

**PERITONEAL DIALYSIS (PD) CATHETER (AND EXTENSION SET) – MANAGEMENT OF CONTAMINATION**

<p><b>Cross References</b> (including NSW Health/ SESLHD policy directives)</p>	<p><a href="#">NSW Health PD2013_043 - Medication Handling in NSW Public Health Facilities</a>  <a href="#">NSW Health PD2007_036 - Infection Control Policy</a>  <a href="#">SGH-TSH CLIN027 - Aseptic Technique - Competency and Education Requirements</a>  <a href="#">NSW Health PD2012_007 - User applied Labelling of Injectable Medicines, Fluids and Lines</a>  <a href="#">SESLHD PR283 - Patient with Acute Condition for Escalation (PACE) Management of the Deteriorating Adult and Maternity Inpatient</a>  <a href="#">SGSHHS CLIN238 - Peritoneal Dialysis – After Hours Management Of Outpatients</a>                      Afterhours – PD Catheter Contamination Management on 4 South; Renal Department Protocol                      Peritoneal Dialysis – Peritonitis Management; Renal Department Protocol                      Peritoneal Dialysis – Intraperitoneal Vancomycin Administration; Renal Department Protocol                      Peritoneal Dialysis – Intraperitoneal Gentamicin Administration (40 milligram); Renal Department Protocol                      Peritoneal Dialysis – Changing PD Catheter Extension Set; Renal Department Protocol                      Peritoneal Dialysis – Changing PD Catheter Titanium Connector And Extension Set; Renal Department Protocol                      Peritoneal Dialysis - Fluid Specimen Collection (Continuous Ambulatory Peritoneal Dialysis - CAPD); Renal Department Protocol</p>
<p><b>1. What it is</b></p>	<p>A guideline and procedure for the safe and timely management of contaminated PD catheter to prevent complications and peritonitis.</p>
<p><b>2. Risk Rating</b></p>	<p>Medium</p>
<p><b>3. Employees it Applies to</b></p>	<p>Registered Nurses (RN) trained in peritoneal dialysis                      RN trained in accessing peritoneal dialysis catheters                      Medical Officers (MO) trained in accessing peritoneal dialysis catheters</p>

**4. Process**

**4.1 Recommended prophylactic (decontamination) antibiotic treatment for contaminated PD catheter**

- Stat intraperitoneal (IP) dose of:
  - Vancomycin 30mg/kg (maximum 2g)
  - Gentamicin 40mg
- Both antibiotics can be combined in 2 Litre PD fluid and dwell for 6-8 hours

#### 4.2 Causes of PD catheter or extension set contamination

- Disconnection of PD catheter extension set from titanium connector
- Accidental exposure of PD catheter extension set (i.e. minicap fell off)
- Accidental disconnection of PD catheter extension set from dialysis lines whilst on dialysis
- Accidental cutting, split or hole on PD catheter and/or PD catheter extension set
- Faulty PD catheter extension set
- Connection to a faulty or contaminated dialysis lines

#### 4.3 Management process for contaminated PD catheter during PD unit's operating hours (Monday to Friday, 0730-1600)

1. When the patient contacts the PD unit, advise to:
  - a) Immediately place the blue clamp on the PD catheter closest to the skin;
  - b) STOP dialysis and disconnect;
  - c) Close the white valve on PD catheter extension set and cover with minicap;
  - d) Present to the PD unit immediately or present to emergency department (ED) if unwell
2. Upon patient's presentation to the unit, PD nurses would:
  - a) Notify the renal team to review patient and to:
    - i. Order PD fluid for microscopy culture and sensitivity (MCS);
    - ii. Order IP antibiotics as per above recommendation
  - b) Change the PD catheter extension set and/or titanium connector as required and as per Changing PD Catheter Extension Set or Changing PD Catheter Titanium Connector And Extension Set; Renal Department Protocol
  - c) Obtain PD fluid specimen for MCS from patient as per Fluid Specimen Collection (CAPD); Renal Department Protocol
  - d) Administer prophylactic antibiotics via CAPD freeline solo bag as per Intraperitoneal Vancomycin and Gentamicin Administration; Renal Department Protocol
  - e) Leave antibiotics dwelling for 6-8 hours
  - f) ***If patient becomes unwell during the procedure:*** Inform the renal team to review patient and organise direct admission. PACE criteria applies according to [SESLHD PR283 - Patient with Acute Condition for Escalation \(PACE\) Management of the Deteriorating Adult and Maternity Inpatient](#) and the adult observation chart.
  - g) ***If patient remains well until the procedure is completed but PD fluid culture result revealed white cell count (WCC) greater than 100:*** Inform the renal team to review patient and organise direct admission.
  - h) ***If patient remains well until the procedure is completed and PD fluid culture WCC is less than 100:*** Discharge patient with post procedure instruction to dwell intraperitoneal antibiotics for 6 hours before connecting to APD or CAPD to drain out;
  - i) Document procedure in the clinical notes

#### 4.4 After-hours management process for contaminated PD catheter (including public holiday and weekend)

1. When the patient contacts 4 South, staff must advise the patient to:
  - a) Stop dialysis and disconnect
  - b) Clamp the dialysis line, close the valve and cover the PD catheter with minicap
  - c) Present to 4 South immediately. Patients presenting after 2200hrs or after the main hospital entrance door is closed will need to obtain access to 4 South via the Emergency Department (ED). Patients need to advise ED Clerical staff of their appointment, security will then be contacted to escort patients to the ward.
2. The In-charge RN must inform the After Hours Nurse Manager, Bed Manager, after-hours Resident Medical Officer (RMO) and renal consultant-on-call of the expected admission.
3. When the patient presents to 4 South, the in-charge RN must initiate the admission process:
  - a) Complete the direct admission form (refer to afterhours-PDC contamination direct admission form) emphasising patient is to be admitted into the 4 South overcensus (4SM\_OVPD01) bed and send form to hotline (fax 33923);
  - b) Hotline patient through switch and generate front sheet and labels from IPM.
4. Once the patient is admitted, notify the afterhours RMO to:
  - a) Order PD fluid for MCS;
  - b) Order IP antibiotics as per above recommendation
  - c) Document admission notes.
5. The In-charge RN or delegate will attend to the decontamination procedure:
  - a) Change the PD catheter extension set and/or titanium connector as required and as per Changing PD Catheter Extension Set or Changing PD Catheter Titanium Connector And Extension Set; Renal Department Protocol;
  - b) Obtain PD fluid specimen for MCS from patient as per Fluid Specimen Collection (CAPD); Renal Department Protocol;
  - c) Administer prophylactic antibiotics via CAPD freeline solo bag as per Intraperitoneal Vancomycin and Gentamicin Administration; Renal Department Protocol
  - d) Leave antibiotics dwelling for 6-8 hours
6. **If patient becomes unwell during the procedure:** inform the after-hours RMO, renal consultant on-call, After Hours Nurse Manager and/or Bed Manager. PACE criteria applies according to [SESLHD PR283 - Patient with Acute Condition for Escalation \(PACE\) Management of the Deteriorating Adult and Maternity Inpatient](#) and the adult observation chart;
7. **If patient becomes unwell during the procedure:** inform the 4<sup>th</sup> floor afterhours RMO, renal consultant on-call, After Hours Nurse Manager and/or Bed Manager. PACE criteria applies according to [SESLHD PR283 - Patient with Acute Condition for Escalation \(PACE\) Management of the Deteriorating Adult and Maternity Inpatient](#) and the adult observation chart
8. **If patient remains well until the procedure is completed but PD fluid culture result revealed white cell count (WCC) greater than 100:** inform the 4<sup>th</sup> floor afterhours

RMO, renal consultant-on-call, After Hours Nurse Manager and/or Bed Manager that the patient will need a longer stay admission.

9. **If patient remains well until procedure is completed and peritoneal dialysis culture WCC was less than 100:** discharge patient and inform After Hours Nurse Manager and/or bed manager of discharge.
10. Discharge patient with post procedure instruction to dwell IP antibiotics for 6 hours before connecting to APD or CAPD to drain out at home;
11. Document procedure in the clinical notes;
12. Forward relevant documents to the PD Unit;
13. Notify the PD unit via voicemail ext 33770 or 33775;

**4.5 Follow-up process by the PD nurses post PD catheter decontamination**

1. Follow-up patient the next day and until required;
2. For patients who were decontaminated in 4 South:
  - a) Copy forwarded documents and file in patient’s PD folder;
  - b) Send original copy of admission and clinical notes to medical records
3. Book a repeat PD fluid culture one week after the last antibiotic dose.

<b>5. Keywords</b>	Peritoneal dialysis catheter, PD catheter contamination, PD catheter decontamination, Extension set contamination
<b>6. Functional Group</b>	Renal, Peritoneal Dialysis
<b>7. External References</b>	<p>Bannister, K. (2014). The influence of peritoneal dialysis systems and solutions on the incidence of peritonitis and catheter-related infections. <i>The KHA-CARI Guidelines – Caring for Australasians with Renal Impairment</i> [cited 2015 March]; Available from: <a href="http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html">http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html</a></p> <p>Bender F., Bernardini, J., Piraino, B. Prevention of Infectious Complications in Peritoneal Dialysis: Best Demonstrated Practices. <i>Kidney International</i> 70: S44-S54, 2006</p> <p>Li, P. K., Szeto, C., Piraino, B., Bernardini, J., Figueiredo, A., Gupta, A., Johnson, D., Kuijper, E., Lye, W., Salzer, W., Shaefer, F., and Struijk, D. G. (2010). Peritoneal Dialysis – Related Infections Recommendations 2010 Update. <i>Peritoneal Dialysis International</i>, 30(4), 393-423. doi: 10.3747/pdi.2010.00049</p> <p>Dombros, N., Dratwa, M., Feriani, M., Gokal, R., Heimbürger, O., Krediet, R., . . . Verger, C. (2005). European best practice guidelines for peritoneal dialysis. 4 Continuous ambulatory peritoneal dialysis delivery systems. <i>Nephrology Dialysis Transplantation</i>, 20 Suppl 9, ix13-ix15. doi: 10.1093/ndt/gfi1118</p> <p>Piraino B., Baile, G., Bernardini, J. and et al. ISPD Guidelines/Recommendations Peritoneal Dialysis Related Infections Recommendations: 2005 Update. <i>Peritoneal Dialysis International</i> 25: 107-131, 2005</p> <p>Walker, A. (2014). Management of peritoneal dialysis-associated peritonitis in adults and children. <i>The KHA-CARI Guidelines – Caring for Australasians with Renal Impairment</i> [cited 2015 March]; Available from: <a href="http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html">http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html</a></p>

<p><b>8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)</b></p>	<p>Not applicable</p>
<p><b>9. Implementation and Evaluation Plan</b> Including education, training, clinical notes audit, knowledge evaluation audit etc</p>	<ul style="list-style-type: none"> <li>- Included in the education tools developed to assist nurses in increasing their knowledge to the care of patients on peritoneal dialysis i.e. Renal care flip chart, advance and basic PD learning package and PD orientation package</li> <li>- Monthly inservice education by PD CNC/nurses to all renal nurses</li> <li>- PD tutorial to Junior Medical Officers by the PD CNC at the beginning of renal rotation</li> </ul>
<p><b>10. Knowledge Evaluation</b></p>	<p>Q1: When and why is PD catheter decontamination required? A: PD catheter decontamination must be performed immediately right after a PD catheter is contaminated to prevent complications and reduce the risk of peritonitis.</p> <p>Q2: When is a PD catheter considered contaminated: A: There are several causes of PD catheter contamination:</p> <ul style="list-style-type: none"> <li>• Disconnection of PD catheter extension set from titanium connector</li> <li>• Accidental exposure of PD catheter extension set (i.e. minicap fell off)</li> <li>• Accidental disconnection of PD catheter extension set from dialysis lines whilst on dialysis</li> <li>• Accidental cutting, split or hole on PD catheter and/or PD catheter extension set</li> <li>• Faulty PD catheter extension set</li> <li>• Connection to a faulty or contaminated dialysis lines</li> </ul> <p>Q3: Where is PD catheter decontamination procedure performed? A: In the PD unit during PD unit's operating hours (Monday to Friday, 0730-1600) or in 4 South after-hours (including public holiday and weekends)</p> <p>Q4: What are the antibiotics used for PD catheter decontamination? A: Combination of Vancomycin (2g) and Gentamicin (40mg) given intraperitoneally via CAPD and to dwell for 6-8 hours</p>
<p><b>11. Who is Responsible</b></p>	<p>Director of St George and Sutherland Renal Service. Nursing Unit Manager, Dialysis Unit</p>

<b>Approval for PERITONEAL DIALYSIS (PD) CATHETER (AND EXTENSION SET) – MANAGEMENT OF CONTAMINATION * N/A where appropriate</b>	
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**Revision and Approval History**

Date	Revision number	Author (Position)	Revision due
July 2016	0	Anna Claire Cuesta (PD CNC)	July 2019

<b>General Manager's Ratification</b>	
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