – Kidney Health Manitoba Peritoneal Dialysis Policy & Procedure Working Group – [Endorsed]
- 19-FEB-2026 – Provincial Clinical Policy Committee – [Endorsed]
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