# Peritoneal Dialysis (PD) – Intraperitoneal Additives and Antibiotics

## Cross References

- NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities
- NSW Health PD2017_013 Infection prevention and Control Policy
- NSW Health PD2016_058 User applied Labelling of Injectable Medicines, Fluids and Lines
- Australian Commission on Safety and Quality in Health Care National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines
- NSW Health PD2014_024 Patient Identification Bands
- Commission on Safety and Quality in Healthcare: Guidelines for use of the National Inpatient Medication Chart (NIMC)
- NHMRC Australian Guidelines for the prevention and control of Infection in Healthcare
- SESLHDPD/160 Medication: Administration by Enrolled Nurses
- SESLHDPD/140 Waste management
- SGH-TSH CLIN191 Labels for injectable medicines, fluids and lines - ordering and applying of
- SGH-TSH CLIN027 - Aseptic Technique - Competency and Education Requirements
- SGH CLIN 433 Peritoneal Dialysis (PD) Catheter Infection – Exit Site and Tunnel Infection Management and Treatment
- SGH CLIN Peritoneal Dialysis (PD) – Peritonitis Management and Treatment
- SGH CLIN379 Intraperitoneal Actilyse (Alteplase) Administration
- SGH CLIN380 Intraperitoneal Heparin Administration
- SGH CLIN364 Peritoneal Dialysis Catheter (PDC) – Heparin lock
- SGH CLIN381 Intraperitoneal Potassium Administration
- SGH CLIN415 Intraperitoneal Lignocaine (Lidocaine) Administration
- SGH CLIN 357 Peritoneal Dialysis Catheter (and Extension set) – Management of Contamination

## 1. What it is

A guideline summarising the responsibilities of registered nurses (RN), medical officers (MO) and pharmacists in relation to intraperitoneal (IP) additives and antibiotics. It also describes the processes which must be complied with for the intraperitoneal administration of additives and antibiotics via the peritoneal dialysis catheter (PDC) route according to best practice guidelines to optimise safety of patients and staff.

## 2. Risk Rating

Medium

## 3. Employees it Applies to

- Registered Nurses (RN), Enrolled Nurses (EN)
- Medical Officers (MO)
- Pharmacists
4. Process
Intraperitoneal (IP) administration of additives and antibiotics is recommended for the localised delivery of some medications for PD patients.

List of medications recommended for IP administration are:

1. Alteplase (Actilyse) according to SGH CLIN379 Intraperitoneal Actilyse (Alteplase) Administration
2. Heparin according to SGH CLIN380 Intraperitoneal Heparin Administration and SGH CLIN364 Peritoneal Dialysis Catheter (PDC) – Heparin lock
3. Potassium according to SGH CLIN381 Intraperitoneal Potassium Administration
4. Lignocaine/Lidocaine according to SGH CLIN Intraperitoneal Lignocaine (lidocaine) Administration
5. All antibiotics listed in the SGH CLIN PD – Peritonitis Management and Treatment, SGH CLIN PD Catheter Infection – Exit Site and Tunnel Infection Management and Treatment and SGH CLIN 357 Peritoneal Dialysis Catheter (and Extension set) – Management of Contamination

4.1 RESPONSIBILITIES/LIMITATIONS FOR PRACTICE and ACCREDITATION REQUIREMENTS

- The following accreditation for RNs must be successfully achieved prior to administration of IP additives and antibiotics:
  1. Intra-Peritoneal (IP) Additive Loading and Administration as per assessment form (Appendix A)
  2. Continuous Ambulatory Peritoneal Dialysis (CAPD) Freeline Solo Exchange as per assessment for (Appendix B)
- PD accredited RNs administering IP additives and antibiotics must refer to NSW Health PD2013_043 - Medication Handling in NSW Public Health Facilities and must ensure the medication is administered according to the specific drug related recommendations in the:
  1. PD Clinical Business Rules (CBR) or renal department protocols approved by the Drug and Therapeutics Committee.
  3. MIMS pharmaceutical product information
  4. Product information supplied from the manufacturer with the drug
- All medications for IP administration for inpatients must be prescribed on the eMED power-form. For outpatients seen in the peritoneal dialysis unit (PDU) all IP medications must be prescribed on the National Inpatient Medication Chart (NIMC)
- All medications for IP administration must be double checked and counter signed prior to and/or during the administration
- All dialysis fluid used for the delivery of IP additives and antibiotics must be double checked prior to administration and documented on the designated PD chart and/or clinical notes.
- Accreditation requirements must be complied with for the delivery of IP additives and antibiotics
- IP additives and antibiotics can only be administered by PD accredited RNs or RNs under the supervision of PD accredited RNs
4.2 PRESCRIBING AND DOCUMENTATION OF INTRAPERITONEAL ADDITIVES AND ANTIBIOTICS

- IP additives and antibiotics must be prescribed in writing by the MO on the NIMC for outpatients and eMeds for inpatients.
- For outpatients in the peritoneal dialysis unit Emergency telephone orders are permitted according to NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities
- If prescription varies from these information sources, consult the MO prior to IP administration. It is the responsibility of the MO to clarify the order
- Any variation to medication administration recommended by a pharmacist should be documented by the pharmacist in the patient’s clinical notes or RN may transcribe in the clinical notes stating the pharmacist’s name.
- Dialysis fluid used for the delivery of IP additives and antibiotics must be documented on the designated PD chart and/or clinical notes.

4.3 PREPARATION OF IP ADDITIVE AND ANTIBIOTICS

- Infection control and occupational health and safety principles must be followed
- Aseptic non touch technique must be followed in preparation and administration
- Medications may only be given into a compatible dialysis fluid and with other compatible medications at a concentration recommended in the specific PD CIBRs or renal department protocols
- Ensure medication added into the dialysis fluid is not trapped in the port and mixed thoroughly by inverting and shaking the bag several times
- Mandatory requirements related to user-applied labels on injectable medicines, fluids and lines to be complied with as per Australian Commission on Safety and Quality in Health Care National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines.

4.4 CHECKING IP ADDITIVE AND ANTIBIOTICS PRIOR TO ADMINISTRATION

The following must be checked by two staff. First check must be by an RN and double checked by another RN, EN, MO or Pharmacist (Note: IP additive and antibiotics can only be administered by a PD accredited RN or RN under the supervision of PD accredited RN).
- Prescription
- Recommended references (refer to PD Clinical Business Rules or renal department protocols, MIMS, product information sheet and/or Australian Injectable Drugs Handbook)
- Correct drug, diluent, time, expiry date, dose and route
- Correct dialysis fluid strength, volume, expiry date, colour and for leakage
- Correct patient – check identification and adverse reaction history
- All checks above must be carried out by the bedside with both staff members and must be administered immediately to ensure medication is administered to the correct patient

4.5 LABELLING IP ADDITIVE AND ANTIBIOTICS PRIOR TO ADMINISTRATION

- An additive label is to be completed and signed by the two people who have checked the IP medication and dialysis fluid.
- The additive label must be affixed to the dialysis bag in a way that the contents label may be inspected.
- As a minimum, the label must include:
4.6 IDENTIFICATION OF ADVERSE MEDICATION REACTION

- The first prescriber must obtain the patient’s allergy/drug reaction history from the patient / next of kin (NOK)
- When an adverse reaction is identified the specific nature of the reaction must be electronically documented in Powerchart or the NIMC for outpatients in the peritoneal dialysis unit e.g. nausea and vomiting, erythematous rash, anaphylaxis, laryngeal oedema
- The allergy is NOT to be written on the red patient identification band as these bands are used as a code to identify the presence of an allergy only. Specifics are documented in the clinical notes
- Name of the medication is documented by the prescribing MO
- RN and pharmacists may also document allergies/adverse events

4.7 INFECTION CONTROL

- Hand hygiene MUST be performed before and after preparation of IP additives and antibiotics
- Hand hygiene must be performed before donning and after removal of gloves
- A clean trolley must be used for preparation of IP additives and antibiotics and a clean kidney dish must be used to carry prepared medications
- Sharps must be discarded into a designated sharps container close to point of use
- Aseptic non touch technique must be maintained at all times
- The additive port must be swabbed with alcohol or chlorhexidine swabs and allowed to dry, prior to injecting the medication
- Empty dialysis bags and dispose into general waste if not contaminated with blood. If contaminated, they must be disposed into clinical waste.

4.8 PROCEDURE

4.8.1 Devices

- Equipment
  - Trolley
  - Recommended diluent for IP additives or antibiotics
  - Alcohol or chlorhexidine swabs
  - Blue clamp
- Key Parts
  - Prescribed additive or antibiotic
  - Drawing up needle (18G)
  - Injection needle (21G)
  - Syringe
  - Peritoneal dialysis fluid
• **Key Site**
  - Rubber bung or opening of additive or antibiotic vial or ampoule
  - Rubber bung on PD fluid
  - PD catheter

4.8.2 **Procedure**

1. If PD fluid is required to deliver the IP additive or antibiotic, select the appropriate PD fluid strength by conducting a fluid assessment and warm the selected PD fluid using a warmer 30 minutes prior to procedure.

2. Ensure the “5 Rights” of Principles for Safe Medication Administration is observed with second person check.

3. Perform hand hygiene.

4. Identify and gather equipment and key parts for procedure.

5. Check expiry dates on additives/antibiotics ampoules/vials, recommended diluent and PD fluid.

6. Clean trolley/work surface with detergent.

7. Perform hand hygiene.

8. Don gloves.

9. Prepare general aseptic field equipment and key parts at the bedside.

10. If PD fluid is required to deliver the IP additives or antibiotics:
    a. Open the outer pouch of the dialysis bag using the sharp edge of the blue clamp. **DO NOT USE SCISSORS OR KNIVES**
    b. Place the opened bag on top of the clean trolley and ensure the lines are facing up.
    c. Recheck the dialysis bag strength, volume, expiry, colour and for leakage.

11. Prepare the additive/antibiotic using aseptic technique ensuring all the key parts/sites are protected by:
    a. Swabbing the opening or rubber bung of additives/antibiotics ampoules/vials with alcohol or chlorhexidine swabs;
    b. Using a draw up needle to dilute medication and aspirate.
    c. Swabbing the additive port with alcohol or chlorhexidine swabs and wait to dry prior to injecting medication.
    d. Use a new needle with smaller bore to carefully inject medication into the dialysis bag.
    **Note:** Discard dialysis bag if bag or side of the additive port is accidentally pierced or leaking.

12. Administer the correct dosage/volume of IP medication directly or via dialysis bag as per specific PD CBR.

13. After completion, wear PPE and discard equipment as per SESLHDPD/140 Waste management.

14. Remove gloves and PPE.

15. Perform hand hygiene.

16. Clean trolley after use and perform hand hygiene.

17. Sign and co-sign eMED powerform for inpatients. Outpatient peritoneal dialysis unit to sign/co-sign the NIMC.

18. Document procedure on the PD chart and clinical notes.

19. Handover to the next shift and inform PD team.
5. Keywords | Intraperitoneal, Peritoneal dialysis, Catheter, Peritonitis, Catheter contamination
---|---
6. Functional Group | Renal, Peritoneal Dialysis

Ballinger, A. P., Suetonnia; Wiggins, Kathryn; Craig, Jonathan; Johnson, David; Cross, Nicholas; Strippoli, Giovanni (2014). Treatment for peritoneal dialysis-associated peritonitis. *Cochrane Database of Systematic Reviews, 4.* doi: 10.1002/14651858.CD005284.pub3


8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)  
Not applicable

9. Implementation and Evaluation Plan  
- Included in the education tools developed to assist nurses in increasing the knowledge to the care of patients on peritoneal dialysis.  
- In-service education at ward/unit/department level  
- PD tutorial to Junior Medical Officers by the PD CNC at the beginning of renal rotation

10. Knowledge Evaluation  
Q1: What medications may be administered through the intraperitoneal route?  
A: Actilyse, Heparin, Lignocaine, Potassium and any antibiotic listed in the PD CBRs  
Q2: Who can administer IP additive/antibiotic?  
A: PD accredited RNs or RNs under the supervision of PD accredited RNs  
Q3: What checks must take place prior to administering IP additive/antibiotic to a patient?  
A: Correct prescription, patient, drug, dialysis fluid, diluent, expiry date, dose, route, time and adverse reaction history

11. Who is Responsible  
Director of St George and Sutherland Renal Service.  
Nursing Unit Manager, Dialysis Unit


Society of Hospital Pharmacists. Australian Injectable Drugs Handbook (7th edition or later)


## Approval for Intraperitoneal Additives and Antibiotics

| *Specialty/Department Committee | Committee title: Peritoneal Dialysis Committee  
Chairperson name/position: Franziska Pettit, Staff Specialist  
Date: 08.05.18 |
|---|---|
| *Nursing/Midwifery Co-Director | Name/position: Kim Bonnici, A/Nurse Manager Medicine 1  
Date: 13.05.18 |
| *Medical Co-Director | Name/position: George Mangos, Department Head Renal Services  
Date: 07.05.18 |
| *Drug and Therapeutics Committee (SGH) | Chairperson’s Name: A/Prof Winston Liauw  
Date: 06.08.18 |
| Contributors to CIBR development  
e.g. CNC, Medical Officers (names and position title/specialty) | Anna Claire Cuesta PD CNC. Suman Adhikari Pharmacist SES St George Clinical Services. Emma Vella RN |

## Revision and Approval History

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<th>Author (Position)</th>
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<td>May 2018</td>
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<td>Anna Claire Cuesta (PD CNC)</td>
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## General Manager’s Ratification

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Appendix A

Intra-Peritoneal (IP) Additive Loading and Administration Assessment Form

Limitations for Practice:
Registered Nurse
Clinical Nurse Specialist
Clinical Nurse Consultant

Objective:
To ensure IP additive loading and administration is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety.

Background:
1. IP additive loading and administration assessment and competency is compulsory for 4S and ED nursing staff prior to attending to the procedure.
2. Nursing staff with no exposure to IP additive loading and administration must observe the procedure then practice under supervision by a PD competent nurse.
3. The assessor will advise the number of practice sessions the nursing staff requires prior to a final assessment.
4. Simulated practice sessions are encouraged until technique is safe and satisfactory for a final assessment.
5. Final assessment is to be performed on a patient.
6. Final assessment is to be carried out by a PD competent nurse.
7. IP additive loading and administration competency is to be renewed every 5 years.
8. A reassessment may be necessary in line with protocol revisions.

Note:
1. Keep the original copy of your completed assessment form for your record.
2. Forward a copy of the completed assessment form to the CNE and PD unit.

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Practice 5 (P5) Assessor’s name & initial: ___________ Date: ___________
Competent (C) Assessor’s name & initial: ___________ Date: ___________
Appendix B

Continuous Ambulatory Peritoneal Dialysis (CAPD)
Freeline Solo Exchange Assessment form

Limitations for Practice:
- Enrolled Nurse
- Registered Nurse
- Clinical Nurse Specialist
- Clinical Nurse Consultant

Objective:
To ensure CAPD Freeline Solo exchange procedure is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety.

Background:
1. CAPD assessment and competency is compulsory for 4S and ED nursing staff prior to attending a CAPD procedure.
2. Nursing staff with no CAPD exposure must observe a CAPD procedure then practice under supervision by a CAPD competent nurse.
3. The assessor will advise the number of practice sessions the nursing staff requires prior to a final assessment.
4. Simulated practice sessions are encouraged until CAPD technique is safe and satisfactory for a final assessment.
5. Final assessment is to be performed on a patient.
6. Final assessment is to be carried out by a CAPD competent nurse.
7. CAPD competency is to be renewed every 5 years.
8. A reassessment may be necessary in line with CAPD protocol revisions.

Note:
1. Keep the original copy of your completed assessment form for your record.
2. Forward a copy of the completed assessment form to the CNE and PD unit.

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Approved by: SGH & TSH Clinical Governance Documents Committee / Safe Use of Medicines Committee
Date: June 2018
Trim No.T18/47503

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