	P02.10 - BLOOD SAMPLING FROM A PERIPHERALLY INSERTED CENTRAL CATHETER	
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Community Paramedic Program	All ages	

PURPOSE

- To obtain blood sample(s) from a peripherally-inserted central catheter (PICC)

WARNINGS

- **Strict sterile technique is essential.** Because the tip of the CVAD sits in the distal superior vena cava, line contamination can lead to infection of the heart.
- **Never leave a CVAD open to the air.** Because the tip of the catheter is intrathoracic, the negative pressure generated during active inspiration can entrain air, causing an air embolism.

EQUIPMENT

- Nonsterile gloves (1 pair)
- Disposable blue soaker pad
- 70% isopropyl alcohol swab (2)
- 2 x single-use syringes each prefilled with 10 ml sterile normal saline
- 1 x Vacutainer™
- Blood tubes:
 - Antibiotic level red top
 - INR / PT - blue top - INR / PT
 - Complete blood count (CBC) - lavender top
 - Electrolytes & kidney function - gold top
- Biohazard container

PROCEDURE

1. A PICC dressing and access cap(s) should be changed routinely every 7 days, or whenever soiled or contaminated. If you are using the catheter for a scheduled medication administration or blood sampling, check when this was last done. If necessary, replace the dressing and cap(s) before sampling (P02.1).
2. If obtaining an antibiotic level, draw the sample before administering the next antibiotic dose.
3. Explain the procedure to the patient / proxy and obtain verbal consent.

4. Prepare a clear and clean area. Gather all equipment. Select the appropriate sample tubes for the relevant laboratory test (appendix A).
5. Perform hand hygiene and don nonsterile gloves.
6. A PICC may have one or more lumens. Just one needs to be accessed for sampling. Needleless connectors (e.g. Luer-Lok™) should always be used.
7. Ensure the line clamp is closed.
8. Remove the injection port end cap. Clean the injection port with an alcohol swab for 15 seconds (figure 2). Repeat with a second swab, then allow to air dry.
9. Attach the first flush syringe to the injection port. Op[e the line clamp and thoroughly flush with 10 ml of saline. Then, use the attached syringe to remove 10 ml of blood and discard in a biohazard container.
10. Attach the Vacutainer to the end connector and insert the sample tubes into the Vacutainer (figure 3).
11. Draw the samples in the sequence indicated in appendix A. Gently invert each tube the number of times indicated. Do not shake the tubes.
12. Remove the Vacutainer.
13. Attach the second flush syringe to the injection port. Flush the line with 10 ml of saline using the *push-pause* technique. Inject a small (1 to 2 ml) bolus of saline, followed by a brief pause. Repeat this several more times. The turbulent flow will remove fibrin, preventing clot formation in the line. During the final bolus, remove the syringe while injecting. This will create a positive pressure in the catheter lumen, helping to maintain patency.
14. Close the line clamp and replace the injection port end cap.
15. Discard all equipment in the biohazard container.
16. Remove your gloves and repeat hand hygiene.
17. Label the tubes with the patient's name, date of birth, and personal health information number (appendix B). Complete the appropriate laboratory requisitions. Place each tube individually into a biohazard bag with the corresponding requisition. Store safely for delivery or pick-up.
18. Document the procedure in the patient care record.

FIGURE 1





FIGURE 2



LINKS

- P02.1 - Central Vascular Access Device Dressing & Cap Change

APPROVED BY

	
EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X09 for change tracking)

- New

APPENDIX A: ORDER OF BLOOD DRAW & INVERSIONS



ORDER OF DRAW CHART

INVERSIONS:

Tubes are pictured in order of draw.



KNOW YOUR FILL LEVEL

YOUR FILL LEVEL HAS +/- 10% TOLERANCE
QUALITY RESULTS = FULL TUBES
ANYTHING ABOVE OR BELOW THE TOLERANCE LEVEL CAN IMPACT PATIENT TEST RESULTS

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APPENDIX B: LABELLING BLOOD TUBES

Proper Labels = Quality Results

Best Dressed Tubes

- Label is placed directly under cap with Patient Name at the top
- Barcode is straight
- Collector's user ID is present
- Label is pressed flat and not wrinkled
- Label is not overlapping itself
- Tube content is visible

Label Error: Flapper
DO NOT place the label overhanging the side of the tube

Label Error: Sidewinder
DO NOT apply the label crookedly

Label Error: Scarf
DO NOT wrap the label around the tube like a scarf or flag

Label Error: Hanger
DO NOT place the label overhanging the bottom of the tube

Label Error: Capped
DO NOT apply the label over the lid

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