

**BY ORDER OF THE COMMANDER
59TH MEDICAL WING**

**59TH MEDICAL WING INSTRUCTION
44-151**



27 JULY 2016

Medical

**CARE AND MAINTENANCE OF
VENOUS AND CENTRAL CATHETERS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Policy Directive 44-1, *Medical Operations*. This medical wing instruction (MDWI) provides guidance on the care and maintenance of Venous and Arterial Access Devices (VAD). This instruction applies to all personnel assigned, attached, or on contract to the 59th Medical Wing. This instruction does not apply to the 959th Medical Group, Air National Guard, or Air Force Reserve. Refer recommended changes and questions about this publication to the Office of Primary Responsibility using the AF Form 847, *Recommendation for Change of Publication*. Requests for waivers must be submitted to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System Records Disposition Schedule.

SUMMARY OF CHANGES

This publication has been revised. This rewrite of 59 MDWI 44-151 includes added collection of blood procedures.

1. Responsibility

1.1. Personnel in all clinics are directly responsible for ensuring the proper care of VADs. It is imperative that personnel accessing VADs are familiar with the specific device, and functioning within their respective scope of practice (i.e., privileged provider, registered nurse, licensed vocational nurse, medical technician).

2. General Guidelines

2.1. Except in emergency situations, prior to the insertion of any central venous access device the physician must obtain a signed 59 MDW Form 1202, *Disclosure and Consent - Medical and Surgical Procedures* from the patient or their representative. Central lines and VADs are not routinely placed outside of the 959th Medical Group: central lines kits are only maintained in the operating room at the Wilford Hall Ambulatory Surgical Center.

2.2. Clinical Skills Plus (formerly Mosby's Nursing Skills) will be the primary training resource and standard for use of VADs. Training tools and checklists for insertion, dressing care/change, blood sampling, etc. are available via this source. If there is any question regarding the VAD, the provider should be consulted prior to initiating use.

2.2.1. Locally, resources (e.g., vascular access nurse specialists) are available at San Antonio Military Medical Center for additional training and consultation, as needed.

2.2.2. Flight Commanders are responsible to be aware of the frequency of use/care of VADs in their area, and to ensure appropriate training has occurred and is documented in the member's training record.

2.3. If a central venous catheter is inserted in the Military Treatment Facility, it will be the ordering provider's responsibility to ensure the Infection Control staff is notified, and an applicable National Patient Safety Goal issues (NPSG 07.04.01) are appropriately addressed.

2.4. Collection of blood for coagulation studies through intravenous lines that have been previously flushed with heparin should be avoided. If blood must be drawn through a central venous catheter, follow the steps in Attachment 2 to minimize possible anticoagulant contamination and specimen dilution.

3. Documentation

3.1. Use, care and appearance of the indwelling VAD will be documented in the electronic health record (EHR).

3.1.1. If a central VAD is placed emergently, documentation in the EHR will include details on insertion.

3.2. Documentation of competency will occur in the individual's Competency Assessment Folder or Air Force Training Record as applicable and within scope of practice. Any scope of practice waivers will be documented as well.

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Chief of the Medical Staff

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 46-101, *Nursing Services and Operations*, 30 January 2015

AFPD 44-1, *Medical Operations*, 9 June 2016

59 MDWI 44-157, *Infection Prevention and Control Program*, 23 May 2013

Clinical Skills Plus access from AFMS Kx virtual library:

<https://kx.afms.mil/kj/kx8/VirtualLibrary/Pages/home.aspx>

<http://epm601.elsevierperformancemanager.com/Personalization/PersonalPage.aspx>

Joint Commission National Patient Safety Goals 2016:

https://www.jointcommission.org/assets/1/6/2016_NPSG_HAP_ER.pdf

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

59 MDW Form 1202, *Disclosure and Consent - Medical and Surgical Procedures*

Abbreviations and Acronyms

EHR—Electronic Health Record

IAW—In Accordance With

MDWI—Medical Wing Instruction

VAD—Venous and Arterial Access Devices

Attachment 2

BLOOD DRAWING FROM CENTRAL VENOUS ACCESS DEVICES (VADS)

A2.1. Gather Equipment.

A2.1.1. Gloves.

A2.1.2. Tourniquet.

A2.1.3. Sharps and waste receptacles.

A2.1.4. 10 mL syringes (enough for specified/ordered amount of blood and for blood discard).

A2.1.5. Heparin flush, (100 units/mL), one (1) 5-mL vial, if appropriate for line type and patient is not allergic to Heparin.

A2.1.6. Normal saline 0.9% preservative-free (2 – 10 mL vials).

A2.1.7. Injection or access cap.

A2.1.8. Syringes: Four (4) 5-mL.

A2.1.8.1. 10 mL (appropriate number for sampling).

A2.1.9. Antiseptic solutions: alcohol, chlorhexidine gluconate, Povidone-iodine, tincture of iodine.

A2.1.10. Gauze pads.

A2.1.11. Tape.

A2.1.12. Appropriate lab specimen tubes with label/requisition.

A2.1.13. Vacutainer, if desired.

A2.1.14. Biohazard bag for transporting specimen(s).

A2.1.15. Alcohol wipes.

A2.1.16. Appropriate blood transfer device.

A2.2. Procedure.

A2.2.1. Obtain and review physician's or authorized provider's order.

Note: Specific physician's order is required to draw blood cultures from central lines.

A2.2.2. Clean hands in view of the patient.

A2.2.3. Verify the patient's identity using at least (2) two identifiers: Name and DOB.

A2.2.4. Explain the procedure to the patient and obtain the patient's permission to perform.

A2.2.5. Place the patient in recumbent position, as tolerated.

A2.2.6. Assess the patient.

A2.2.7. Assemble equipment at the patient's bedside.

A2.2.8. Clean hands in view of the patient.

A2.2.9. Don gloves.

A2.3. From a Central Vascular Access Device (VAD).

A2.3.1. Stop administration of all infusates into the VAD for one minute prior to obtaining blood samples, if appropriate for the patient's condition.

A2.3.2. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.3.3. Check patency of VAD by flushing with 3 to 5 mL preservative-free 0.9% sodium chloride.

Note: If blood does not flow into the blood tube or syringe:

A2.3.3.1. Have the patient change position, cough, move arm above head, or hold a deep breath.

A2.3.3.2. Attempt to flush the catheter with sodium chloride and attempt to draw the blood again.

A2.3.3.3. Replace the blood tube with a new one.

A2.3.3.4. If still unsuccessful, notify the physician.

A2.3.3.5. Draw the blood specimen peripherally.

A2.3.4. Clamp the catheter.

A2.3.5. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.3.6. Attach an empty 10 mL syringe to the access device.

A2.3.7. Unclamp the catheter.

A2.3.8. Withdraw 1.5 to 2 times the fill volume of the VAD of blood and discard.

Note: Obtaining a discard sample clears the lumen, allowing for an accurate blood sample for testing. For blood cultures, do not obtain a discard sample if the patient is volume depleted.

A2.3.9. Re-clamp the catheter.

A2.3.10. Remove and discard the syringe immediately into the appropriate container.

A2.3.11. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.3.12. Attach a second syringe to the catheter hub. The size of the syringe is determined by the amount of blood needed.

A2.3.13. Unclamp the catheter.

A2.3.14. Withdraw blood into the syringe. Several syringes may be needed to obtain the required amount of blood.

A2.3.15. Re-clamp the catheter and remove the syringe.

A2.3.16. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.3.17. Unclamp the catheter.

A2.3.18. Flush the catheter using positive pressure flushing technique with 5 to 10 mL preservative-free 0.9% sodium chloride.

A2.3.19. Transfer blood to collection tubes or vials and rotate the tubes/vials. Monitor the patient's response.

A2.3.20. Label blood tubes at the patient's bedside. Send samples to the lab for testing. Follow Laboratory department guidelines for filling lab collection tubes.

A2.3.21. Discard supplies in appropriate receptacles.

A2.3.22. Remove gloves.

A2.3.23. Wash hands.

A2.3.24. Document in the appropriate medical record, including the amount of blood used for sampling and the patient's response to the procedure.

A2.4. From Implanted Port.

A2.4.1. Stop administration of all infusates into the VAD for two minutes prior to obtaining blood samples, if appropriate for the patient's condition.

A2.4.2. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.4.3. Check patency of VAD by flushing with 3 to 5 mL preservative-free 0.9% sodium chloride.

Note: If blood does not flow into the blood tube or syringe:

A2.4.3.1. Have the patient change position, cough, move arm above head, or hold a deep breath.

A2.4.3.2. Attempt to flush the catheter with sodium chloride and attempt to draw the blood again.

A2.4.3.3. Replace the blood tube with a new one.

A2.4.3.4. If still unsuccessful, notify the physician.

A2.4.3.5. Draw the blood specimen peripherally.

A2.4.3.6. Access implanted port and clamp.

A2.4.3.7. Scrub the access device for a minimum of 15 seconds.

A2.4.3.8. Attach an empty 10 mL syringe to the access device and unclamp.

A2.4.3.9. Aspirate 3 to 5 mL of blood into the syringe.

A2.4.3.10. Re-clamp.

A2.4.3.11. Remove and discard the syringe immediately into an appropriate container.

Note: Obtaining a discard sample clears the lumen, allowing for an accurate blood sample for testing. For blood cultures do not obtain a discard sample if the patient is volume depleted.

A2.4.3.12. Scrub the hub with alcohol for a minimum of 15 seconds.

A2.4.3.13. Attach syringe to extension tubing hub and unclamp.

A2.4.3.14. Withdraw blood into syringe. Several syringes may be needed to obtain the required amount of blood.

- A2.4.3.15. Clamp and remove syringe with blood.
- A2.4.3.16. Transfer blood to collection tubes or vials and rotate vials/tubes using transfer device.
- A2.4.3.17. Scrub the hub for a minimum of 15 seconds and attach preservative-free 0.9% sodium chloride syringe. Unclamp catheter.
- A2.4.3.18. Flush the catheter using positive pressure flushing technique with 5 to 10 mL preservative-free 0.9% sodium chloride.
- A2.4.3.19. Clamp and remove syringe.
- A2.4.3.20. Change access device.
- A2.4.3.21. Scrub the access device with alcohol for a minimum of 15 seconds.
- A2.4.3.22. Attach a heparin-filled syringe and unclamp the catheter.
- A2.4.3.23. Flush the catheter using positive pressure flushing technique with 5 mL heparin (100 units/mL).
- A2.4.3.23. Flush the catheter using positive pressure flushing technique with 5 mL heparin (100 units/mL).
- A2.4.3.24. Monitor the patient's response.
- A2.4.3.25. Label blood tubes at the patient's bedside. Send samples to the Lab for testing. Follow Laboratory department guidelines for filling lab collection tubes.
- A2.4.3.26. Discard supplies in appropriate receptacles.
- A2.4.3.27. Remove gloves. Wash hands.
- A2.4.3.28. Document in the appropriate medical record, including the amount of blood used for sampling plus the patient's response to the procedure.