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|  | <b>P02.5 - SUBCUTANEOUS CATHETER INSERTION</b> |                                    |
|   | Version date: 2025-05-21                       | Effective Date: 2025-06-03 (07:00) |
| PCP <sup>1</sup> / ICP / ACP / ACP  |  | All ages                           |

#### INDICATIONS

- Establishing or replacing a subcutaneous (SC) catheter
- Administering a medication through a SC catheter

#### WARNINGS

- An SC catheter should be replaced every seven (7) days.
- The insertion site should be easily accessible, but not adjacent to large blood vessels, joints, bony prominences, or tumors.
- Too little subcutaneous tissue or significant edema may impair fluid absorption.
- The skin should not be broken, have overlying inflammation or infection, or been recently irradiated.

#### EQUIPMENT

- Personal protective equipment (PPE) for contact & droplet precautions with nonsterile gloves
- Disposable soaker pad ("blue pad")
- Sterile drape (or towel)
- Chlorhexidine gluconate 2% with 70% alcohol swab stick
- BD Saf-T-Intima™ Safety System winged subcutaneous infusion device - 22 or 24 gauge with device-specific cover or transparent semi-permeable membrane (TSM) dressing (figure 1, appendix A)
- 3 ml sterile saline flush syringe
- Tape
- Sterile gauze
- Bandage
- Biohazard container

## PROCEDURE

1. A paramedic with the primary (PCP) work scope requires additional employer-based training to perform this procedure (A06.2).
2. Explain the procedure to the patient / proxy and obtain verbal consent if time allows.
3. Prepare a clear and clean area. Gather all equipment.
4. Perform hand hygiene and don PPE with nonsterile gloves.
5. Select an appropriate insertion site (figure 2). If replacing a catheter, use a new location.
6. Place the soaker pad under the insertion site.
7. Establish a sterile field with the drape in the center of the clear area. Drop all equipment it onto the sterile field, taking care to not touch anything with your non-sterile gloves.  
During the procedure, discard all used (contaminated) supplies away from your sterile field.
8. Clean the insertion site with the chlorhexidine swab stick for 30 seconds in a back and forth motion. Reverse the swab stick and repeat for another 30 seconds in the perpendicular direction (figure 3). Allow to air dry.
9. **INSERTION:**
  - a. Grasp the infusion device by the wings and remove the needle cover (figure 4).
  - b. Rotate the white safety shield 360 degrees to loosen the needle (figure 5). Ensure that the needle bevel is facing up and the needle tip is not covered by the catheter.
  - c. Grab the textured sides of the wings and bring them together between the thumb and index finger of your dominant hand (figure 6).
  - d. Gently pinch the skin at the insertion site to raise a two to three-centimeter roll of subcutaneous tissue. Insert the needle at a 30 to 45-degree angle with the bevel up until the entire length of the needle is inserted under the skin (figure 7). *Should there be a flash of blood, remove the device, select a new site and start over with a new device.*
  - e. To remove the needle from the catheter, hold the wings flat against the skin (do not hold the center bar). Grasp the safety barrel and pull it straight back in a continuous motion until the safety shield separates from the safety system (figure 8).
  - f. Attach the flush syringe and inject 0.5 to 1 ml of sterile saline to purge the line and keep it patent.
  - g. Apply a device cover or TSM dressing, loop the catheter and secure it in place with tape (figure 9). Label the site with the date.
10. **REMOVAL:**
  - a. Remove the tape, label and cover / dressing.
  - b. Pull the catheter out at a 30 to 45-degree angle.
  - c. Apply firm pressure with the gauze for 15 to 20 seconds, then apply a bandage.
11. Discard all equipment into the biohazard container.
12. Remove your PPE and perform hand hygiene.
13. Document the procedure in the electronic patient record.

FIGURE 1

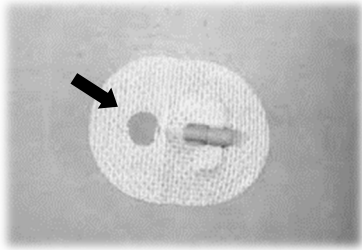
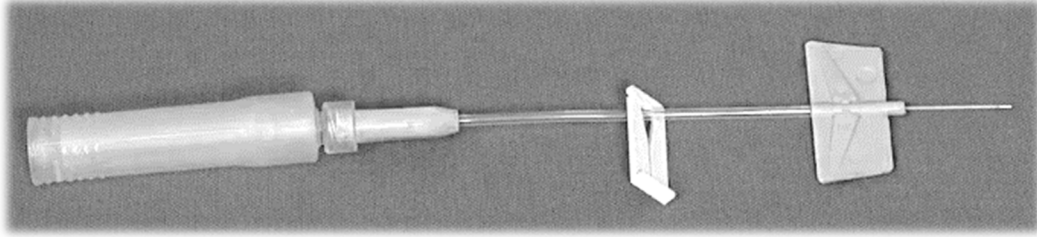
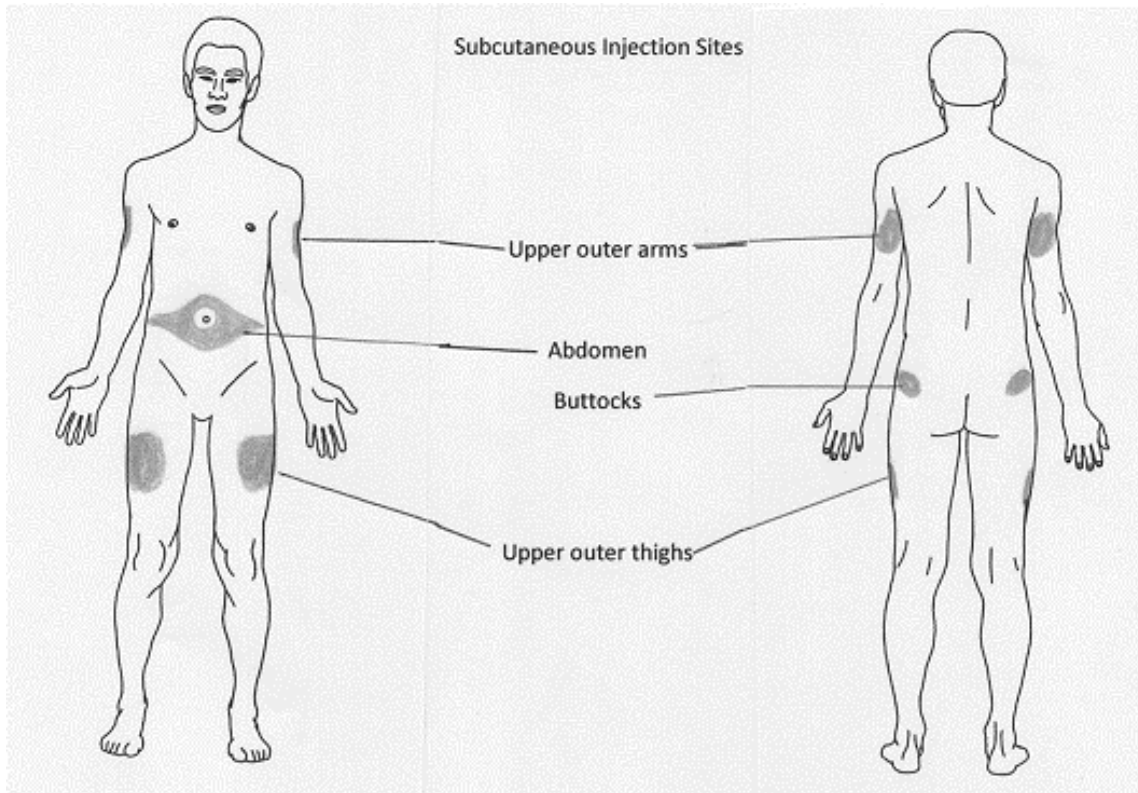
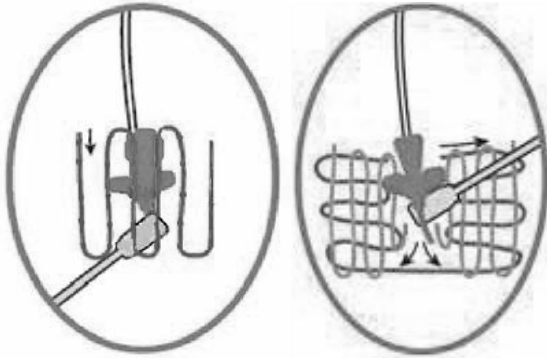


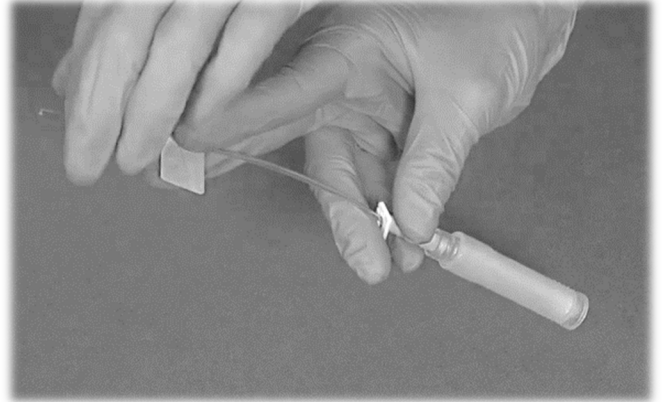
FIGURE 2



**FIGURE 3**



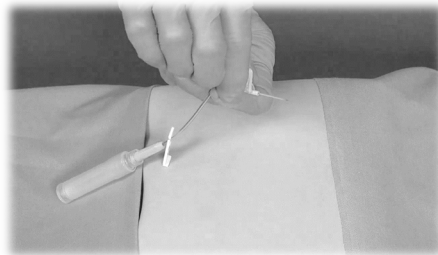
**FIGURE 4**



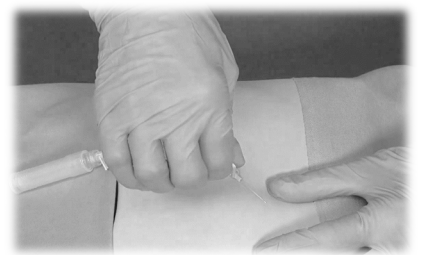
**FIGURE 5**



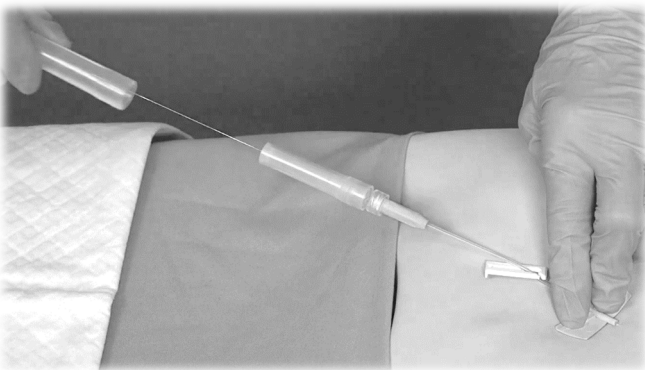
**FIGURE 6**



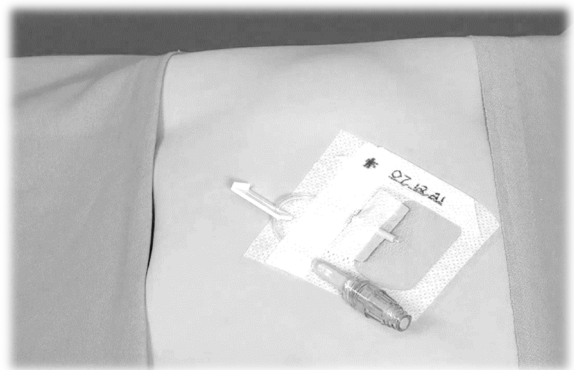
**FIGURE 7**



**FIGURE 8**



**FIGURE 9**



|              |
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| <b>LINKS</b> |
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| <ul style="list-style-type: none"> <li>• A06.2 - EMS Work Scope (Medical Functions &amp; Procedures)</li> <li>• E16 - East Zone Palliative Care Program</li> </ul> |
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| <b>APPROVED BY</b> |  |
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|   |   |
|---|---|
|  |  |
| EMS Medical Director  | EMS Associate Medical Director  |

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| <b>VERSION CHANGES (refer to X01 for change tracking)</b> |
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| <ul style="list-style-type: none"> <li>• New</li> </ul> |
|---|

## APPENDIX A

# BD Saf-T-Intima™ Safety System

## Points to practice for subcutaneous infusion\*

### Appropriate sites for subcutaneous infusion include:<sup>1</sup>

- Scapula
- Subclavicular chest wall
- Anterior abdominal wall
- Anterior aspects of upper arms
- Anterior aspects of the thighs



### Before you start

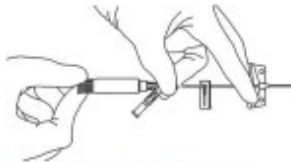
Wash hands and prepare site according to your organization's policies and procedures.

### Priming

**For Y-adapter:** Remove the vent plug, connect the infusate and prime the safety system. For intermittent use, remove the vent plug and PRN port and attach needle-free connectors.

**For straight adapter:** After catheter insertion, remove the PRN port and connect the infusate. For intermittent use, remove the PRN port and attach a needle-free connector.

## 1



### Preparation

- Hold the wings and remove the needle cover.
- Hold as shown (Fig. 1) and rotate the clear safety shield until the needle bevel is facing up. Check the needle bevel to ensure it is not covered by the catheter.

## 2A



## 2B

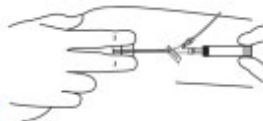


### Insertion

- Grasp the textured sides of wings and bring them together, pinching firmly. (Fig. 2A)
- Using thumb and index finger, gently pinch the skin around selected site to identify the subcutaneous tissue.
- Insert the full length of the catheter and needle through the skin at a 30° - 45° angle. (Fig. 2B)
- Make sure the catheter is sitting well within the subcutaneous layer. If blood is seen within the safety system, remove and insert a new device at a new site.



## 3



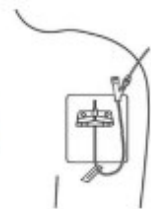
### Needle removal

- Lay the wings flat on the skin surface and apply pressure to each wing. With your other hand, grasp the textured end of the safety shield and pull in a straight, continuous motion until the safety shield separates from the safety system. (Fig. 3)
- Discard the needle immediately in a puncture resistant, leak-proof sharps collector.

## 4

### Securement

- Secure the catheter and apply a sterile dressing per your organization's policies and procedures.



\*The use of BD Saf-T-Intima™ Safety System for subcutaneous applications is specific to certain catalogue numbers only.

### Reference

1. Broadhurst D, Cooke M, Sreeram D, Gray B. Subcutaneous hydration and medications infusions (effectiveness, safety, acceptability): A systematic review of systematic reviews. *PLoS One*. 2020;15(8):e0237572. doi:10.1371/journal.pone.0237572.

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