Infection Risk Management
Best Practice BSI Point Prevalence Data Collection

Hospital Name
City, State

Date

Prepared by:

ETHICON
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Objectives for BSI Point Prevalence Program

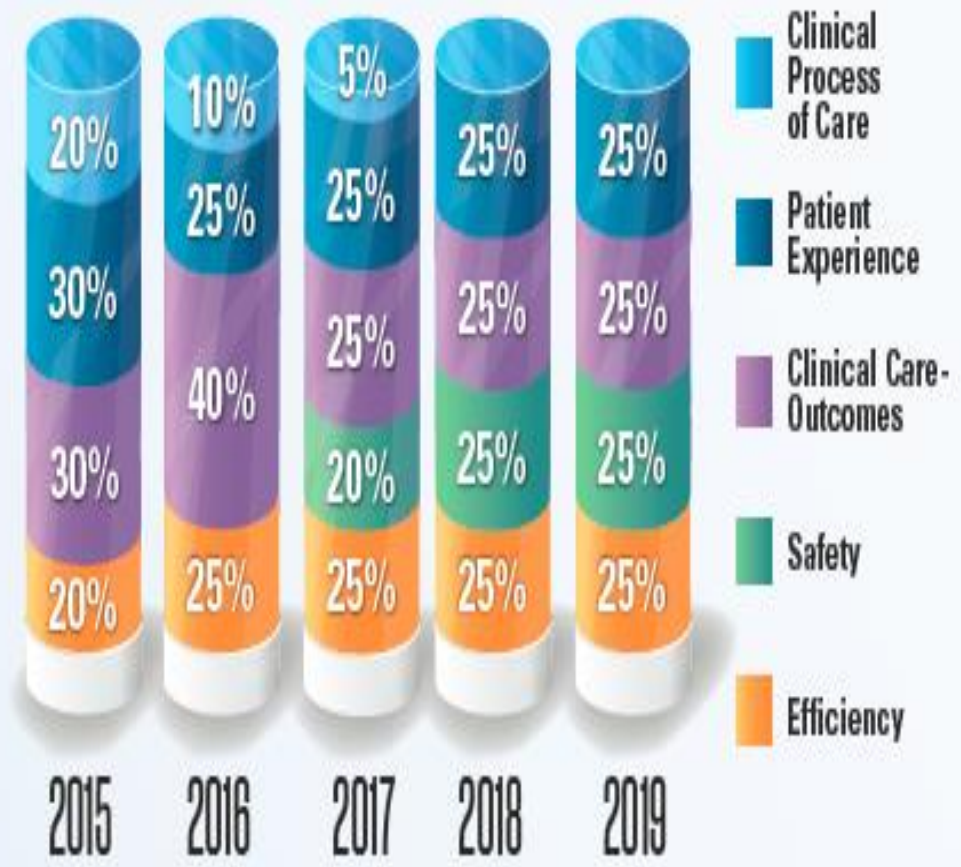
- To maximize BIOPATCH® Protective Disk with CHG investment and clinical effectiveness through third-party professional vascular access maintenance auditing
- To deliver robust data on vascular access devices broken down by type, dressing, unit and policy compliance
- To provide clinical staff with key takeaways and recommendations, providing insight into strengths and areas of improvement
- To partner with you in your efforts to reduce bloodstream infections

The Joint Commission (TJC)
2018 NPSG.07.04.01

Conduct periodic risk assessments for central line–associated bloodstream infections, monitor compliance with evidence-based practices, and evaluate the effectiveness of prevention efforts. The risk assessments are conducted in time frames defined by the hospital, and this infection surveillance activity is hospital-wide, not targeted[1].

The Changing Healthcare Landscape

This pay-for-performance breakdown shows how your dollars are at stake.[1]



DHHS HAI Action Plan [2]

2020 Proposal (From 2015 Baseline)

- 50% ↓ MRSA *(NHSN)*
- 50% ↓ CLABSI

In October 2016, the U.S. Department of Health and Human Services (HHS) announced new targets for the national acute care hospital metrics for the National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination (HAI Action Plan). The targets use data from calendar year 2015 as a baseline — and they replace the previous targets that expired in December 2013. [2]

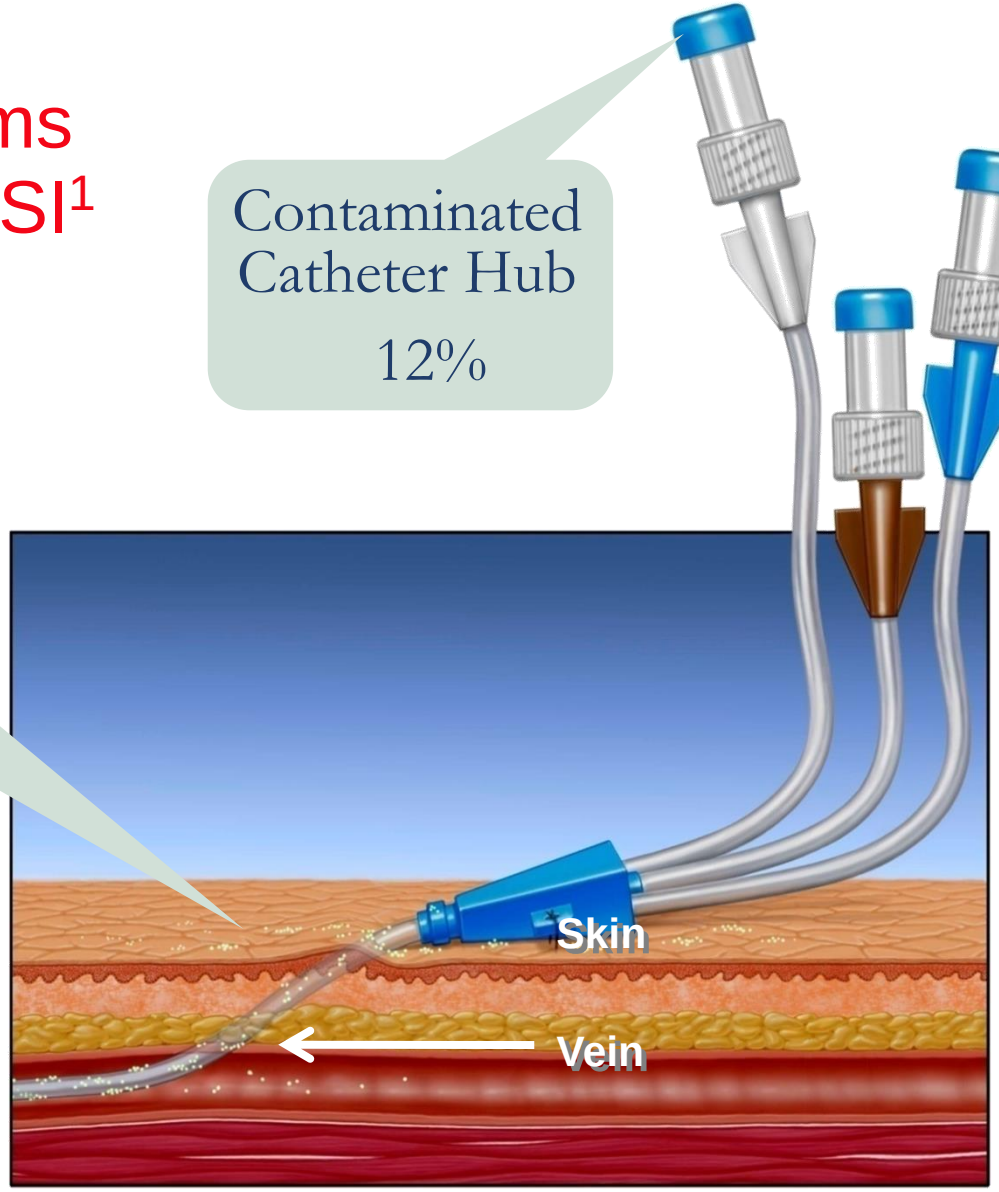
1. "Hospitals-Inpatient: Hospital Value Based Purchasing (HVBP), Scoring." https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/Hospital_VBPurchasing_Fact_Sheet_ICN907664.pdf. Accessed March 12, 2018.
2. National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination. https://health.gov.hcq/prevent-hai-action-plan.asp. Accessed March 12, 2018

The Origin of Microorganisms Causing CRBSI[1]

Contaminated Catheter Hub 12%

Contaminated Infusate <1%

Skin Organisms 60%



Undetermined 28%

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1. Safdar N, Maki DG. The pathogenesis of catheter-related bloodstream infection with nuncuffed short-term central venous catheters. Int Care Med. 2004; 30:62-67.

Dressings Dated

Dressings Dated & Within Policy

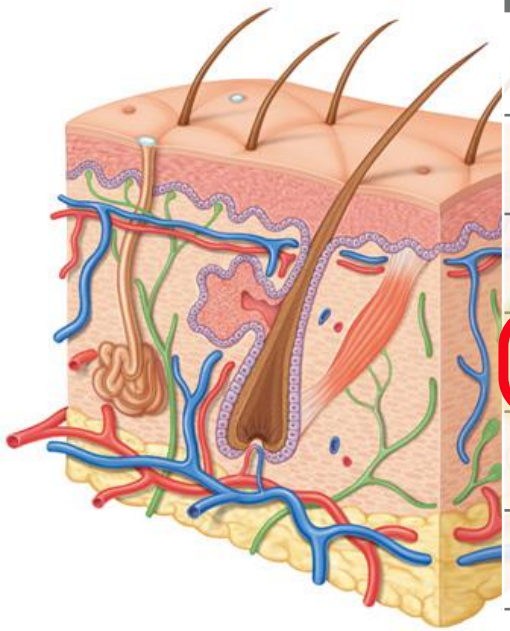
REFER TO APPENDIX A

Dry Dressings

Intact Dressings

REFER TO APPENDIX A

Most BSIs are caused by bacteria from the patients' own skin



HAIs – Major Site of Infections	Estimated No.
Pneumonia	157,500
Gastrointestinal illness	123,100
Urinary tract infections	93,300
Primary bloodstream infections	**71,900**
Surgical site infections from any inpatient surgery	157,500
Other type of infections	118,500
Estimated total number of infections in hospitals	721,800

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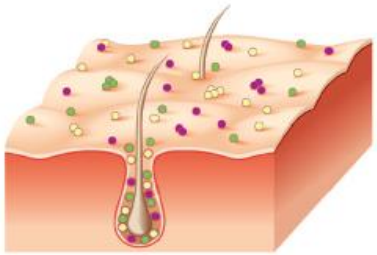
Reducing Surgical Site Infections: A Review. US National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2812878/ Accessed 3/4/18
Catheter-related bloodstream infections. US National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4093967/ Accessed 3/4/18
HAIs at a Glance. Centers for Disease Control and Prevention. https://www.cdc.gov/hai/surveillance/index.html Accessed 3/4/18

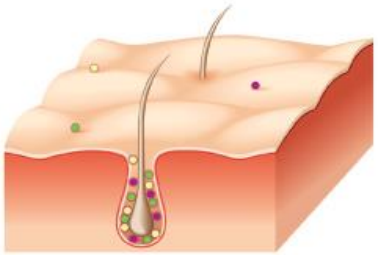
Why Biopatch? Why CHG?

When the Skin is the Source, Every Line Matters



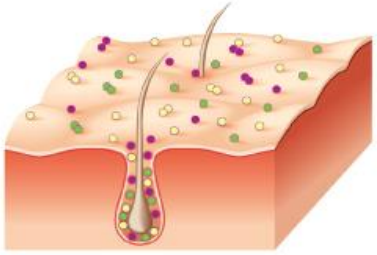
Pre-Prep

Bacteria colonies exist not only on the surface, but below the surface as well, particularly within the hair follicles and sebaceous glands.[1]



Post-Prep (immediately following antiseptic application)

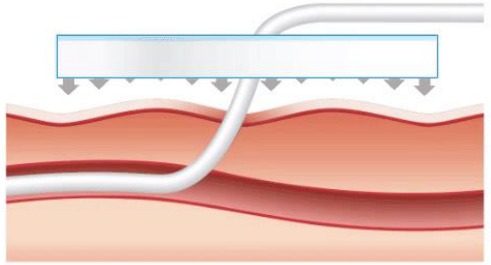
Prepping the skin reduces colony counts of bacteria from the surface only — it never completely disinfects the skin. [1]



Post-Prep (within 1-2 days following antiseptic application)

Resident bacteria begin to re-colonize the skin surface. [1]

Sustained release of CHG



BIOPATCH® extends the post-prep environment for up to 7 days[2]

Pre-Prep

Day 1 – Day 7

1. Hendley JO, Ashe KM. Effect of topical antimicrobial treatment on aerobic bacteria in the stratum corneum of human skin. *Antimicrobial Agents and Chemotherapy*. April 1991;35(4):627-631 2. Bhende MS, Rothenburger S. In vitro antimicrobial effectiveness of 5 catheter insertion-site dressings. *The Journal of the Association for Vascular Access.* 2007; 12(4):227-231

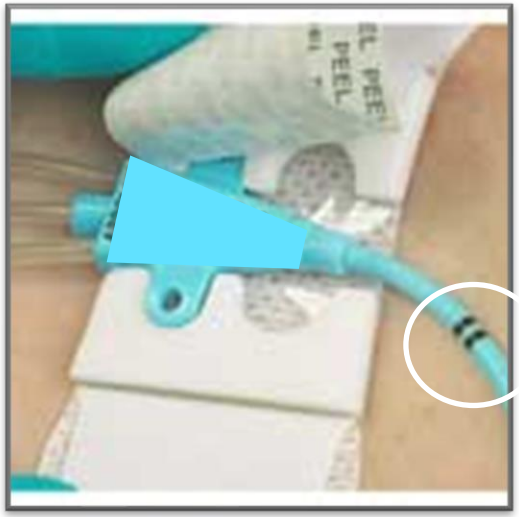
Guidelines and Standards: CHG Dressings

Publication	Highlights
CDC[1]	• For patients aged 18 years and older: Chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing catheter-related bloodstream infection (CRBSI) or catheter-associated bloodstream infection (CABSI) are recommended to protect the insertion site of short-term, non-tunneled central venous catheters. (1A)
SHEA[2]	• Use chlorhexidine-containing dressings for CVCs in patients over 2 months of age
INS[3]	• Use chlorhexidine-impregnated dressings over CVADs to reduce infection risk • Consider the use of chlorhexidine-impregnated dressings with peripheral arterial catheters as an infection reduction intervention • Continuous (implanted) port access has infection rates that are similar to other long-term CVADs
AACN[4]	• Apply a chlorhexidine-impregnated sponge to the (CVC, peripheral arterial, or epidural) site • Place a chlorhexidine sponge dressing around (Ventricular Assist Device) driveline • Apply a chlorhexidine gluconate sponge to the (hemodialysis) VAC insertion site at each dressing change
APIC[5]	• The risk for infection is present during the entire dwell time of the catheter. • The use of a post-insertion care bundle was associated with a significant reduction
ONS[6]	• Use a CHG-impregnated sponge dressing for all (CVC) catheters, including specialty catheters in patients older than 2months of age • Use a CHG-impregnated sponge dressing for any long-term infusion (>4-6 hrs) or if port remains accessed

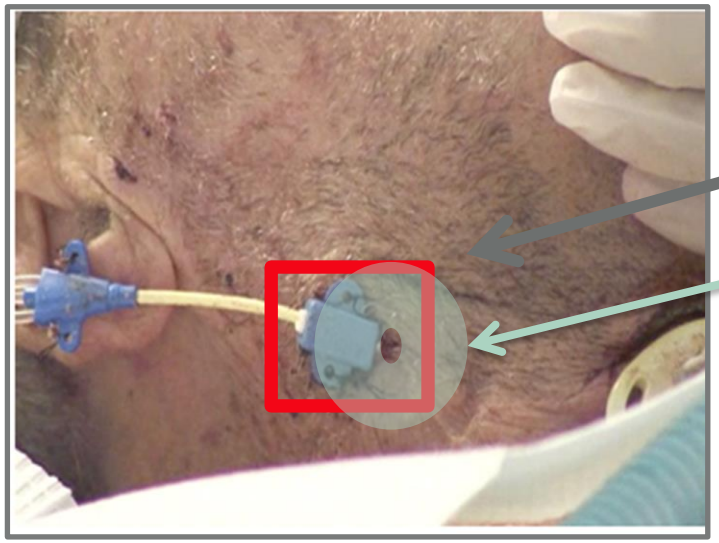
1. 2017 Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections Published Nov 1, 2017. https://www.cdc.gov/infectioncontrol/guidelines/bsi/c-i-dressings/index.html. 2. Marschall, J., et al. Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. ICHE. 3. Infusion Therapy Standards of Practice, Journal of Infusion Nursing. 2016, V39 (1S). 4. Weigand, DL, ed. *Procedure Manual for High Acuity, Progressive, and Critical Care. 7th Ed*, Philadelphia, PA; Saunders; 2017. 5. Guide to Preventing Central Line Associated Bloodstream Infections. APIC. 2017. 6. Access Device Standards of Practice for Oncology Nursing. ONS 2017

Does Your Insertion Practice Optimize Care & Maintenance?

- Follow Manufacturers' instructions for insertion and use to ensure line is secured for Max CHG delivery

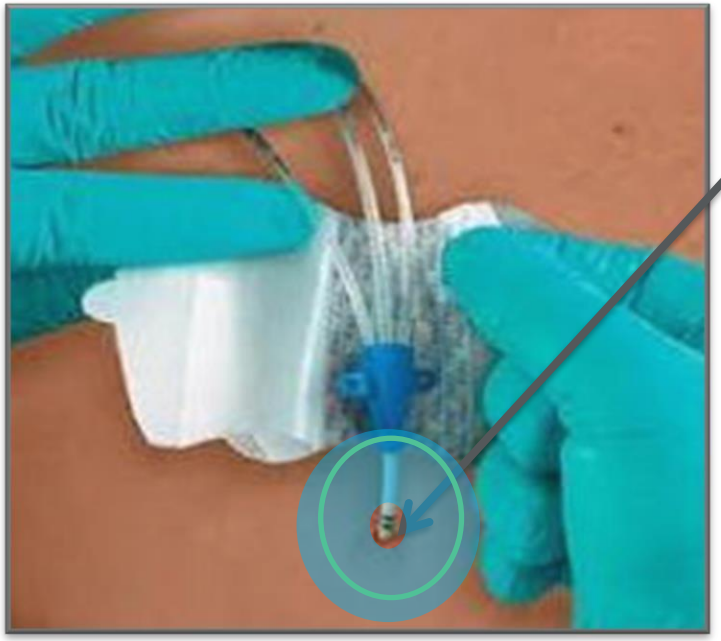


Sample photos



Line Securement does NOT allow for maximum CHG delivery

- Area not accessible for thorough cleaning during dressing changes
- “Hubbed” securement does not allow for 360 degree application of BIOPATCH disk*



Line Secured to allow for maximum CHG Delivery

- “Zero” cm indicator
- Insertion site accessible for thorough cleaning during dressing changes
- Allows for 360 degree application of BIOPATCH disk*

Sample photos

*BIOPATCH placement diagrammed for demonstration purposes only. BIOPATCH should be placed with blue, printed side facing upward

Biopatch Compliance

Gauze

REFER TO APPENDIX A & B

Line Secured for Max CHG Delivery

Sutured Lines

REFER TO APPENDIX B & C

Tubing Labeled

OPTIONAL

Appropriate Protection of Tubing

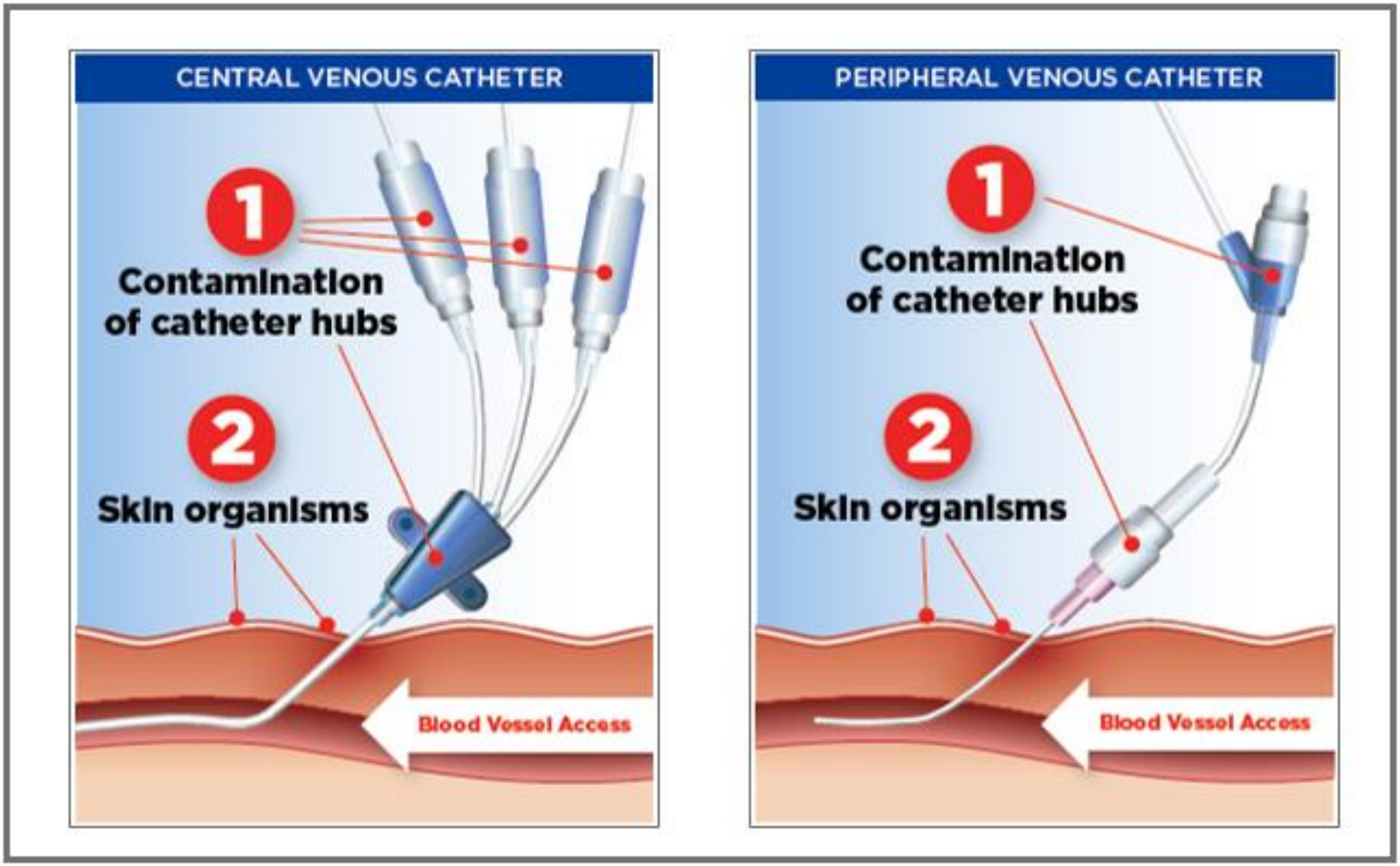
REFER TO APPENDIX D

Disinfection Caps

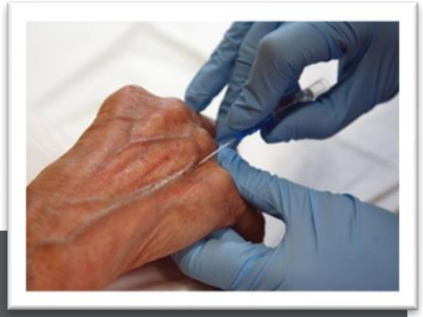
OPTIONAL

REFER TO APPENDIX E

Entry Points of Exogenous Contamination of Vascular Devices

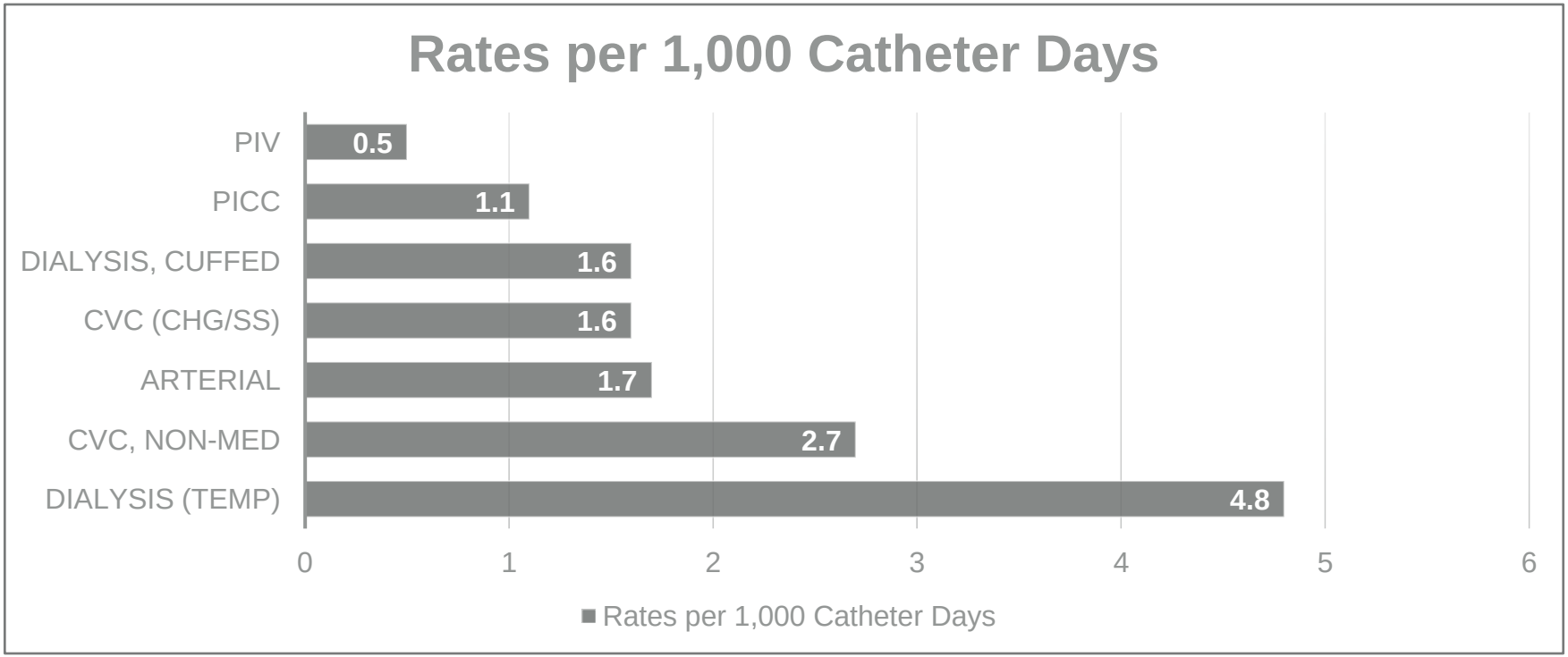


Guidelines & Recommendations: Peripheral IVs (PIV)



Organization	Recommendation
CDC O'Grady, N.P., et al. Guidelines for the Prevention of Intravascular Catheter-Related Infections. AJIC 2011	"As in adults, the use of peripheral venous catheters in pediatric patients might be complicated by phlebitis, infusion extravasation, and catheter infection" "There is no need to replace peripheral catheters more frequently than every 72-96 hours to reduce risk of infection and phlebitis in adults"
SHEA Marschall, J., et al. Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. ICHE	"Peripheral arterial catheters and peripheral venous catheters are not included in most surveillance systems, although they are associated with risk of bloodstream infection independent of CVCs. Future surveillance systems may need to include bloodstream infections associated with these types of catheters"
ONS Access Device Standards of Practice for Oncology Nursing, ONS 2017	"Emerging data suggests that the rate of catheter-related bloodstream infections from peripheral catheters may be higher than once thought"
INS Infusion Therapy Standards of Practice, Journal of Infusion Nursing. 2016, V39 (1S)	"Consider monitoring bloodstream infection rates for peripheral catheters, or vascular catheter associated infections (peripheral) regularly"

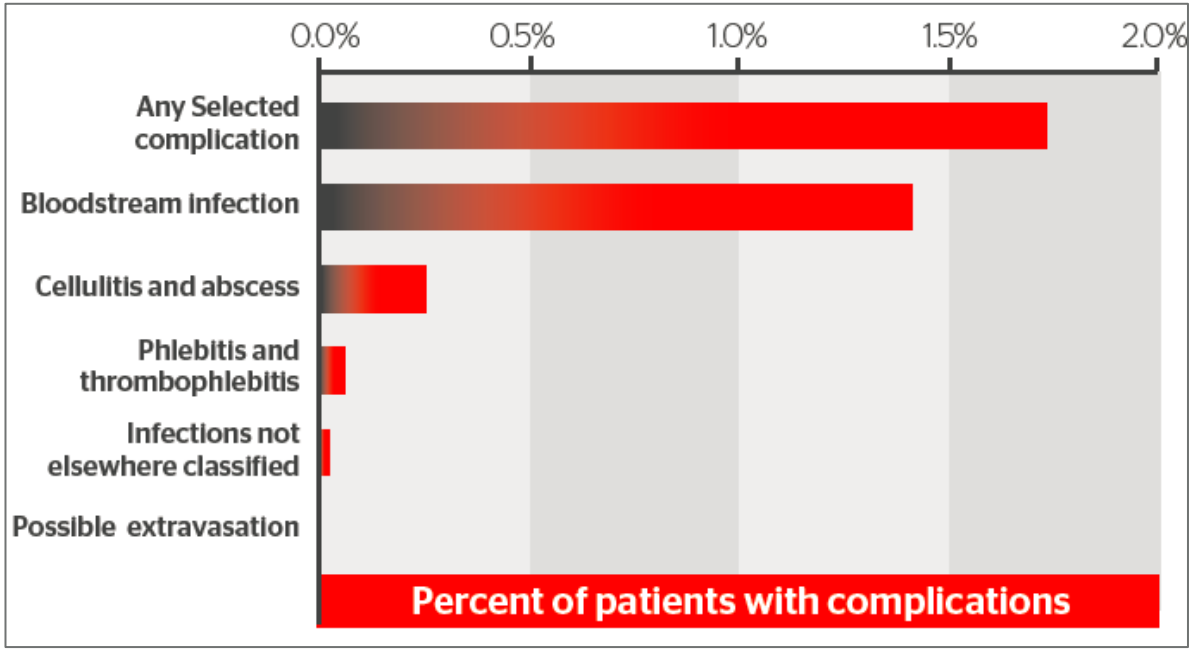
The Risk of Bloodstream Infection in Adults With Different Intravascular Devices: A Systematic Review of 200 Published Prospective Studies



"Since almost all the national effort and progress to date to reduce the risk of IVD-related infection have focused on short-term non-cuffed CVCs used in intensive care units, infection control programs must now strive to consistently apply essential control measures and preventive technologies with all types of IVDs."

Maki, D. et al. Mayo Clin Proc. 2006; 81(9): 1159 - 1171

Evidence Brief: Clinical and Economic Burden of Peripheral Intravenous Catheter-Associated Complications in a U.S. Hospital Discharge Database[1]



Patients with PIV-associated complications have longer LOS, higher costs, and greater risk of death than patients without.

Retrospective Database Analysis, over a 2-year period, from July 2013 to June 2015. Hospital discharge data from the Premier database (more than 700 US hospitals and 6 million patient discharges per year). A large patient population allows for a powered statistical analysis (n=588,375)

1. Lim S, Adams E, Hyde R, Broder M, Chang E, Reddy SR, Tarbox M, Bentley T, Ovington L. Clinical and Economic Burden of Peripheral Intravenous Catheter-Associated Complications in a U.S. Hospital Discharge Database. Poster presented at: 31st Annual Scientific Meeting of the Association for Vascular Access; 2017 Sep 16-19; Phoenix, AZ.

Emerging Evidence

Insertion of an IV catheter is an invasive procedure that introduces multiple risks and potential morbidities, and even mortality, and should be given the respect that it deserves.[1]

Clinical Studies Evaluating PIV-BSI

Author	Year	Publication
Guembe	2017	The Journal of Hospital Infection
Mermel	2017	Clinical Infectious Diseases
Sato	2017	BMC Infectious Diseases
DeVries	2016	Journal of the Association for Vascular Access
Kovacs	2016	American Journal of Infection Control
Heinrich	2013	GMS Hygiene and Infection Control
Mestre	2013	American Journal of Infection Control
Rickard	2013	The Medical Journal of Australia
Dychter	2012	Journal of Infusion Nursing
Hadaway	2012	Journal of Infusion Nursing
Trinh	2011	Infection Control and Hospital Epidemiology
Pien	2010	American Journal of Medicine
Easterlow	2009	Journal of Clinical Nursing
Zing	2009	International Journal of Antimicrobial Agents
Pujol	2007	Journal of Hospital Infection
Maki	2006	Mayo Clin Proc.

1. Helm R. Accepted but Unacceptable: Peripheral IV Catheter Failure Rate. Journal of Infusion Nursing. 2015; 38:3;180-201

REFER TO APPENDIX J

Peripheral Data-Site Selection

REFER TO APPENDIX N

Dressings Dated

Dressings Dated Within Policy

REFER TO APPENDIX O

Dressings Dry

Dressings Intact

REFER TO APPENDIX O

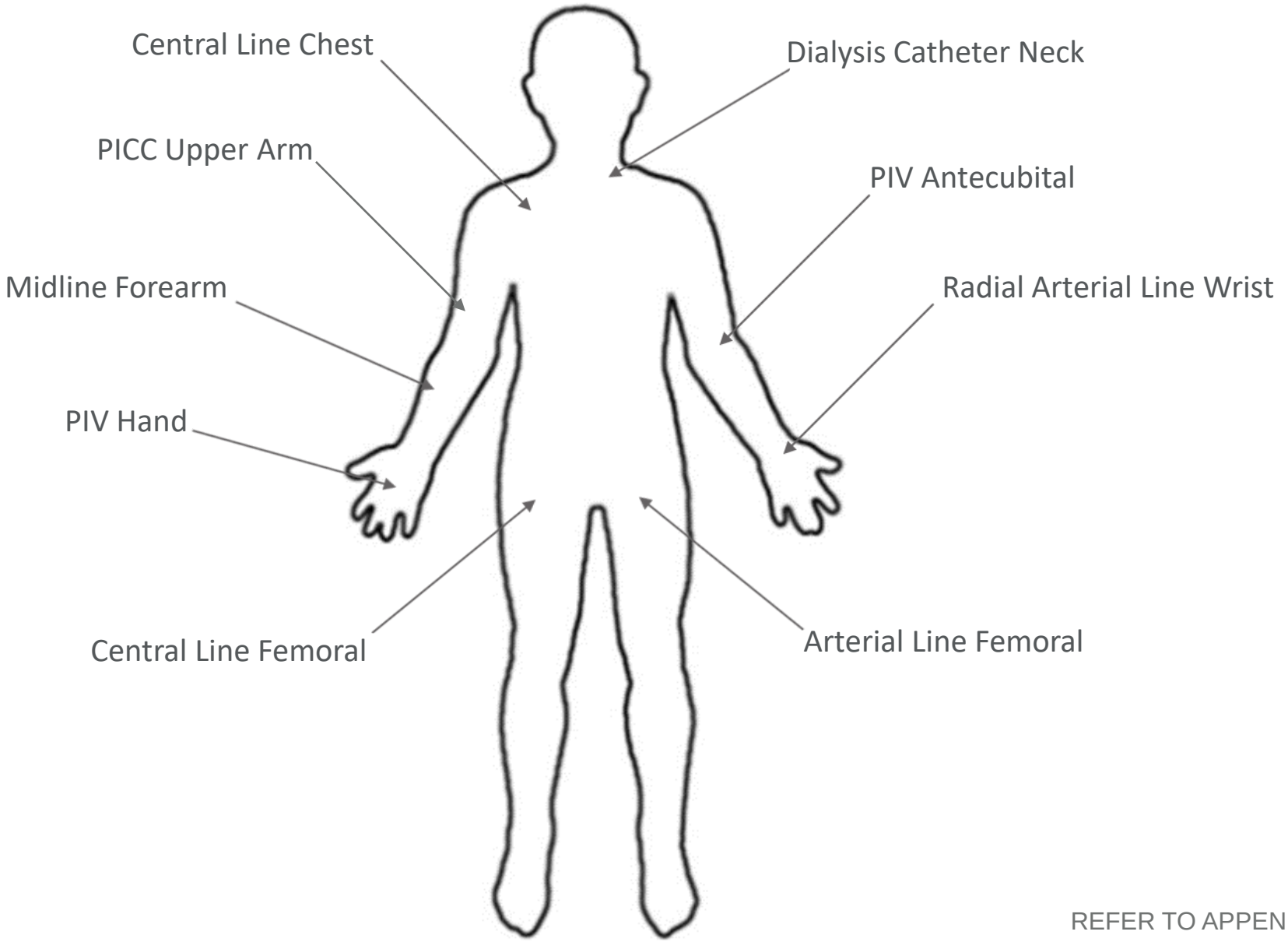
Securement Dressing or Device

REFER TO APPENDIX O

Protected Peripheral VADs- Biopatch Compliance

OPTIONAL

Multiple Vascular Access Devices



REFER TO APPENDIX R

Multiple Vascular Access Devices - Patient Data

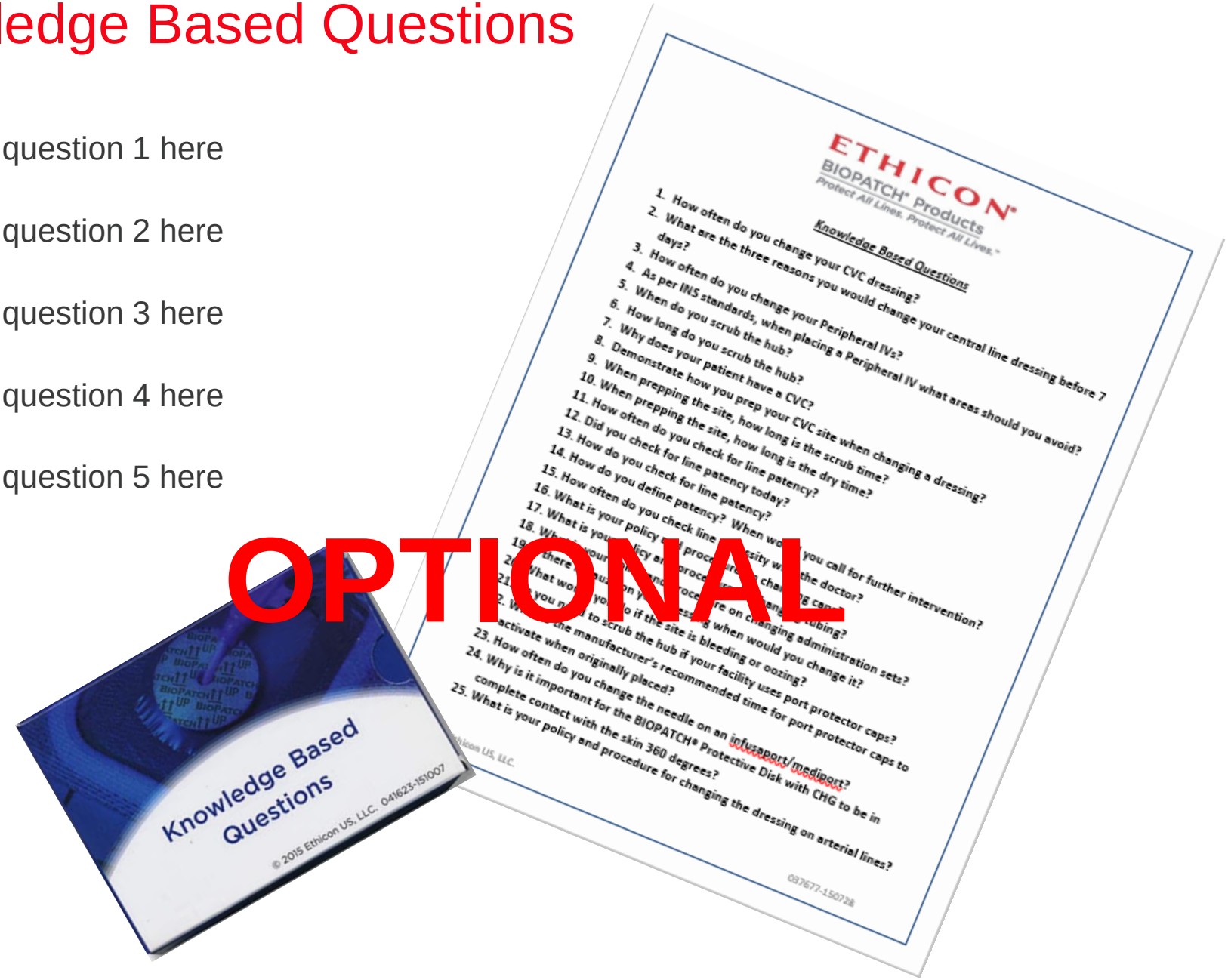
OPTIONAL

REFER TO APPENDIX R

Knowledge Based Questions

1. Insert question 1 here
2. Insert question 2 here
3. Insert question 3 here
4. Insert question 4 here
5. Insert question 5 here

OPTIONAL



Key Takeaways

REFER TO APPENDIX (tbd)

Building One Standard of Care for All Vascular Access Devices

Flushing Protocols

Alcohol Impregnated Caps

Stabilization

Scrub the Hub

Sterile Transparent Dressing

Insertion Bundles

CHG Skin Prep

Maintenance Bundles

Protective Disk with CHG

BIOPATCH Protective Disk with CHG is a hydrophilic wound dressing that is used to absorb exudate and to cover a wound caused by the use of vascular and non-vascular percutaneous medical devices such as:

- Central Venous Lines
- Arterial Catheters
- Dialysis Catheters
- Drains
- Chest Tubes
- IV Catheters

- Midline Catheters
- Epidural Catheters
- Externally-placed Orthopedic Pins
- Peripherally-inserted Coronary Catheters

It is also intended to reduce local infections, catheter related blood stream infections (CRBSI) and skin colonization of microorganisms commonly related to CRBSI in patients with central venous or arterial catheters

For complete indications, contraindications, precautions, warnings, and adverse reactions, please reference package insert

Next Steps

- 100% commitment to providing additional education to help you meet and exceed your institutional goals
- We will partner with you to help support quality patient care, nursing excellence and innovations in professional nursing practice.
- Next Steps: Repeat Point Prevalence _____(tbd)_____

Questions

Guidelines and Standards Appendix

The following slides contain Guidelines and Standards that are commonly referenced for insertion, care and maintenance of vascular access devices.

APPENDIX A: Dressings

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	Label the dressing with the date performed or date to be changed based on organizational policies and procedures Replace the catheter site dressing if the dressing becomes damp, loosened, or visibly soiled A sterile dressing is applied and maintained on all peripheral, non-tunneled, peripherally inserted central catheters, accessed implanted VADs, and tunneled cuffed catheters, at least until the insertion site is well healed Replace dressing on short-term CVC sites at least every 2 days for gauze dressings
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	Note that a gauze dressing underneath a TSM dressing is considered a gauze dressing and changed at least every 2 days Replace the catheter site dressing if the dressing becomes damp, loosened, or visibly soiled Replace dressing on short-term CVC sites at least every 2 days for gauze dressings.

APPENDIX B: CHG Dressings

Publication	Highlights
CDC[1]	• For patients aged 18 years and older: Chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing catheter-related bloodstream infection (CRBSI) or catheter-associated bloodstream infection (CABSI) are recommended to protect the insertion site of short-term, non-tunneled central venous catheters. (1A)*
SHEA[2]	• Use chlorhexidine-containing dressings for CVCs in patients over 2 months of age*
INS[3]	• Use chlorhexidine-impregnated dressings over CVADs to reduce infection risk* • Consider the use of chlorhexidine-impregnated dressings with peripheral arterial catheters as an infection reduction intervention* • Continuous (implanted) port access has infection rates that are similar to other long-term CVADs
AACN[4]	• Apply a chlorhexidine-impregnated sponge to the (CVC, peripheral arterial, or epidural) site* • Place a chlorhexidine sponge dressing around (Ventricular Assist Device) driveline* • Apply a chlorhexidine gluconate sponge to the (hemodialysis) VAC insertion site at each dressing change*
APIC[5]	• The risk for infection is present during the entire dwell time of the catheter. • The use of a post-insertion care bundle was associated with a significant reduction
ONS[6]	• Use a CHG-impregnated sponge dressing for all (CVC) catheters, including specialty catheters in patients older than 2months of age* • Use a CHG-impregnated sponge dressing for any long-term infusion (>4-6 hrs) or if port remains accessed*

1. 2017 Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections Published Nov 1, 2017. (https://www.cdc.gov/infectioncontrol/guidelines/bsi/c-i-dressings/index.html). 2. Marschall, J., et al. Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. ICHE. 3. Infusion Therapy Standards of Practice, Journal of Infusion Nursing. 2016, V39 (1S). 4. Procedure Manual for High Acuity, Progressive, and Critical Care. 7th Ed, AACN 2017. 5. Guide to Preventing Central Line Associated Bloodstream Infections. APIC. 2017. 6. Access Device Standards of Practice for Oncology Nursing, ONS 2017

APPENDIX C: Catheter Securement

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	The use of a catheter stabilization device should be considered the preferred alternative to tape or sutures when feasible.[2]
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	Use a suture-less securement device to reduce the risk of infection for intravascular catheters.[1]

APPENDIX D: Tubing

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	Aseptically attach a new, sterile, compatible covering device to the male luer end of the administration set after each intermittent use. Do not attach the exposed male luer end of the administration set to a port on the same set ("looping").
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	In patients not receiving blood, blood products, or fat emulsions, replace administration sets that are continuously used, including secondary sets and add-on devices, no more frequently than 96-hour intervals, but at least every 7 days.

APPENDIX E: Hub Disinfection

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	Perform a vigorous mechanical scrub for manual disinfection of the needleless connector prior to each VAD access and allow it to dry Use of passive disinfection caps containing disinfecting agents (e.g., isopropyl alcohol) has been shown to reduce intraluminal microbial contamination and reduce the rates of central line-associated bloodstream infection (CLABSI)
Safdar N, Maki DG. *The pathogenesis of catheter-related bloodstream infection with nuncuffed short-term central venous catheters. Int Care Med. 2004; 30:62-67.*	12% of CRBSI originate from contaminated catheter hubs

APPENDIX F: Central Venous Catheters

Publication	Recommendation
CDC O'Grady, N.P., et al. Guidelines for the Prevention of Intravascular Catheter-Related Infections. AJIC 2011	Prepare clean skin site with > 0.5% chlorhexidine with alcohol Use a chlorhexidine/silver sulfadiazine or minocycline/rifampin - impregnated CVC* (in patients whose catheter is expected to remain in place >5 days if, after successful implementation of a comprehensive strategy to reduce rates of CLABSI, the CLABSI rate is not decreasing) Use ultrasound guidance to place CVCs Use a CVC with the minimum number of necessary ports or lumens Do not administer routine systemic antimicrobial prophylaxis prevent CRBSI Use a subclavian site, Avoid jugular or femoral site Replace the catheter as soon as possible (within 48 hours) When adherence to aseptic technique cannot be ensured and catheters inserted during a medical emergency
CDC Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections Published Nov 1, 2017	For patients aged 18 years and older: Chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing catheter-related bloodstream infection (CRBSI) or catheter-associated bloodstream infection (CABSI) are recommended to protect the insertion site of short-term, non-tunneled central venous catheters. (1A)
SHEA Marschall, J., et al. Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. ICHE	Factors associated with increased risk of CLABSI includes heavy microbial colonization at the insertion site. Insertion: hand hygiene, max. sterile barrier precautions, avoid fem. vein insertion – select adults, alcoholic CHG solution containing more than 0.5% CHG Daily bathing with CHG for adult ICU pop. Antiseptic- or antimicrobial- impregnated CVCs in adult patients Chlorhexidine-containing dressings for CVCs in patients over 2 mo of age Antiseptic-containing hub/connector cap/port protector to cover connectors

APPENDIX G: Central Venous Catheters *continued*

Publication	Recommendation
INS Infusion Therapy Standards of Practice, Journal of Infusion Nursing. 2016, V39 (1S)	Ensure that the intended VAD site is visibly clean prior to application of an antiseptic solution Remove excess hair at the insertion site if needed to facilitate application of VAD dressings (do not shave) Use a standardized insertion check list to be completed by someone other than the inserter Avoid the use of tape or sutures as they are not effective alternatives to an ESD (Engineered Stabilization Device)….Sutures are associated with needle-stick injury, in addition to supporting the growth of biofilm and increasing the risk of catheter-related blood stream infection. Use chlorhexidine-impregnated dressings Recognize the risk of contamination with each manipulation of the infusion system (access with syringes, tubing, etc…) Continuous (implanted) port access has infection rates that are similar to other long-term CVADs
AACN Procedure Manual for High Acuity, Progressive, and Critical Care. 7th Ed, AACN 2017	Cleanse the skin, catheter, and stabilizing device with 2% chlorhexidine-based preparation Apply a chlorhexidine-impregnated sponge to the site Assess the catheter site daily and as needed by palpation through an intact dressing
APIC Guide to Preventing Central Line Associated Bloodstream Infections. APIC. 2017	Use of an evidence-based bundle of interventions can improve patient outcomes only if the interventions are consistently completed Establishment of a team dedicated to all aspects of intravenous therapy Use of insertion check list The risk for infection is present during the entire dwell time of the catheter The use of a post-insertion care bundle was associated with a significant reduction
ONS Access Device Standards of Practice for Oncology Nursing, ONS 2017	Consider use of connectors with … visible fluid path to assess efficacy of flush technique and a solid, flat surface that easily is disinfected Use a CHG-impregnated sponge dressing for all catheters, including specialty catheters in patients older than 2months of age - for any long term infusion (>4-6 hrs) or if port remains accessed

APPENDIX H: Implanted Port

Publication	Recommendation
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	Use a chlorhexidine-impregnated sponge dressing for temporary short-term catheters in patients older than 2 months of age if the CLABSI rate is not decreasing despite adherence to basic prevention measures, including education and training, appropriate use of chlorhexidine for skin antisepsis, and MSB No recommendation can be made regarding the frequency for replacing needles to access implantable ports. Unresolved issue
SHEA Marschall, J., et al. *Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals*: 2014 Update. ICHE	These recommendations (sic) are not stratified on the basis of catheter type (e.g., tunneled, implanted, cuffed, noncuffed catheter, and dialysis catheter) Use chlorhexidine-containing dressings for CVCs in patients over 2 months of age
ONS *Access Device Standards of Practice for Oncology Nursing*, ONS 2017	Following chlorhexidine (CHG) skin preparation, use a CHG –impregnated sponge dressing for any long-term infusion exceeding 4-6 hours or if the port remains accessed for intermittent infusion for greater than 4-6 hours
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	When used intermittently, ports have a lower incidence of catheter- related bloodstream infection (CR-BSI); however, continuous port access has infection rates that are similar to other long-term CVADs. A sterile dressing is maintained over the access site if the implanted vascular access port remains accessed. Use chlorhexidine-impregnated dressings over CVADs to reduce infection risk when the extraluminal route is the primary source of infection.

APPENDIX I: Hemodialysis Catheters

Publication	Recommendation
CDC Core Interventions for Dialysis Bloodstream Infection Prevention (last update 6/2016)	Apply antibiotic ointment or povidone-iodine ointment to catheter exit sites during dressing change. See information on selecting an antimicrobial ointment for hemodialysis catheter exit sites (selecting an antimicrobial ointment). Use of chlorhexidine-impregnated sponge dressing might be an alternative.
SHEA Marschall, J., et al. *Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals*: 2014 Update. ICHE	These recommendations (sic) are not stratified on the basis of catheter type (e.g., tunneled, implanted, cuffed, non-cuffed catheter, and dialysis catheter) Infection prevention and control efforts should include other vulnerable populations, such as patients receiving hemodialysis through catheters, intraoperative patients, and oncology patients. Use chlorhexidine-containing dressings for CVCs in patients over 2 months of age
AACN *Procedure Manual for High Acuity, Progressive, and Critical Care*. 7th Ed, AACN 2017.	Dressing supplies (… triple-antibiotic ointment or chlorhexidine-impregnated sponge) Procedure Step: Apply a chlorhexidine gluconate sponge to the VAC insertion site at each dressing change Rationale: Lowers the incidence of dialysis catheter–related infections

APPENDIX J: Epidural Catheters

Publication	Recommendation
AACN *Procedure Manual for High Acuity, Progressive, and Critical Care*. 7th Ed, AACN 2017.	Use of povidone-iodine versus chlorhexidine is controversial. The antiseptic solution should be allowed to dry before the initial incision is made. Studies suggest chlorhexidine is neurotoxic. The choice of povidone-iodine or chlorhexidine as an antiseptic agent is an unresolved issue. Both should be allowed to dry completely. Institutional standards may vary with regard to antiseptic choice—follow your institutional standard. Although the package insert for chlorhexidine warns against use before any neuraxial procedures, a large retrospective study and several anesthesiology societies recommend chlorhexidine as an antiseptic. Do not use an alcohol-based preparation. Use aqueous chlorhexidine or povidone-iodine. Preparations with alcohol are neurotoxic to the epidural space. The choice of povidone-iodine or chlorhexidine as an antiseptic agent is controversial. Both should be allowed to dry completely. Studies suggest chlorhexidine is neurotoxic.
ONS *Access Device Standards of Practice for Oncology Nursing*, ONS 2017	"Maintain maximum sterile barrier precautions with mask and sterile gloves with any access or maintenance procedure" "A chlorhexidine impregnated dressing or sponge has been found to significantly reduce the rate of epidural infections"
INS *Infusion Therapy Standards of Practice*, Journal of Infusion Nursing. 2016, V39 (1S)	"Maintain strict aseptic technique while wearing a mask and sterile gloves during any intraspinal access or maintenance procedure." "Consider the use of chlorhexidine impregnated dressings for patients with an epidural access device. A significant reduction in epidural skin colonization and catheter tip colonization has been demonstrated with their use"

APPENDIX K: Peripheral Arterial Catheters

Publication	Recommendation
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	"A minimum of a cap, mask, sterile gloves and a small sterile fenestrated drape should be used during peripheral arterial catheter insertion" "During axillary or femoral artery catheter insertion, maximal sterile barriers precautions should be used" "Do not routinely replace arterial catheters to prevent catheter related infections"
SHEA Marschall, J., et al. *Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals*: 2014 Update. ICHE	"Besides central venous catheters (CVCs), peripheral arterial catheters also carry a risk of infection."
AACN *Procedure Manual for High Acuity, Progressive, and Critical Care*. 7th Ed, AACN 2017.	"Arterial catheter sites are a source of bloodstream infections, with the femoral site being more heavily associated with colonization compared with other sites. The infective potential of the arterial catheter is equivalent to the short term central venous device regarding colonization and bloodstream infections, and should be assessed together for signs and symptoms of infection" "Apply a chlorhexidine impregnated sponge to the site"
INS *Infusion Therapy Standards of Practice*, Journal of Infusion Nursing. 2016, V39 (1S)	"Consider the use of chlorhexidine-impregnated dressings with peripheral arterial catheters as an infection reduction intervention"

APPENDIX L: Peripheral IVs (PIV)

Publication	Recommendation
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	"As in adults, the use of peripheral venous catheters in pediatric patients might be complicated by phlebitis, infusion extravasation, and catheter infection"
SHEA Marschall, J., et al. *Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals*: 2014 Update. ICHE	"Peripheral arterial catheters and peripheral venous catheters are not included in most surveillance systems, although they are associated with risk of bloodstream infection independent of CVCs. Future surveillance systems may need to include bloodstream infections associated with these types of catheters"
ONS *Access Device Standards of Practice for Oncology Nursing*, ONS 2017	"Emerging data suggests that the rate of catheter-related bloodstream infections from peripheral catheters may be higher than once thought"
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	"Consider monitoring bloodstream infection rates for peripheral catheters, or vascular catheter associated infections (peripheral) regularly"

APPENDIX M: Peripheral IV - REMOVAL

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	*Remove short peripheral and midline catheters in pediatric and adult patients when clinically indicated based on findings from site assessment and or clinical signs and symptoms of systemic complications (e.g.. Bloodstream infection).* Signs and symptoms of complications with or without infusion through the catheter include, but are not limited to the presence of: 1. *Any level of pain and or tenderness with or without palpation* 2. *Changes in color: erythema or blanching* 3. *Changes in skin temperature: hot or cold* 4. *Edema* 5. *Induration* 6. *Leakage of fluid or purulent drainage from the puncture site* 7. *Other types of dysfunction (e.g., resistance when flushing, absence of the blood return)*
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	"There is no need to replace peripheral catheters more frequently than every 72-96 hours to reduce risk of infection and phlebitis in adults"

APPENDIX N: Peripheral IV Site Selection

Publication	Recommendation
INS *Infusion Therapy Standards of Practice*, Journal of Infusion Nursing. 2016, V39 (1S)	Short Peripheral Catheters (adult) Use the venous site most likely to last the full length of the prescribed therapy Consider using: • forearm to increase dwell time, decrease pain during dwell time, promote self-care, and prevent accidental removal and occlusions. • veins found on the dorsal and ventral surfaces of the upper extremities, including the metacarpal, cephalic, basilic, and median veins Avoid using • the ventral surface of the wrist due to pain on insertion and possible nerve damage • areas of flexion and areas of pain on palpation • compromised areas and sites distal to these compromised Make no more than 2 attempts at short peripheral intravenous access per clinician, and limit total attempts to no more than 4

APPENDIX O: Peripheral IV Dressings

Publication	Recommendation
INS *Infusion Therapy Standards of Practice*, Journal of Infusion Nursing. 2016, V39 (1S)	Label the dressing with the date performed or date to be changed based on organizational policies and procedures. Perform dressing changes on short peripheral catheters if the dressing becomes damp, loosened, and/or visibly soiled *and at least* every 5 to 7 days. For peripheral catheters, consider two options for catheter stabilization an integrated stabilization feature on the catheter hub combined with a bordered polyurethane securement dressing or a standard round hub peripheral catheter in combination with an adhesive ESD (Engineered Stabilization Device).

APPENDIX P: Midline Catheters

Publication	Recommendation
CDC O'Grady, N.P., et al. *Guidelines for the Prevention of Intravascular Catheter-Related Infections*. AJIC 2011	Use a midline catheter or peripherally inserted central catheter (PICC), instead of a short peripheral catheter, when the duration of IV therapy will likely exceed six days Sterile gloves should be worn for the insertion of arterial, central, and midline catheters
AACN *Procedure Manual for High Acuity, Progressive, and Critical Care*. 7th Ed, AACN 2017.	Procedure step: "… apply a chlorhexidine impregnated gel dressing or sponge to the site and then cover it with a sterile transparent semipermeable membrane dressing" Rationale: "Decreases catheter-related infections"
INS *Infusion Therapy Standards of Practice*, Journal of Infusion Nursing. 2016, V39 (1S)	Consider the use of maximal sterile barrier precautions with midline catheter insertion. Remove

APPENDIX Q: Peripheral Arterial Catheters

Publication	Recommendation
CDC O'Grady, N.P., et al. Guidelines for the Prevention of Intravascular Catheter-Related Infections. AJIC 2011	"A minimum of a cap, mask, sterile gloves and a small sterile fenestrated drape should be used during peripheral arterial catheter insertion" "During axillary or femoral artery catheter insertion, maximal sterile barriers precautions should be used" "Do not routinely replace arterial catheters to prevent catheter related infections"
SHEA Marschall, J., et al. Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. ICHE	"Besides central venous catheters (CVCs), peripheral arterial catheters also carry a risk of infection."
AACN Procedure Manual for High Acuity, Progressive, and Critical Care. 7th Ed, AACN 2017.	"Arterial catheter sites are a source of bloodstream infections, with the femoral site being more heavily associated with colonization compared with other sites. The infective potential of the arterial catheter is equivalent to the short term central venous device regarding colonization and bloodstream infections, and should be assessed together for signs and symptoms of infection" "Apply a chlorhexidine impregnated sponge to the site"
INS Infusion Therapy Standards of Practice, Journal of Infusion Nursing. 2016, V39 (1S)	"Consider the use of chlorhexidine-impregnated dressings with peripheral arterial catheters as an infection reduction intervention"

APPENDIX R: Line Necessity- Central and Peripheral Vascular Access Devices

Publication	Recommendation
INS *Infusion Therapy Standards of Practice,* Journal of Infusion Nursing. 2016, V39 (1S)	The clinical need for each peripheral and non-tunneled central vascular access device (CVAD) is assessed on a daily basis. *Remove the short peripheral catheter if it is no longer included in the plan of care or has not been used for 24 hours or more (V)*
CDC Bloodstream Infection Event. Centers for Disease Control and Prevention website. www.cdc.gov. Accessed 5/16/17	Patients with multiple vascular access devices who develop a Bloodstream Infection may meet the NHSN Central Line Associated Bloodstream Infection (CLABSI) definition if a central line is in place regardless of the causative vascular device.[1]