

**CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD) FREELINE SOLO
EXCHANGE PROCEDURE**

Cross references	NSW Health PD2017_013 Infection Prevention and Control Policy NHMRC Australian Guidelines for the prevention and control of Infection in Healthcare NSW Health PD2017_026 Clinical and Related Waste Management for Health Services SGH-TSH CLIN027 Aseptic Technique - Competency and Education Requirements
1. Purpose	To ensure CAPD Freeline Solo exchange procedure is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety

2. Process

- Peritoneal Dialysis is a renal replacement therapy for patients with renal failure.
- Continuous Ambulatory Peritoneal Dialysis (CAPD) is a type of peritoneal dialysis which involves a manual exchange of dialysis fluid four to five times a day, every day.
- CAPD exchange can only be carried out by a PD accredited RN/EN or RN/EN under the supervision of a PD accredited RN.
- Accreditation requirement must be complied with prior to carrying out a CAPD procedure (as per Appendix A).

2.1 DEVICES

2.1.1 Equipment

- Trolley
- Portable IV pole
- Blue clamp
- Micropore tape

2.1.2 Key parts

- Minicap
- Peritoneal dialysis fluid (Freeline Solo bag)

2.1.3 Key site

- Abdominal PD catheter

2.2 PROCEDURE

1. 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. Identify and gather equipment and key parts for procedure
3. Clean trolley/work surface with detergent
4. Wash the blue clamp and dry thoroughly
5. Perform hand hygiene

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6. Wear PPE as per droplet or standard precaution as required (refer to [NSW Health PD2017_013 Infection Prevention and Control Policy](#))
7. Prepare general aseptic field equipment and key parts at the bedside
8. Use the sharp edge of the blue clamp to open outer pouch of the dialysis bag. DO NOT USE SCISSORS OR KNIVES
9. Place the opened bag on top of the clean trolley and ensure the lines are facing up
10. Check the bag strength, volume, expiry, colour and for leakage
11. Prepare the patient:
 - a) Perform hand hygiene & don non-sterile gloves
 - b) Expose the PD catheter
 - c) Keep PD catheter away from clothing
12. Remove gloves and perform hand hygiene
13. Don sterile gloves
14. Perform connection procedure ensuring all key parts/sites are protected
 - a) Remove the coloured cap from the patient line and remove minicap from the catheter;
 - b) Use non-touch connection technique to connect catheter to the patient line;
 - c) Hang the full bag on an IV pole and place the empty drain bag on the floor;
 - d) Ensure all lines are not kinked or pulling from the exit site. Ensure catheter dressing remains intact;
 - e) Break the green stick to flush and prime the lines for 5 seconds then clamp the inflow line with a blue clamp
15. Open the catheter valve to commence drain (drain time is approximately 15 to 20 minutes)
 - a) Compare drain volume to previous fill volume. Drain volume should be more than the previous fill volume
16. Remove gloves and PPE
17. Perform hand hygiene
18. When the drain line is cool, fill the patient:
 - a) Close the blue clamp on the outflow line;
 - b) Remove the blue clamp on the inflow line;
 - c) Run PD fluid into the patient (fill time is approximately 10-15 minutes)
19. When fill is complete, perform hand hygiene and wear PPE as per droplet or standard precaution as required (refer to [NSW Health PD2017_013 Infection Prevention and Control Policy](#))
20. Close the catheter valve until it clicks
21. Open a new minicap
22. Perform hand hygiene and don sterile gloves
23. Disconnect patient using non-touch disconnection technique
24. Apply a new minicap to catheter using non-touch technique
25. Secure the catheter in place with micropore tape
26. Weigh the drain bag, record the volume and PD effluent quality (i.e. colour, clarity and fibrin status)
27. After completion, discard equipment
28. Remove gloves and PPE
29. Perform hand hygiene
30. Clean trolley after use and perform hand hygiene

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31. Calculate and document UF and cumulative UF
 - a) UF Calculation:
Volume Out – Volume In = UF volume (amount of fluid removed through dialysis)
Note: Negative (–) UF volume is the amount of PD fluid retained in the peritoneal cavity
32. Document the procedure on the CAPD chart and patient notes
33. Handover to the next shift

3. Network file	Renal
4. External references / further reading	<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 2014 June]; Available from: http://www.cari.org.au/Dialysis/dialysis%20peritonitis/dialysis_peritonitis.html</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>Figueiredo, A. E., Bernardini, J., Bowes, E., Hiramatsu, M., Price, V., Su, C., . . . Brunier, G. (2016). A Syllabus for Teaching Peritoneal Dialysis to Patients and Caregivers. <i>Perit Dial Int</i>, 36(6), 592-605. doi:10.3747/pdi.2015.00277</p> <p>Gowrie Balasubramanian, Khadija McKitty, Stanley L.-S. Fan (2011). Comparing automated peritoneal dialysis with continuous ambulatory peritoneal dialysis: survival and quality of life differences? <i>Nephrology Dialysis Transplantation</i>, Volume 26, Issue 5, 1 May 2011, Pages 1702–1708, https://doi.org/10.1093/ndt/qfq607</p> <p>Kannaiyan S. Rabindranath, James Adams, Tariq Z. Ali, Conal Daly, Luke Vale, Alison M. MacLeod (2007). Automated vs continuous ambulatory peritoneal dialysis: a systematic review of randomized controlled trials. <i>Nephrology Dialysis Transplantation</i>, Volume 22, Issue 10, 1 October 2007, Pages 2991–2998, https://doi.org/10.1093/ndt/qfm515</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>Masa Knehtl, Eva Jakopin, Martin Hren, Nina Hojs, Sebastjan Bevc, Robert Ekart, Radovan Hojs (2018). SP530 Comparison Of Continuous Ambulatory</p>

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	<p>Peritoneal Dialysis (CAPD) Versus Automated Peritoneal Dialysis (APD) Considering Treatment Adequacy, Anemia, Inflammation And Mineral Bone Disease. <i>Nephrology Dialysis Transplantation</i>, Volume 33, Issue suppl_1, 1 May 2018, Pages i526–i527, https://doi.org/10.1093/ndt/gfy104.SP530</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>Woodrow G, Fan SL, Reid C et al. (2017) Renal Association clinical practice guideline on peritoneal dialysis in adults and children. <i>BMC Nephrology</i> 18:333; https://doi.org/10.1186/s12882-017-0687-2</p>
5. Specialty/department committee approval	<p>Peritoneal Dialysis Committee Chairperson name/position: Franziska Pettit, Staff Specialist Date: 26.08.20</p>
6. Department head approval	<p>Name / position: Prof George Mangos, Department Head Renal Services Date: 26.08.20</p>
7. Executive sponsor approval – Nurse Manager	<p>Name / position: Christine Day, Nurse Manager Medicine Date: 01.09.20</p>

Revision and Approval History

Date published	Revision number	Author (Position)	Date revision due
Feb 2019	1	Anna Claire Cuesta	Feb 2022
Sep 2020	2	Anna Claire Cuesta	Sep 2023

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Appendix A

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

Limitations for Practice:
 Enrolled Nurse
 Registered Nurse
 Clinical Nurse Specialist

Clinical Nurse Educator
 Nurse Educator
 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. Competency assessment and training is compulsory for 4 south (4S) and emergency department (ED) nursing staff prior to attending to CAPD procedure
2. Nursing staff with no CAPD exposure must undergo competency training and practice under the supervision of CAPD competent nurse
3. Competency assessment and training is to be carried out by a CAPD competent nurse
4. Assessor may determine the number of practice sessions required prior to competency assessment
5. Simulated CAPD for practice sessions are acceptable
6. Competency assessment is to be performed on a patient
7. Repeat competency assessment and training every protocol update and/or every 5 years

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

Name: _____ Pay No: _____
Print. Signature

Please initial appropriate box

Action	P1	P2	P3	P4	P5	C
1. Selects appropriate fluid, checking for expiry date, volume and colour						
2. Warms fluid on warmer						
3. Cleans trolley and prepares equipment						
4. Washes and dries blue clamp. Performs small handwash						
5. Wears PPE as required. Removes bag from outer pouch and places on trolley with lines facing upward – Checks bags						
6. Prepares the patient and positions the PD catheter away from clothing						
7. Performs 1 minute handwash and uses sterile gloves						
8. Connects line to catheter without contamination <i>Note: non-touch connection technique</i>						
9. Hangs fluid bag on pole and places empty bag on floor						
10. Breaks the green stick to flush and prime the lines for 5 seconds						
11. Clamps the inflow line with blue clamp						
12. Twists the catheter valve to open and commence drain						
13. Knows that drain volume should be more than previous fill volume						
14. When drain is complete, clamps drain line and releases the blue clamp on inflow line						
15. When fill is complete, twists the catheter valve to close, Opens new minicap						
16. Performs 1 minute handwash, wears PPE as required and uses sterile gloves						
17. Disconnects without contamination- <i>Note:non-touch disconnection technique</i>						
18. Applies new minicap <i>Note: non-touch technique</i>						
19. Secures catheter in place with tape						
20. Weighs drain bag and records volume and quality of effluent						
21. Discards PPE, bag and lines appropriately						
22. Calculate and records UF and cumulative UF						
23. Documents procedure on CAPD chart and clinical notes						
24. Hands over to next shift						

Practice 1 (P1) Assessor's name & initial _____ Date _____
 Practice 2 (P2) Assessor's name & initial _____ Date _____
 Practice 3 (P3) Assessor's name & initial _____ Date _____
 Practice 4 (P4) Assessor's name & initial _____ Date _____
 Practice 5 (P5) Assessor's name & initial _____ Date _____
 Competent (C) Assessor's name & initial _____ Date _____

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