

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

<p>Cross References (including NSW Health/ SESLHD policy directives)</p>	<p>NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities NSW Health PD2017_013 Infection Prevention and Control Policy Australian Commission on Safety and Quality in Health Care National Standard for User Applied Labelling of Injectable Medicines, Fluids and Lines SESLHD PR283 Patient with Acute Condition for Escalation (PACE) Management of the Deteriorating Adult and Maternity Inpatient SGH-TSH CLIN027 Aseptic Technique - Competency and Education Requirements SGH CLIN238 Peritoneal Dialysis – After Hours Management Of Outpatients SGH CLIN 442 Peritonitis Management and Treatment Renal SGH WPI 093 Peritoneal Dialysis – Changing PD Catheter Extension Set Renal SGH WPI 094 Peritoneal Dialysis – Changing PD Catheter Titanium Connector And Extension Set PD SGH WPI 145 Peritoneal Dialysis - Fluid Specimen Collection via CAPD Freeline Solo Exchange SGH CLIN Intraperitoneal Vancomycin Administration SGH CLIN Intraperitoneal Gentamicin Administration (40 milligram)</p>
<p>1. What it is</p>	<p>A guideline and procedure for the safe and timely management of contaminated PD catheter to prevent complications and peritonitis.</p>
<p>2. Risk Rating</p>	<p>Medium</p>
<p>3. Employees it Applies to</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
- Exposure of PD catheter tip or extension set (i.e. minicap fell off)
- Disconnection of PD catheter extension set from dialysis lines whilst on dialysis

- Damage to PD catheter and/or PD catheter extension set i.e. cut, split or hole
- 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)

4.3.1 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

4.3.2 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 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 [Renal SGH WPI 093 Peritoneal Dialysis – Changing PD Catheter Extension Set](#) or [Renal SGH WPI 094 Peritoneal Dialysis – Changing PD Catheter Titanium Connector And Extension Set](#)
- c) Obtain PD fluid specimen for MCS from patient as per [PD SGH WPI 145 Peritoneal Dialysis - Fluid Specimen Collection via CAPD Freeline Solo Exchange](#)
- d) Administer prophylactic antibiotics via CAPD freeline solo bag as per *SGH CLIN Intraperitoneal Vancomycin Administration* and *SGH CLIN XXX Intraperitoneal Gentamicin Administration (40 milligram)*
- 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](#)
- 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 for inpatient treatment of peritonitis as per [SGH CLIN 442 Peritonitis Management and Treatment](#).
- 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 at home;
- i) Document procedure in the clinical notes

4.4 After-hours management process for contaminated PD catheter

⇒ After hours is defined as Mon-Fri 1600-0730, weekends Fri 01600 – Mon 0730 and public holiday

4.4.1 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 4South 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.
- 4.4.2 The In-charge RN must inform the After Hours Senior Nurse Manager, Bed Manager, after-hours RMO and renal consultant-on-call of the expected admission.
- 4.4.3 When the patient presents to 4 South, the in-charge RN must initiate the admission process:
- a) Complete the direct admission form as per [SGH CLIN238 Peritoneal Dialysis – After Hours Management Of Outpatients](#)
 - b) Hotline patient through switch and generate front sheet and labels from IPM.
 - c) Patient will be admitted to the overcensus bed for the duration of the procedure. (Refer to 4.4.6 and 4.4.7 if patient deteriorates and requires admission)
- 4.4.4 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.
- 4.4.5 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 [Renal SGH WPI 093 Peritoneal Dialysis – Changing PD Catheter Extension Set](#) or [Renal SGH WPI 094 Peritoneal Dialysis – Changing PD Catheter Titanium Connector And Extension Set](#);
 - b) Obtain PD fluid specimen for MCS from patient as per [PD SGH WPI 145 Peritoneal Dialysis - Fluid Specimen Collection via CAPD Freeline Solo Exchange](#);
 - c) Administer prophylactic antibiotics via CAPD freeline solo bag as per *SGH CLIN Intraperitoneal Vancomycin Administration* and *SGH CLIN XXX Intraperitoneal Gentamicin Administration (40 milligram)*
 - d) Leave antibiotics dwelling for 6-8 hours
- 4.4.6 ***If patient becomes unwell during the procedure***
- Inform the after-hours RMO, renal consultant on-call to advice of patient deterioration.
 - Inform the After Hours Nurse Manager and/or Bed Manager to advise that patient has deteriorated and requires admission.
 - PACE criteria applies according to [SESLHD PR283 - Patient with Acute Condition for Escalation \(PACE\) Management of the Deteriorating Adult and Maternity Inpatient](#)
- 4.4.7 ***If patient remains well until the procedure is completed but PD fluid culture result revealed white cell count (WCC) greater than 100***
- Inform the afterhours RMO and renal consultant-on-call to commence inpatient treatment for peritonitis as per [SGH CLIN 442 Peritonitis Management and Treatment](#).
 - Inform the After Hours Nurse Manager and/or Bed Manager to advise that patient has to commence peritonitis treatment and requires admission.
- 4.4.8 ***If patient remains well until procedure is completed and peritoneal dialysis culture WCC was less than 100:***
- Discharge patient with post procedure instruction to dwell IP antibiotics for 6 hours before connecting to APD or CAPD to drain out at home.

- Inform After Hours Nurse Manager and/or Bed Manager of discharge.
- 4.4.9 Document procedure in eMR clinical notes and PD chart;
- 4.4.10 Forward relevant documents to the PD Unit;
- 4.4.11 Notify the PD unit via voicemail ext 33770/33775;

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

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

5. Keywords	Peritoneal dialysis catheter, PD catheter contamination, PD catheter decontamination, Extension set contamination
6. Functional Group	Renal, Peritoneal Dialysis
7. External References	<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: http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html</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>Li, P. K.-T., Szeto, C. C., Piraino, B., de Arteaga, J., Fan, S., Figueiredo, A. E., . . . Johnson, D. W. (2016). ISPD Peritonitis Recommendations: 2016 Update on Prevention and Treatment. <i>Peritoneal Dialysis International</i>, 36(5), 481-508. doi: 10.3747/pdi.2016.00078</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>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>Piraino, B., Bernardini, J., Brown, E., Figueiredo, A., Johnson, D. W., Lye, W.-C., . . . Szeto, C.-C. (2011). ISPD Position Statement on Reducing the Risks of Peritoneal Dialysis–Related Infections. <i>Peritoneal Dialysis International</i>, 31(6),</p>

	<p>614-630. doi: 10.3747/pdi.2011.00057</p> <p>Szeto, C.-C., Li, P. K.-T., Johnson, D. W., Bernardini, J., Dong, J., Figueiredo, A. E., . . . Brown, E. A. (2017). ISPD Catheter-Related Infection Recommendations: 2017 Update. <i>Peritoneal Dialysis International</i>, 37(2), 141-154. doi: 10.3747/pdi.2016.00120</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: http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html</p>
8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)	Not applicable
9. Implementation and Evaluation Plan Including education, training, clinical notes audit, knowledge evaluation audit etc	<p>Inservices</p> <p>Learning Packages</p> <p>Publication on SGSHHS CIBR intranet page</p>
10. Knowledge Evaluation	<p>Q1: When and why is PD catheter decontamination required?</p> <p>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?</p> <p>A: Several causes of PD catheter contamination are:</p> <ul style="list-style-type: none"> • Disconnection of PD catheter extension set from titanium connector • Exposure of PD catheter tip or extension set • Disconnection of PD catheter extension set from dialysis lines whilst on dialysis • Damage to PD catheter and/or PD catheter extension set • Faulty PD catheter extension set • Connection to a faulty or contaminated dialysis lines <p>Q3: Where is PD catheter decontamination procedure performed?</p> <p>A: In the PD unit during PD unit's operating hours (Monday to Friday, 0730-1600) or in 4South after-hours (including public holiday and weekends)</p> <p>Q4: What are the antibiotics used for PD catheter decontamination?</p> <p>A: Combination of Vancomycin (2g) and Gentamicin (40mg) given intraperitoneally via 2 Litre CAPD and to dwell for 6-8 hours</p>
11. Who is Responsible	<p>Director of St George and Sutherland Renal Services</p> <p>Nursing Unit Manager, Dialysis Unit</p>

SGH CLIN357 Clinical Business Rule

Approval for (PERITONEAL DIALYSIS CATHETER AND EXTENSION SET – MANAGEMENT OF CONTAMINATION)	
Specialty/Department Committee	Committee title: Peritoneal Dialysis Committee Chairperson name/position: Dr Franziska Petit, Staff Specialist Date: 03.04.19
Nurse Manager	Name/position: Christine Day, Nurse Manager Medicine Date: 15.04.19
Medical Head of Department	Name /position: George Mangos, Department Head Renal Services Date: 04.04.19
Safe Use of Medicines Committee (SGH)	Chairperson's Name: A/Prof Winston Liauw Date: 20.08.19
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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
May 2019	1	(Anna) Claire Cuesta (PD CNC)	May 2022

General Manager's Ratification	
Name: Leisa Rathborne	Date: 30.10.19