How Insertion Imperfections Impact Care & Maintenance

Presented by:

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Disclosure

- Tiffany L. Moore, BSN, RN, VA-BC is a Clinical Resource Manager at Medline Industries, Inc.

Objectives

01

Describe insertion practices that impact maintenance

02

Demonstrate opportunities to reduce variability in practice and decrease infection risk

03

Discuss current Vascular Access practice across different facilities

CABSI Prevention begins at insertion

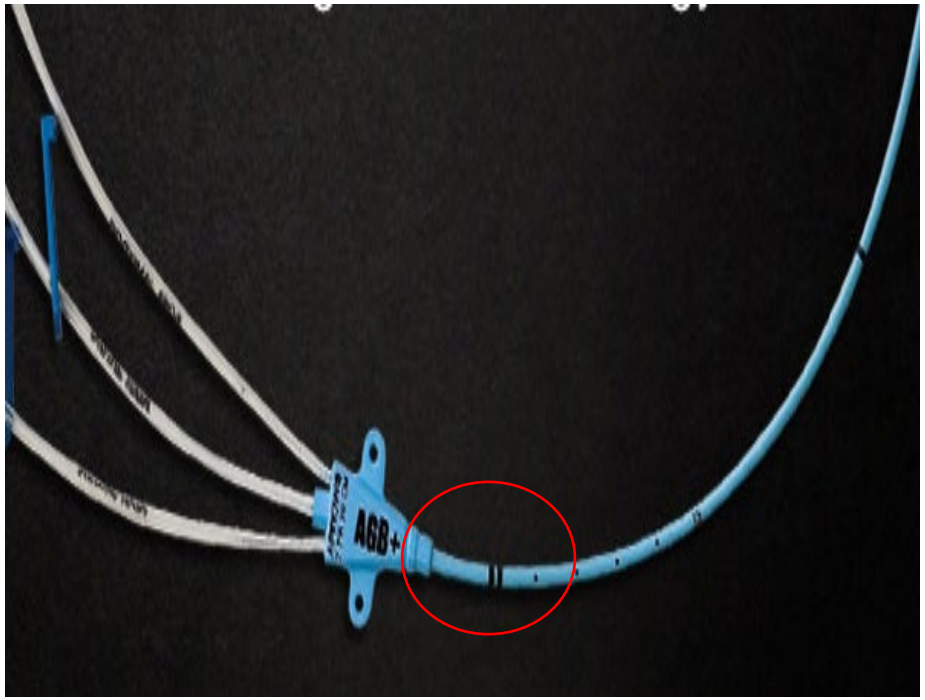
- Location
- External length (hubbing)
- Securement
- Proper Dressing Application
- Emergent Insertions

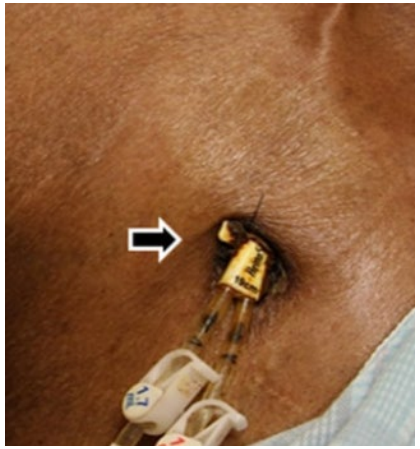
Insertion Sites

- **Chest** A
- **Arm** B
- **Neck** C
- **Femoral** D

16 cm or 20 cm more than a maintenance challenge

Hubbing





Catheter Related Venous Thrombosis

Reverse Tapering

History

- Radiology request
- Prevent post insertion bleeding
- US FDA
- Cyanoacrylate-based glue

Catheter Related Venous Thrombosis

- Increased catheter size in smallest part of vessel
- Catheter to Vein Ratio
- Minimize with an insertion bundle
  - Catheter to vein ratio
  - US guided insertion with micro introducer kits
  - Utilization of intracavity ECG for tip location
  - Proper suture less stabilization at the exit site

What is a stabilization device?

ASD

Adhesive Backed Device

ISD

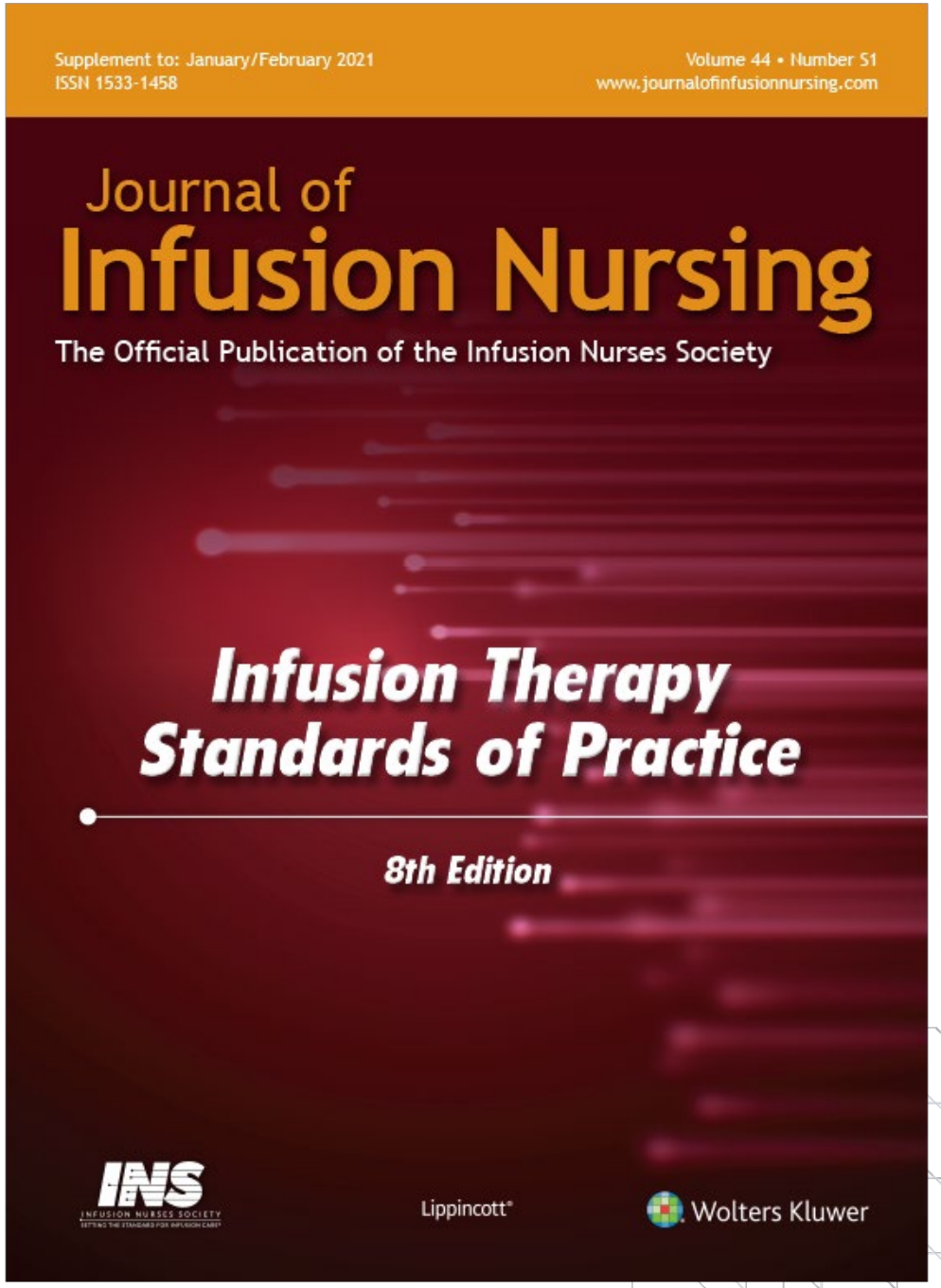
Integrated Securement Device

SASS

Subcutaneous Anchor Securement System

TA

Tissue Adhesive



Securement is NOT…

Non-Sterile Tape

Sutures

Rolled bandages

Dressing on insertion

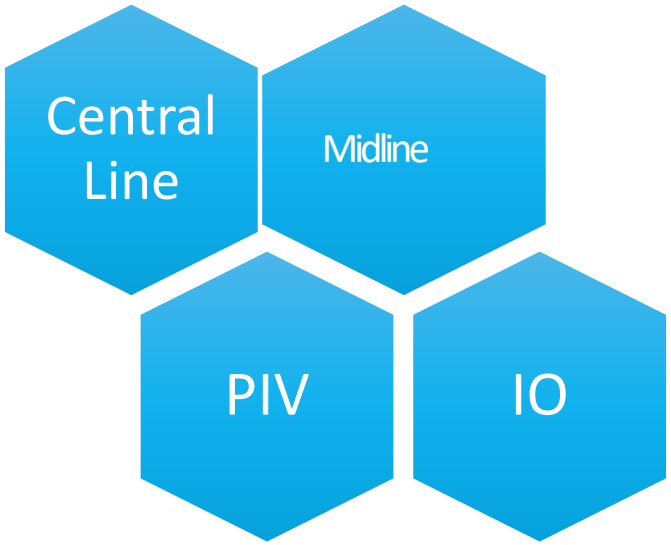
- Stock insertion kits
- Dressing failure

3X **Infection risk**
when there are 2 dressing changes
(soiled or unstuck dressings)

12X **Infection risk**
when there are 3+ dressing changes

*Timsit, Jean-François MD. Dressing disruption is a major risk factor for catheter-related infections. Critical Care Medicine (June 2012); Vol. 40 No. 6.

No central line → no CLABSI



Why IO?

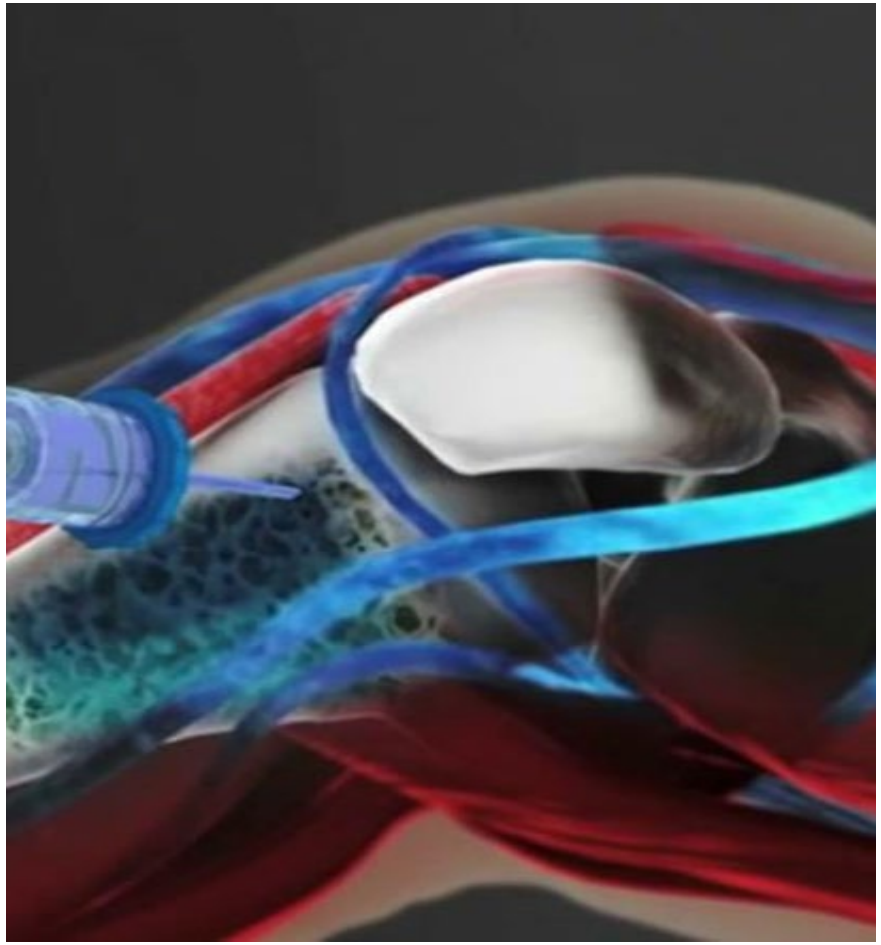
- Codes are busy and not conducive to maintaining aseptic technique
  - replace in <24 hours if suspicion of suboptimal sterility[4]
- The Patient is Dead - Pulseless
- Time to treat - Damage occurs at 5 mins

400,000 Codes per year with a survival to discharge rate of 7.6%[8]

Emergent Access

Benefits of IO

- Fast vascular access—10 seconds
- “Non-Collapsible vein”
- Reliable “bridge” access
- Large volume infusion
- High flow rates
- Low infection rate—0.6%
- First attempt success rate >98%



2021 – CABSI

- Infusion Therapy Standards of Practice 2021 – Standard 50 – Infection
- BSIs originating from either PIVCs and/or CVADs
- Both are equally injurious and can occur from 4 possible sources
  1. Insertion and dwell time
  2. Hub and lumen during manipulation
  3. Endogenous microorganisms
  4. Contaminated infusates

How practice impacts PIV failures and CABSI

Adequate skin prep	Aseptic Insertion	Securement	Dry Occlusive dressing	Scrub the hub
• Infectious Phlebitis • Catheter infection	• Infectious Phlebitis • Mechanical failure • Catheter infection	• Infiltration • Dislodgement • Mechanical failure/phlebitis • Catheter infection	• Infectious Phlebitis • Mechanical failure • Catheter infection	• Infectious Phlebitis • Mechanical failure • Catheter infection

PIV catheter failure “Accepted but Unacceptable”

According to Helm, Klausner, Klemperer, Flint, & Huang, 2015, some known factors leading to failure include:

1. Procedural products used and if they are bundled
2. Expertise of the inserter and maintenance of the PIV expertise to skill level
3. How the insertion procedure was performed
4. Subsequent (Suboptimal) care and maintenance of the catheter

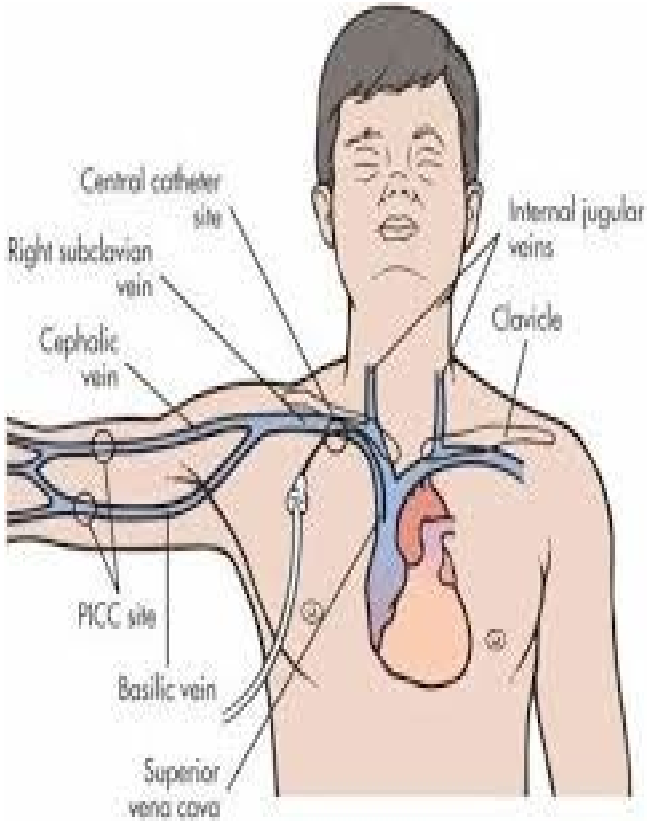
Why do 48% of PIV's fail?

Discussion

- Does your facility have training or competencies for insertors?
- How often is this performed?
- Is there any specific policies or a check list on steps to be performed during insertion process?

Discussion

- Does your facility have an algorithm for what type of vascular access device is placed?
- Does your facility routinely remove and/or replace a central based on a certain number of days?



Discussion

- How frequently are emergent lines placed at your facility?
- Where are they placed?
- How are they labeled?
- Does your facility have access to IOs

Questions?