

**AUTOMATED PERITONEAL DIALYSIS (APD) CONNECTION AND DISCONNECTION
PROCEDURE – CLARIA DIALYSIS MACHINE**

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 APD set-up, connection and disconnection procedure is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety

2. Process

2.1 DEVICES

2.1.1 Equipment

- Trolley
- Claria PD machine with modem
- Drain bag
- Blue clamp
- Micropore tape

2.1.2 Key parts

- Minicap
- Peritoneal dialysis fluid (dialysate)
- Cassette/lines

2.1.3 Key site

- Abdominal PD catheter

2.2 PROCEDURE

2.2.1 Set-up and Connection

1. Select the appropriate PD fluid strength by conducting a fluid assessment
2. Perform hand hygiene
3. Identify and gather equipment and key parts for procedure
4. Clean trolley/work surface with detergent
5. Plug machine and modem into power and turn on
6. Confirm that the machine name is the same as patient name
 - a) If not, reset the patient activation code:
 - i. Press stop (red) button twice

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- ii. Press arrow down button until display says 'Reset Activation Code'
 - iii. Press enter button
 - iv. Turn off machine and turn it back on
 - v. Machine will display 'Enter activation Code'
 - vi. Press enter button to change first digit
 - vii. Press arrow up to select the number
 - viii. Once correct number is selected, press enter to lock number, cursor will advance to the next digit
 - ix. Repeat steps vii & viii until the last digit of the activation code is completed and locked
 - x. Press GO (green) button
 - xi. Wait for machine to display 'CONFIRM CONFIGURATION'
 - xii. Press enter button
 - xiii. Wait for machine to display 'Are you First Name LAST NAME'
 - xiv. Press enter button to confirm patient's name
 - xv. Machine will display 'SHARE: CLINIC & BAXTER/SEE USER MANUAL'
 - xvi. Press GO (green) button
 - xvii. Machine Will display 'NEW PROGRAM RECEIVED/REVIEW NEW PROGRAM'
 - xviii. Press enter button until machine displays 'IS PROGRAM CORRECT?'
 - xix. Press GO (green) button
 - xx. Proceed to step 7 to enter pre-treatment information
- b) If it is the correct patient and requiring a change in their PD regimen:
- i. Unlock the program through nurse's menu then turn off the machine
 - ii. Unplug modem from power point to ensure modem is off
 - iii. Disconnect the modem's cable from the machine and turn the machine on
 - iv. Once the machine displays the patient name, press GO (green) button
 - v. Machine will display 'NETWORK COMMUNICATION FAILURE'
 - vi. Press the STOP (red) button three times
 - vii. Machine will display 'PRESS GO TO START'
 - viii. Press arrow down button until machine displays 'CHANGE PROGRAM'
 - ix. Adjust the program as required then confirm
 - x. Proceed to step 7 to enter pre-treatment information
- c) If it is the correct patient with correct PD regimen:
- i. Press GO (green) button to confirm patient name after machine displays 'HELLO First Name LAST NAME.'
 - ii. Proceed to step 7 to enter pre-treatment information
- d) For patients without activation code or PD patients from other hospitals, reset the machine:

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- i. Through nurse's menu, unlock the program & choose 'SINGLE USER' on the network mode
 - ii. Turn off the machine and unplug the modem from power point
 - iii. Ensure modem is off then disconnect the modem's cable from the machine
 - iv. Turn the machine on and press the STOP (red) button twice
 - v. Modify the program as required and confirm
 - vi. Proceed to step 7 to enter pre-treatment information
7. Enter and complete pre-treatment information:
 - a) Wait until machine displays 'WEIGHT 000.0'
 - b) Enter patient's current weight by pressing arrow up or down buttons to adjust the numbers and press enter to lock the correct weight
 - c) Press the arrow down button until machine displays 'BLOOD PRESURE 000/000'
 - d) Enter patient's current blood pressure (BP) by pressing arrow up or down buttons to adjust the numbers and press enter button to lock the correct BP
 - e) Press the arrow down button until machine displays 'NIGHT CONC 1 0.0'
 - f) Choose the dialysate concentration to sit on the heating pad by pressing arrow up or down buttons to adjust the numbers and press enter button to lock the correct concentration
 - g) Press the arrow down button until machine displays 'NIGHT CONC 2 0.0'
 - h) Choose the dialysate concentration to be connected to the supply lines by pressing arrow up or down buttons to adjust the numbers and press enter button to lock the correct concentration
8. Press STOP (red) button
9. Wait for machine to display 'PRESS GO TO START.' Press GO (green button)
10. Wash the blue clamp and dry thoroughly
11. Perform hand hygiene
12. Prepare general aseptic field equipment and key parts at the bedside
13. Use the sharp edge of the blue clamp to open outer pouch of the dialysis bags. **DO NOT USE SCISSORS OR KNIVES**
14. Check the bag strength, volume, expiry, colour and for leakage
15. Place one dialysate bag onto the heater covering the silver button;
16. Place next bag/s on the cleaned surface;
17. Open the cassette/lines and place on top of the heater bag
18. Press GO. Machine will display "LOAD THE SET"
 - a) Open the cassette door by pulling the lever up. Load the cassette;
 - b) Close the door pushing the lever down;
 - c) Attach line organiser to door;
19. Close all clamps. Attach drain bag to the drain line (line with small blue cap)
20. Press GO. Machine will display "SELF TESTING"
21. After 2 minutes of machine self-test, machine will flash "CONNECT BAGS / OPEN THE CLAMPS"

22. Perform hand hygiene
23. Perform bag connection procedure ensuring all key parts/sites are protected:
 - a) Remove cap from the dialysate bag and remove cap from bag line;
 - b) Use non-touch connection technique to connect bags:
 - i. Red clamp line to heater bag;
 - ii. White clamp line to next bag and etc...
24. Break the greenstick seals on the bags
25. Open clamps on lines with connected bags (Leave the clamps closed on unconnected lines)
26. Open clamp on patient line (line with a large blue cap)
27. Press GO to prime the lines. Machine will display "PRIMING"
28. Remove gloves and perform hand hygiene
29. After 10 minutes of machine priming, machine will flash "CONNECT SELF / CHECK PATIENT LINE"
30. Prepare the patient:
 - a) Don non-sterile gloves
 - b) Expose the PD catheter
 - c) Keep PD catheter away from clothing
31. Remove gloves and perform hand hygiene
32. Don sterile gloves
33. Perform connection procedure ensuring all key parts/sites are protected
 - a) Remove the large blue cap from the patient line and remove minicap from the catheter;
 - b) Use non-touch connection technique to connect catheter to the patient line;
34. Open the catheter valve
35. To commence dialysis, press the GO button twice until the machine displays 'INITIAL DRAIN'
36. Document the procedure on the APD chart and patient notes
37. Handover to the next shift

2.2.2 End of therapy and disconnection

38. At the end of the therapy, machine will display 'END OF TREATMENT'
39. Press arrow down button to check and record "I-Drain volume"
40. Press arrow down button to check and record "Total UF"
 - ⇒ For patients with negative UF, notify the PD nurses and the renal team
 - ⇒ For patients with consistently low UF (<300), notify the PD nurses and the renal team
41. Press GO. Machine will flash "CLOSE ALL CLAMPS"
42. Close all clamps on connected bags and patient line
43. Press GO. Machine will flash "DISCONNECT SELF/CLOSE ALL CLAMPS"
44. Perform hand hygiene
45. Don non-sterile gloves
46. Close the PD catheter valve until it clicks

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47. Open a new minicap
48. Remove gloves and perform hand hygiene
49. Don PPE and sterile gloves
50. Perform disconnection procedure ensuring all key parts/sites are protected:
 - a) Disconnect patient line from PD catheter using non-touch disconnection technique
 - b) Apply a new minicap on catheter using non-touch technique
51. Secure the catheter in place with tape
52. Press GO. Machine will display 'REMOVE CASSETTE'
53. Press GO. Machine will display 'CONNECTING TO NETWORK'
54. Dismantle machine by removing cassette and lines
55. Discard equipment and effluent as per SESLHDPD/140 Waste Management
56. Remove PPE and gloves
57. Machine will display "TURN ME OFF"
58. Turn the machine off
59. Perform hand hygiene
60. Calculate and record 24 hour cumulative UF by adding initial drain volume to total UF volume
Note: For patients with last fill – subtract last fill volume from initial drain volume before adding to total UF volume
61. Document procedure and PD effluent quality on APD chart and patient notes.
62. Hand over to the next shift

3. Network file	Renal, Peritoneal Dialysis
4. External references / further reading	<p>6 Automated peritoneal dialysis (2005). <i>Nephrology Dialysis Transplantation</i>, Volume 20, Issue suppl_9, 1 December 2005, Pages ix21–ix23, https://doi.org/10.1093/ndt/gfi1120</p> <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>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/gfq607</p>

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	<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/gfm515</p> <p>Masa Knehtl, Eva Jakopin, Martin Hren, Nina Hojs, Sebastjan Bevc, Robert Ekart, Radovan Hojs (2018). SP530 Comparison Of Continuous Ambulatory 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>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</p> <p>Chairperson name/position: Franziska Pettit, Staff Specialist</p> <p>Date: 05.02.19</p>
6. Department head approval	<p>Name / position: Prof George Mangos, Department Head Renal Services</p> <p>Date: 14.02.19</p>
7. Executive sponsor approval – Nurse Manager	<p>Name / position: Christine Day, Nurse Manager Medicine</p> <p>Date: 21.02.19</p>

Revision and Approval History

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