



A Destiny of Success



TRAINING
EDUCATION
QUALITY IMPROVEMENT
HEALTHCARE EXCELLENCE

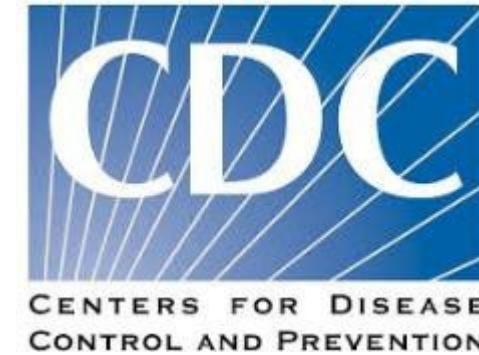
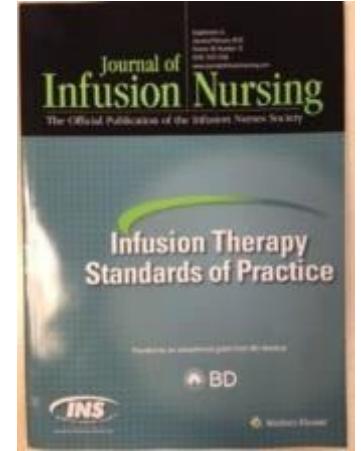


CLABSI/CRBSI prevention and Solutions

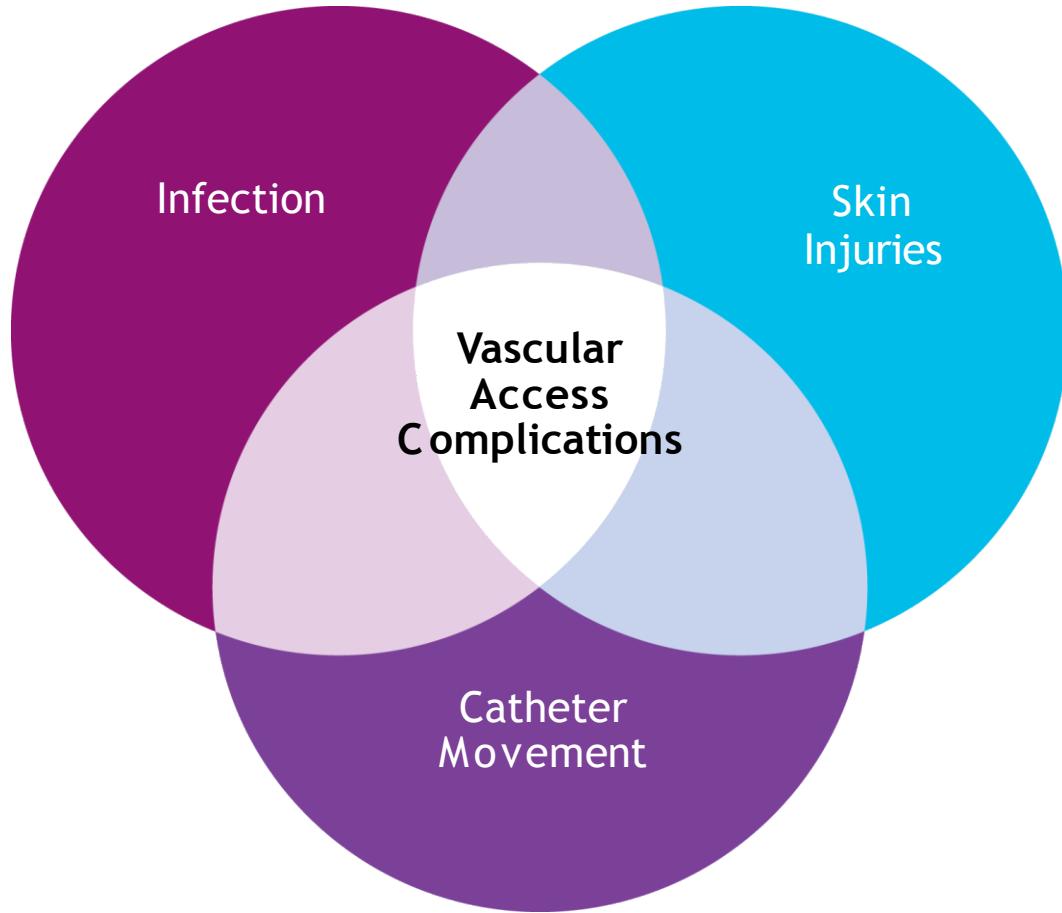
Dr. Magda Abdeltwab

Better patient outcomes

- Introduction into **CLABSI** main complication related to central lines
- Review **insertion** bundle of care and **solutions**.
- Discuss **Maintenance** bundle of care and **solutions**.
- CRBSI prevention Guidelines during **COVID-19**



Vascular Access Care & Maintenance



- Overall cost increase
- Quality of care decrease
- Poor clinical outcomes
- Patient dissatisfaction

Main complication for central line catheters



Courtesy: Dr Eggimann

Central Line Bloodstream Infections

Patient impact

Mortality:

12%-25%
increase^{9,10,11}

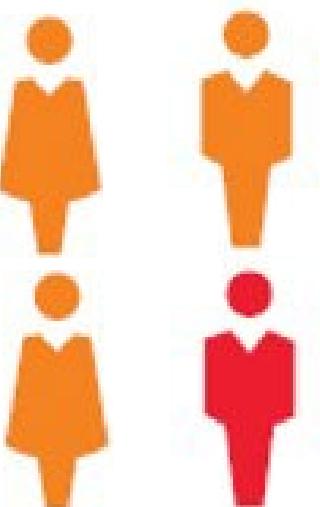
CR-BSIs cause the highest number of preventable hospital deaths. ¹

1.57 times higher
risk of mortality in
critically ill adults¹⁵

CR-BSIs are significant contributors
to preventable hospital deaths.²

1 in 4

Patients who contract
CRBSI die¹³



1.Siempos II, Kopterides P, Tsangaris I, Dimopoulou I, Armaganidis AE. Impact of catheter-related bloodstream infections on the mortality of critically ill patients: A meta-analysis*. Critical care medicine. 2009 Jul 1;37(7):2283-9.

9.O'Grady NP, Alexander M, Dellinger EP, Gerberding JL, Heard SO, Maki DG, Masur H, McCormick RD, Mermel LA, Pearson ML, Raad II. Guidelines for the prevention of intravascular catheter-related infections. Clinical infectious diseases. 2002 Dec 1;35(11):1281-307.

10-11 Kluger DM, Maki DG. The relative risk of intravascular device related bloodstream infections in adults. In39th Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, CA: American Society for Microbiology 1999 Sep 26 (Vol. 514).

13. Maki DG, Kluger DM, Crnich CJ. The risk of bloodstream infection in adults with different intravascular devices: a systematic review of 200 published prospective studies. In Mayo Clinic Proceedings 2006 Sep 30 (Vol. 81, No. 9, pp. 1159-1171). Elsevier.

Cost to treat :

\$44,000

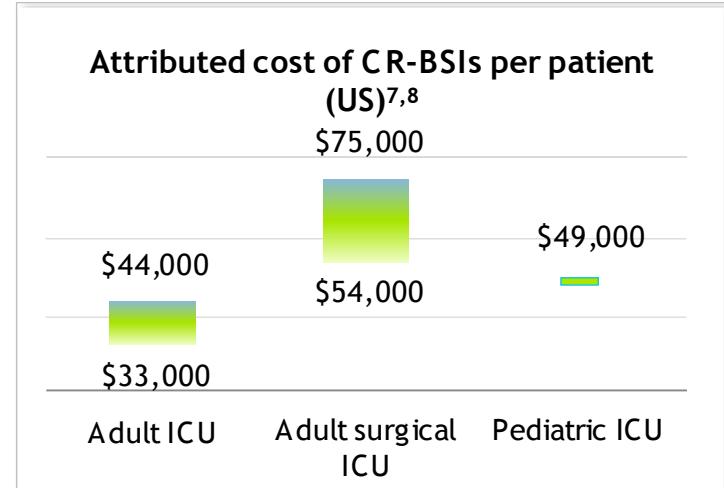
Cost per CR-BSI for adult inpatients

\$1.85 billion

CR-BSI annual cost to US healthcare system

12-24 more hospitalization days

Real world evidence has demonstrated an increase in hospital resources- and associated cost - required to treat morbidities due to CR-BSIs¹⁷⁻²¹



CLABSI is the most costly HAI on a per-case basis¹⁴ 2013 zimlichman meta analysis

7.Blot SI, Depuydt P, Annemans L, Benoit D, Hoste E, De Waele JJ, Decruyenaere J, Vogelaers D, Colardyn F, Vandewoude KH. Clinical and economic outcomes in critically ill patients with nosocomial catheter-related bloodstream infections. Clinical Infectious Diseases. 2005 Dec 1;41(11):1591-8.

8.Renaud B, Brun-Buisson C. Outcomes of primary and catheter-related bacteremia: a cohort and case-control study in critically ill patients. Am J Respir Crit Care Med 2001; 163:1584-90.

Dimick JB, Pelz RK, Consunji R, Swoboda SM, Hendrix CW, Lipsett PA. Increased resource use associated with catheter-related bloodstream infection in the surgical intensive care unit. Arch Surg 2001; 136:229-34.

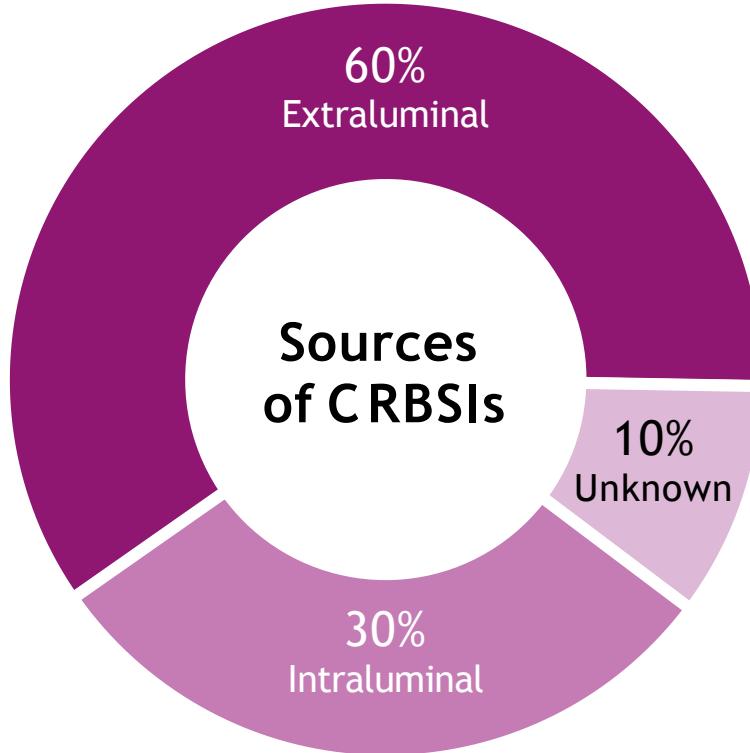
14.Warren DK, Quadir WW, Hollenbeak CS, Elward AM, Cox MJ, Fraser VJ. Attributable cost of catheter-associated bloodstream infections among intensive care patients in a nonteaching hospital. Crit Care Med 2006; 34:2084-

9. 15.Pittet D, Tarara D, Wenzel RP. Nosocomial bloodstream infection in critically ill patients. Excess length of stay, extra costs, and attributable mortality. JAMA 1994; 271:1598-601

16.Hollenbeak CS. The cost of catheter-related bloodstream infections: implications for the value of prevention. Journal of Infusion Nursing. 2011 Sep 1;34(5):309-13.

17-21 Scott RD. The direct medical costs of healthcare-associated infections in US hospitals and the benefits of prevention. Division of Healthcare Quality Promotion National Center for Preparedness, Detection, and Control of Infectious Diseases, Centers for Disease Control and Prevention; 2009. http://www.cdc.gov/hai/pdfs/hai/scott_costpaper.pdf Accessed October 21, 2015. Using the <http://www.usinflationcalculator.com/> to adjust 2007 dollars to 2015

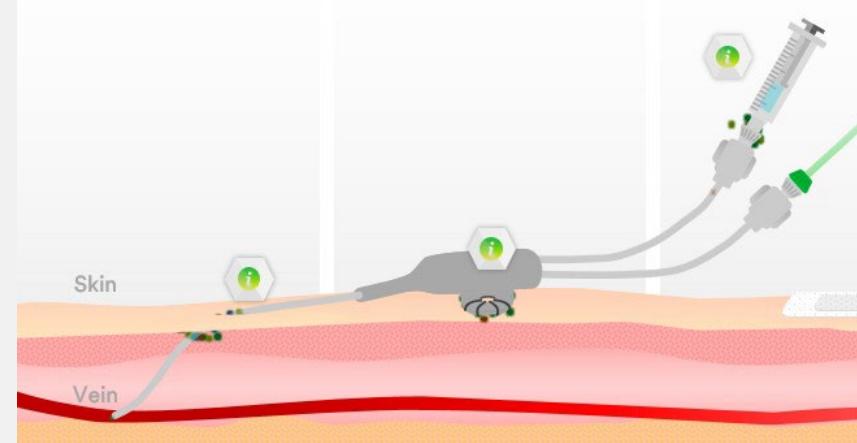
Sources of CR-BSI



Source of CRBSIs

Microbes that cause CRBSIs have multiple access points that could lead to infection:

Extraluminal contamination results when bacteria originating on the surface of the skin diffuses along the outside of the catheter



Intraluminal contamination results when bacteria diffuses through the catheter

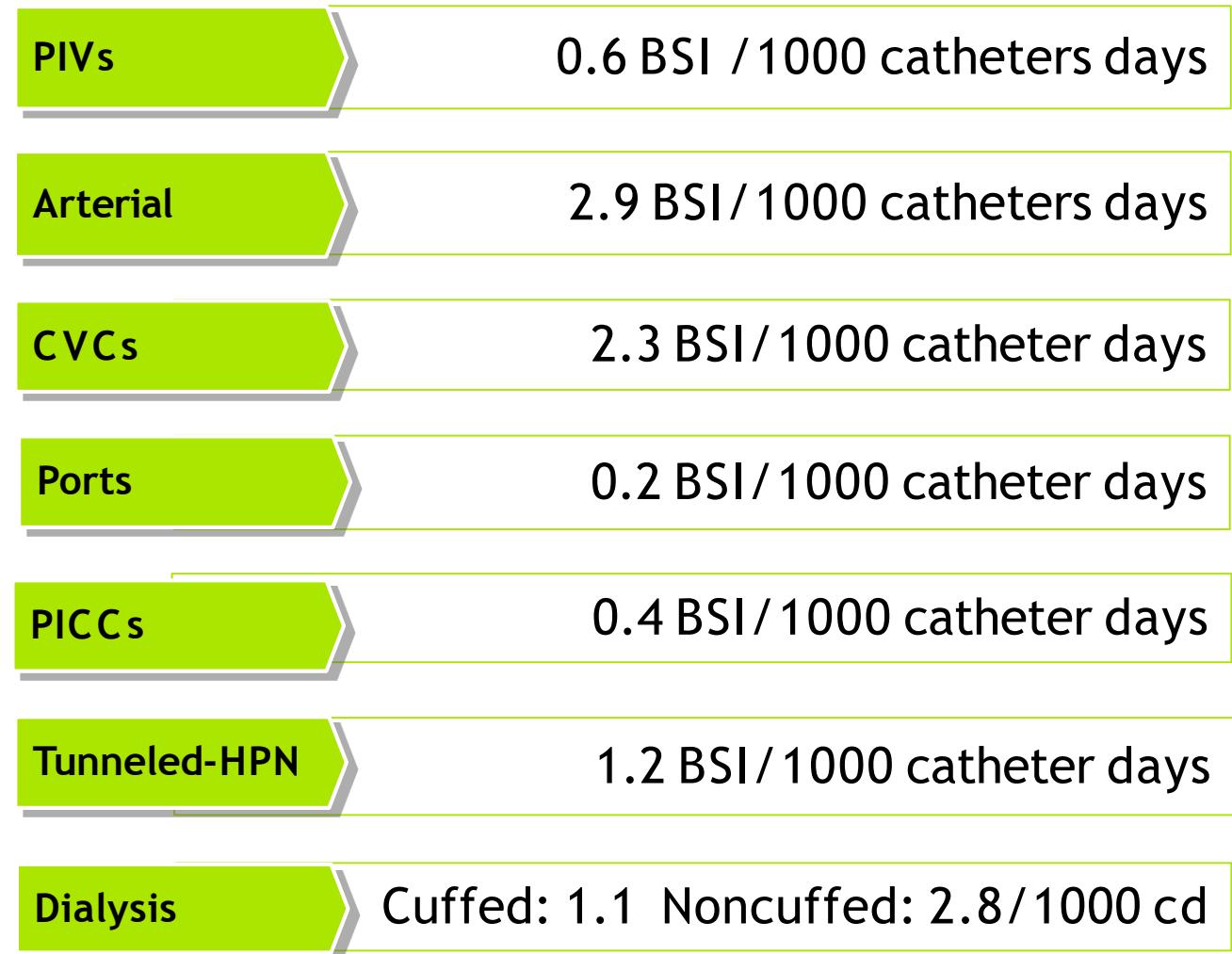
Intravascular (IV) devices mean BSI rates^{3,27}

Short Term (<10-14 days)

- Peripheral IV catheters
- Peripheral arterial catheters
- Central venous catheters (CVC)
 - Non cuffed
 - Not tunneled

Long Term (>10-14 days)

- Subcutaneous central venous ports
- Peripherally Inserted Central Venous Catheter (PICC)
- Central venous catheters
 - Tunneled
 - Cuffed



ALL vascular access devices = BSI risk

Central venous catheters (CVC):
Internal jugular,
subclavian,
femoral



Peripherally
inserted central
catheter (PICC)

Arterial line
catheter (ART)

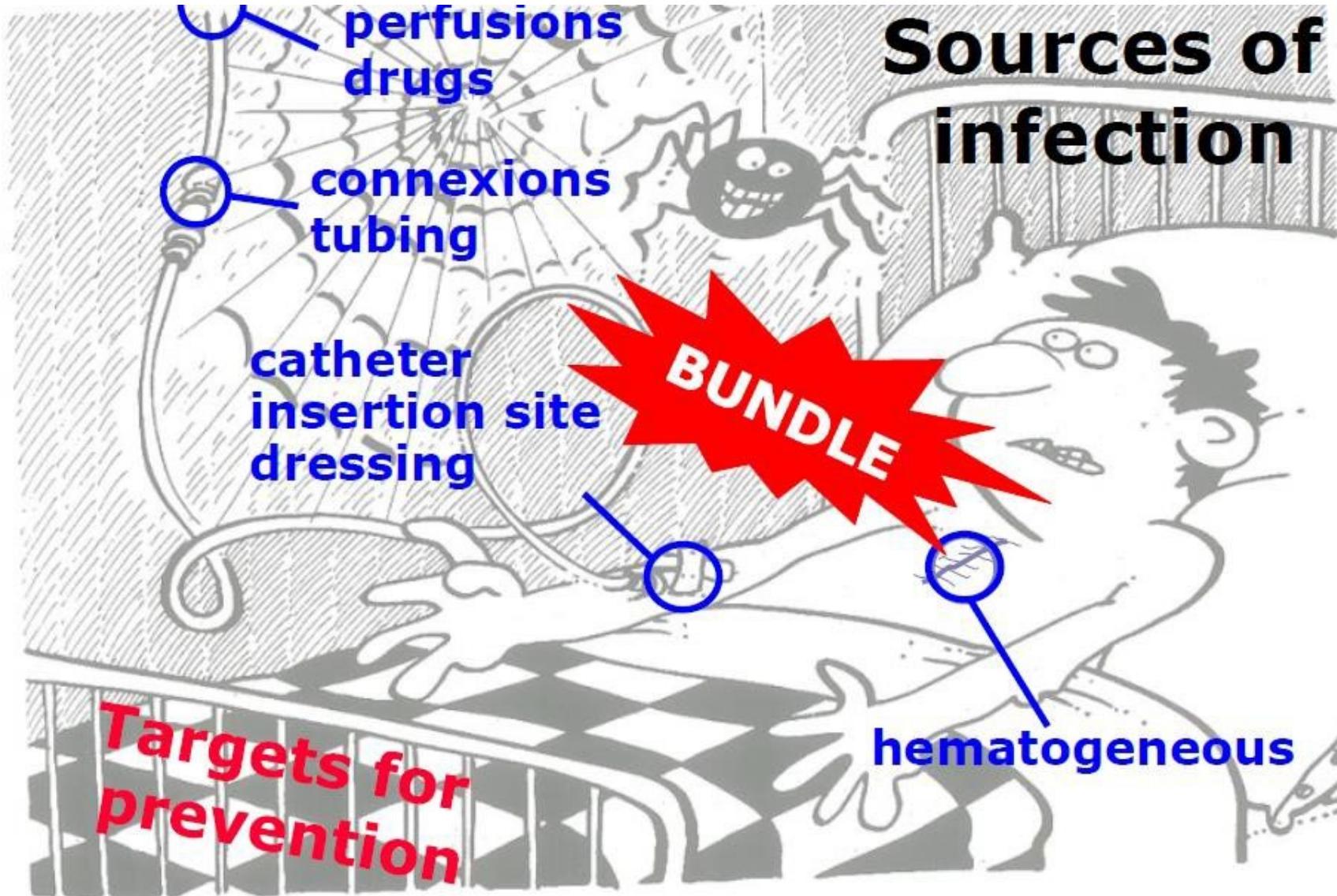
Peripherally
inserted catheter
(PIV)

The majority of CR-BSIs emanate from either the insertion site or the hub⁷⁻¹⁰

Organisms on the skin gain access to the bloodstream via migration along the external surface of the catheter or catheter hub; both important routes of catheter-related bloodstream infections⁸⁻¹²



An estimated 65-70% of CLABSI^s
are preventable¹⁶



Ensure adherence to proper technique through use of and completion of a **standardized checklist** completed by an educated health care clinician and **empower the clinician to stop the procedure for any breaches in aseptic technique**

checklist should be done by someone other than the CVAD inserter



The use of bundles

Evidence-based recommendations and performance improvement initiatives or strategies are bundled together to improve compliance³

Central Line Insertion Bundles^{3, 26-28}

- ✓ Education - Vascular Access Team
- ✓ Hand Hygiene
- ✓ Maximal sterile barrier precautions (Mask, cap, sterile gown, large sterile drape and sterile gloves)
- ✓ Avoid the femoral vein for CVC placement



The use of bundles

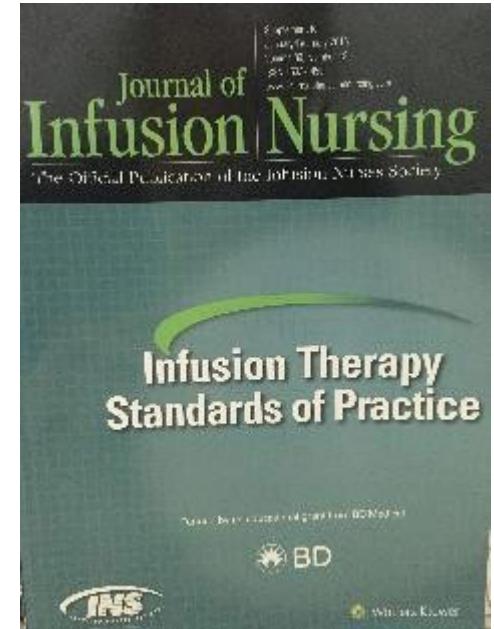
Evidence-based recommendations and performance improvement initiatives or strategies are bundled together to improve compliance³

Central Line Insertion Bundles^{3, 26-28}

- ✓ Minimize the number of lumens being used
- ✓ Clip the hair rather than shaving
- ✓ Skin antisepsis using >0.5% chlorhexidine in alcohol solution
- ✓ Use a CHG impregnated dressing



Education



The infusion team is structured to meet **patient** and organizational needs for **safe, effective, and high-quality** infusion therapy

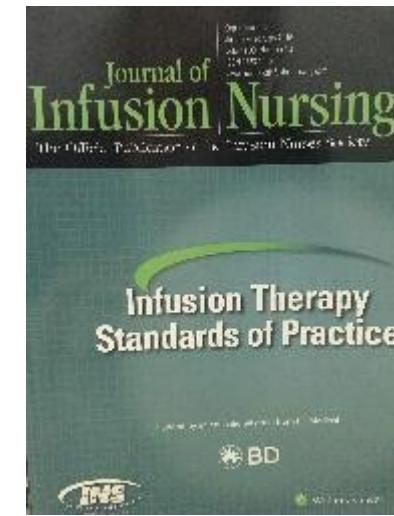
(Chlorhexidine Gluconate 1% Solution and Ethyl Alcohol 61% w/w) Surgical and Personnel Hand Antiseptic with Moisturizers

FDA approved waterless, brushless, Surgical Hand Antiseptic

- Provides rapid bacterial kill
- Providing proven persistent antimicrobial protection for up to 6 hours.
- Broad-spectrum against MRSA,MRSE & VRE
- Helps maintain skin integrity: emollient-rich lotion base
- Maintain the skin's natural barrier function & prevents cracking of skin.

Hair Removal

Remove excess hair at the insertion site to facilitate application of VAD dressings;
disposable-head surgical clippers;
do not shave as this may increase the risk of infection



Maximum Sterility Precautions

Maximal barrier sterile precautions



Maximal barrier sterile precautions



Lausanne, 2011

Prepare the insertion site

Centers for Disease Control (CDC)

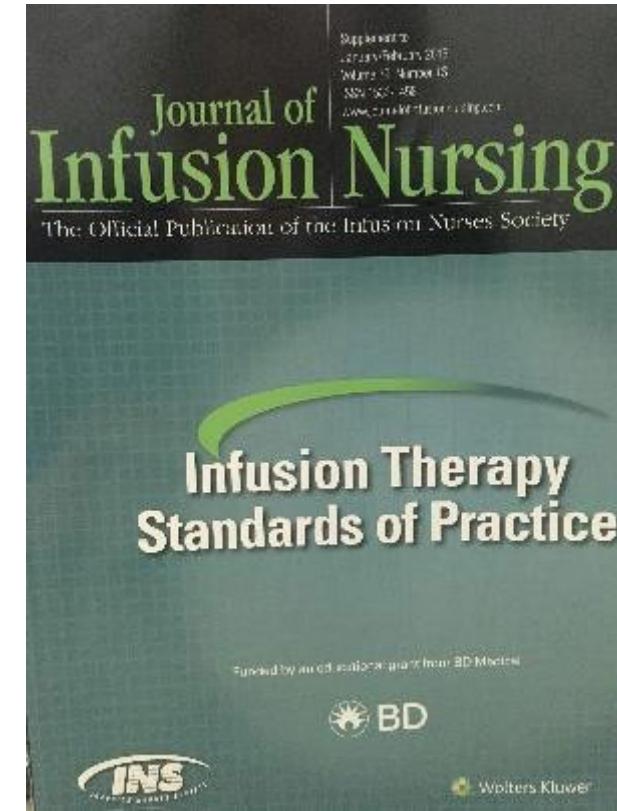
Guideline for the Prevention of Intravascular
Catheter-Related Infections, 20118



- “Prepare clean skin with a >0.5% chlorhexidine preparation with alcohol before central venous and peripheral arterial catheter insertion & during dressing changes.” **Category 1A,** pg. S4, S11
- “Ensure catheter site care is compatible with catheter material.” **Category 1B,** pg. S5, S12

Infusion Nurses Society (INS), 2016 Standards of Practice

- For short peripheral, midline, arterial and central venous access device **insertion and maintenance**, “perform skin antisepsis using the preferred skin antiseptic agent **of > 0.5% chlorhexidine** in alcohol solution.” Standard 33 Pg. S65, S66 Standard 44, pg. S82



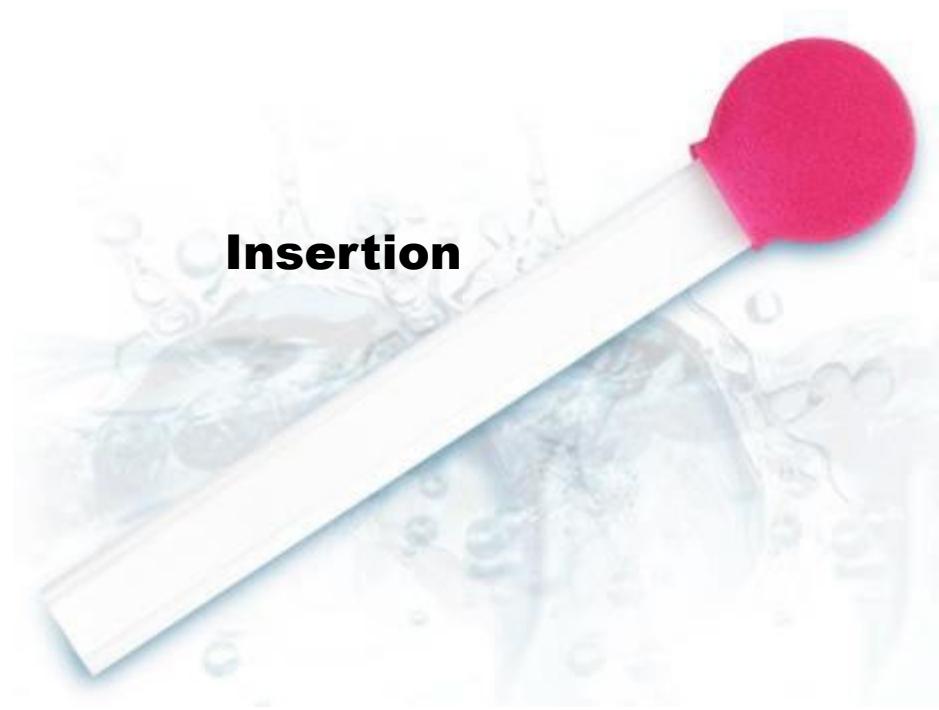
Skin Antisepsis

Antiseptic Solutions with 2% CHG and 70% IPA



- **Antiseptic Solutions with 2% CHG and 70% IPA**
 - ✓ Provide fast initial kill with residual activity for up to **72 hours**
 - ✓ Peel-apart packaging allows for **sterile protocol** to be respected



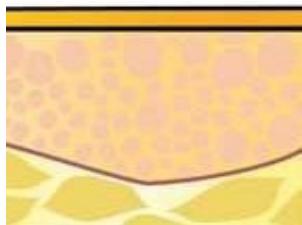


Large Swab tinted
(2% CHG/70% IPA)
Product Volume: 5.2 mL
Treatment Area: 20 cm x 20 cm



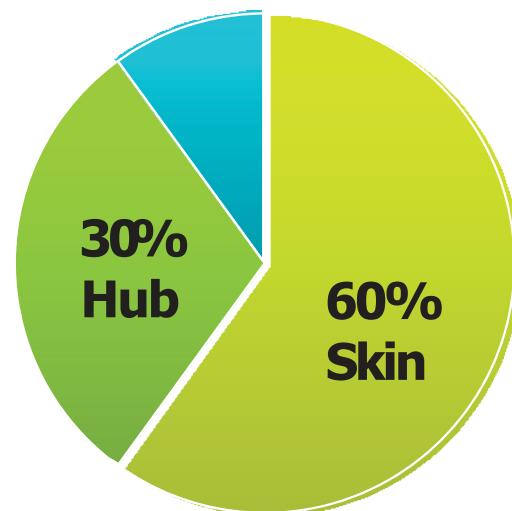
Small Swab clear
(2% CHG/70% IPA)
Product Volume: 1.6 mL
Treatment Area: 10 cm x 11 cm

60% of all CRBSI's results from the patient's own skin flora

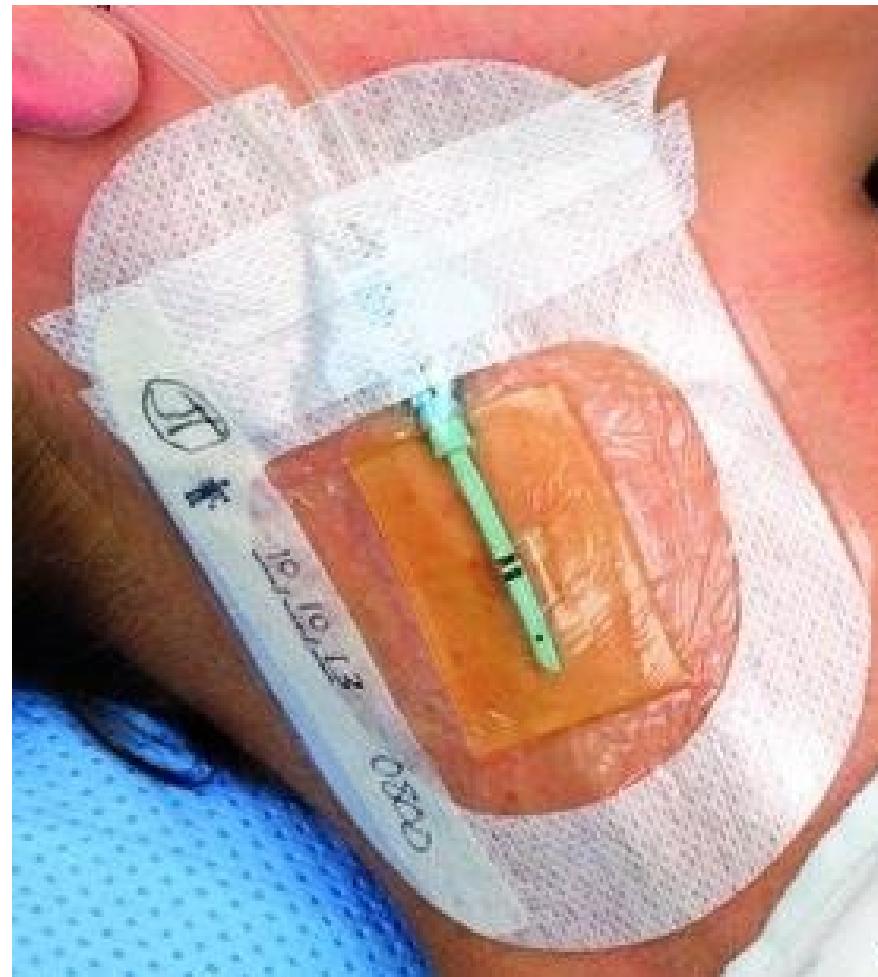


SKIN

What about the
regrowth of
microflora ??



Antimicrobial Protection - Vascular Access Solutions



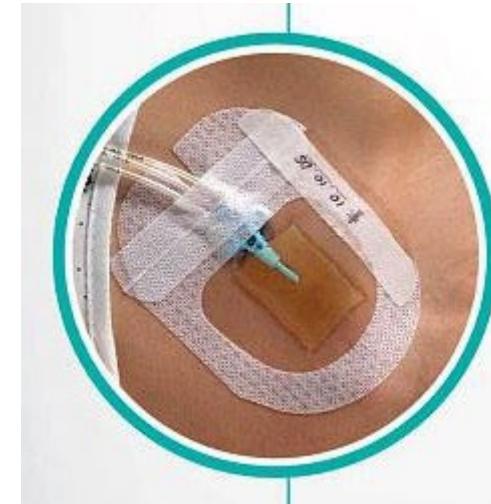
Proper dressing selection and change



2017 Update

2017 Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections

Chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing catheter-related bloodstream infection (CRBSI) or catheter-associated blood stream infection (CABSI) are recommended to protect the insertion site of short-term, non-tunneled central venous catheters. (Category IA)⁸⁻¹²



Checklist for Prevention of CLABSI

- Supplemental strategies to consider
 - 2% Chlorhexidine bathing
 - Antimicrobial / Antiseptic – impregnated catheters
 - **Chlorhexidine-impregnated dressings**

Checklist for Prevention of Central Line Associated Blood Stream Infections

Based on 2011 CDC guideline for prevention of intravascular catheter-associated bloodstream infections:
<http://www.cdc.gov/hicpac/pdf/guidelines/bi-guidelines-2011.pdf>

For Clinicians:

Promptly remove unnecessary central lines

- Perform daily audits to assess whether each central line is still needed

Follow proper insertion practices

- Perform hand hygiene before insertion
- Adhere to aseptic technique
- Use maximal sterile barrier precautions (i.e., mask, cap, gown, sterile gloves, and sterile full-body drape)
- Perform skin antisepsis with >0.5% chlorhexidine with alcohol
- Choose the best site to minimize infections and mechanical complications
 - o Avoid femoral site in adult patients
- Cover the site with sterile gauze or sterile, transparent, semipermeable dressings

Handle and maintain central lines appropriately

- Comply with hand hygiene requirements
- Scrub the access port or hub immediately prior to each use with an appropriate antiseptic (e.g., chlorhexidine, povidone iodine, an iodophor, or 70% alcohol)
- Access catheters only with sterile devices
- Replace dressings that are wet, soiled, or dislodged
- Perform dressing changes under aseptic technique using clean or sterile gloves

For Facilities:

- Empower staff to stop non-emergent insertion if proper procedures are not followed
- "Bundle" supplies (e.g., in a kit) to ensure items are readily available for use
- Provide the checklist above to clinicians, to ensure all insertion practices are followed
- Ensure efficient access to hand hygiene
- Monitor and provide prompt feedback for adherence to hand hygiene
<http://www.cdc.gov/handhygiene/measurement.html>
- Provide recurring education sessions on central line insertion, handling and maintenance

Supplemental strategies for consideration:

- 2% Chlorhexidine bathing
- Antimicrobial/Antiseptic-impregnated catheters
- Chlorhexidine-impregnated dressings

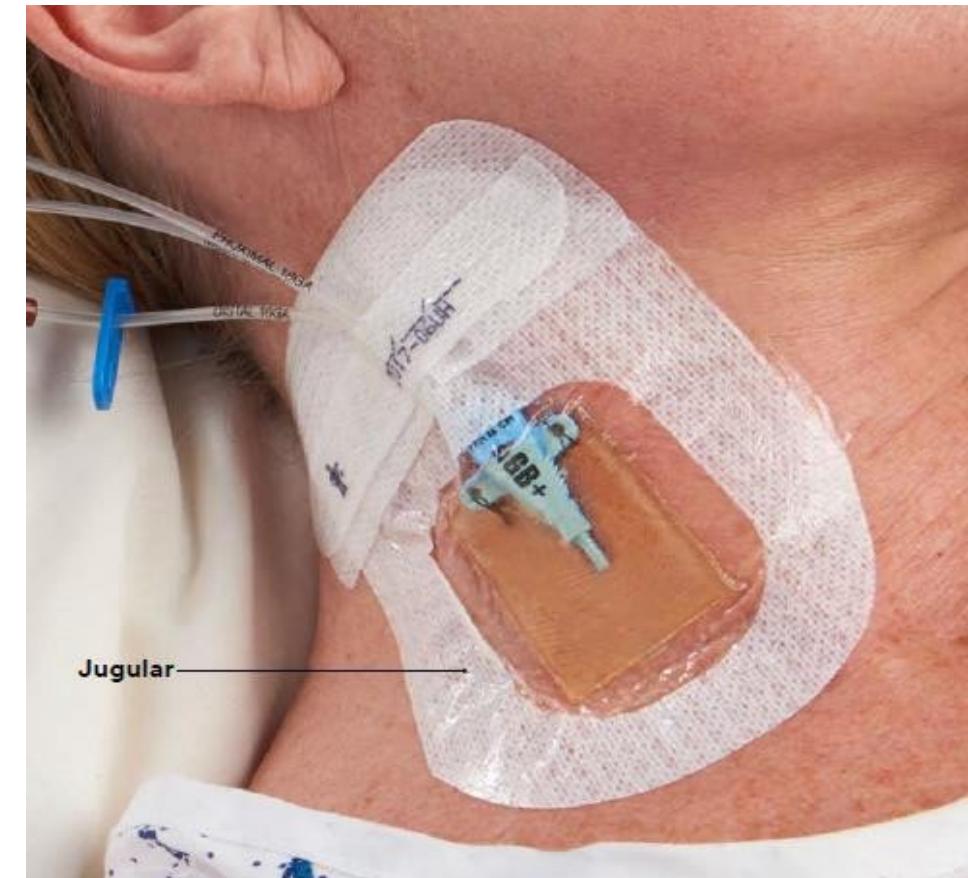
Proper dressing selection and change

INS 2016 Infusion Therapy Standards of Practice

Standard 41. VASCULAR ACCESS DEVICE (VAD) ASSESSMENT, CARE, AND DRESSING CHANGES, Page S81

C. Assess the VAD catheter-skin junction site and surrounding area for redness, tenderness, swelling, and drainage by visual inspection and palpation through the intact dressing (CVADs) assess at least daily.

J. Use chlorhexidine-impregnated dressings over CVADs to reduce infection risk ... Even when organizations show a low baseline central line associated bloodstream infection (CLABSI) rate.



SHEA/ IDSA Practice Recommendation Strategies to Prevent Central Line-Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update

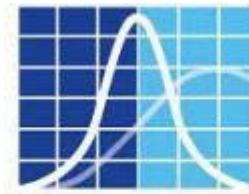
Jonas Marschall, MD; Leonard A. Mermel, DO, ScM; Mohamad Fakih, MD, MPH; Lynn Hadaway, MEd, RN, BC, CRNI; Alexander Kallen, MD, MPH; Naomi P. O'Grady, MD; Ann Marie Pettis, RN, BSN, CIC; Mark E. Rupp, MD; Thomas Sandora, MD, MPH; Lisa L. Maragakis, MD, MPH; Deborah S. Yokoe, MD, MPH
Source: Infection Control and Hospital Epidemiology, Vol. 35, No. 7 (July 2014), pp. 753-771

- 2. Use chlorhexidine-containing dressings
for CVCs in patients over 2 months of age
(quality of evidence: I).**

Proper dressing selection and change



CENTERS FOR DISEASE
CONTROL AND PREVENTION



SHEA
The Society for Healthcare
Epidemiology of America



IDSA
Infectious Diseases Society of America



*National Institute for
Health and Clinical Excellence*



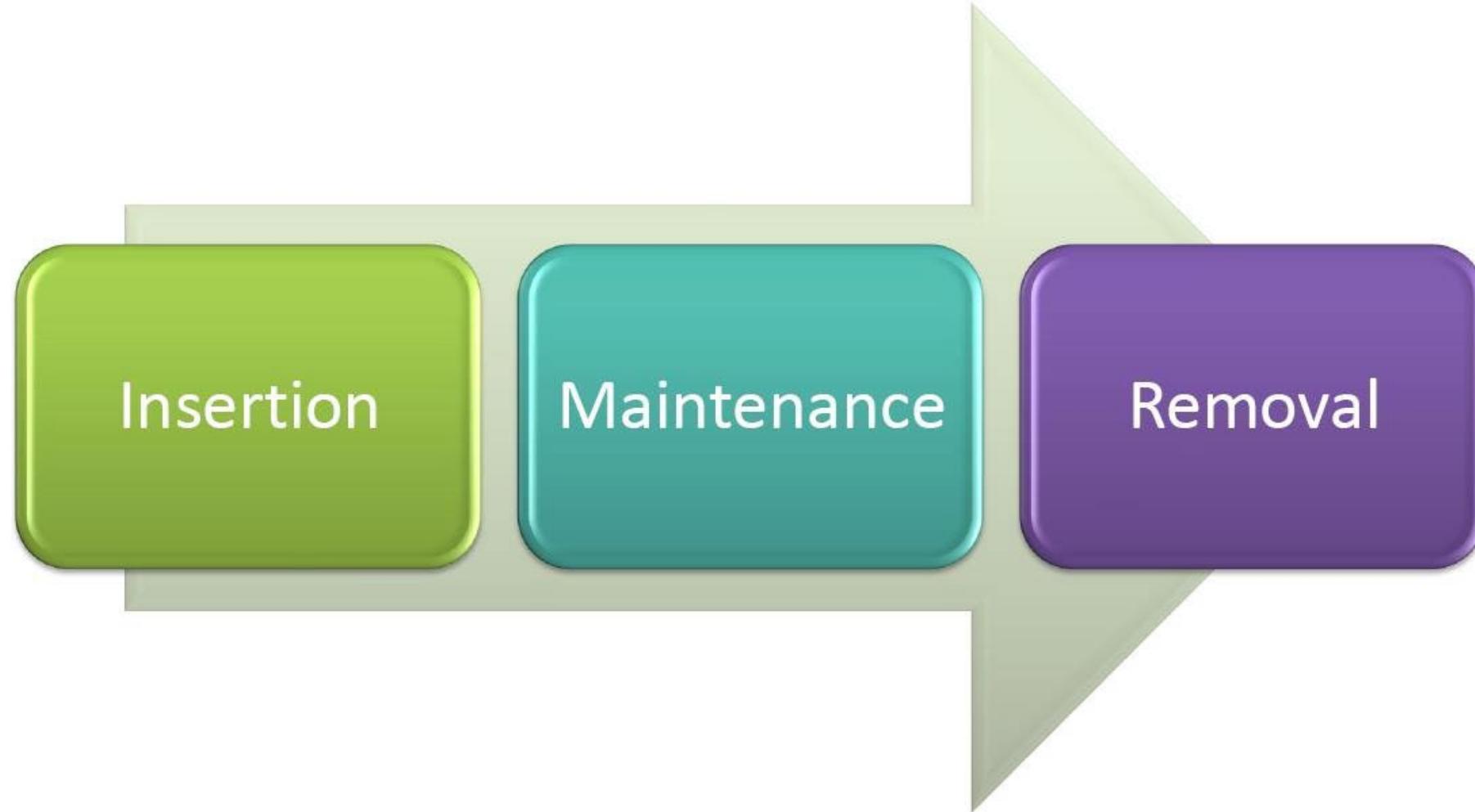
Association for Professionals in
Infection Control and Epidemiology

Use a standardized supply cart or kit that contains all necessary components for the insertion of a CVAD.



Use ultrasound technology when inserting CVADs to increase success rates and decrease insertion related complications

CLABSI prevention - why „Insertion bundle“ is not enough?



Maintenance is for the life of the line

Insertion- the procedure represents only one aspect of the risk for CLABSI

Maintenance- the risk of CLABSI extends to all aspects of nursing care and maintenance during the CVC dwell time



Maintenance includes many interventions

After catheter insertion, maintenance bundles have been proposed to ensure optimal catheter care²⁸

Maintenance Bundles^{3,26-28}

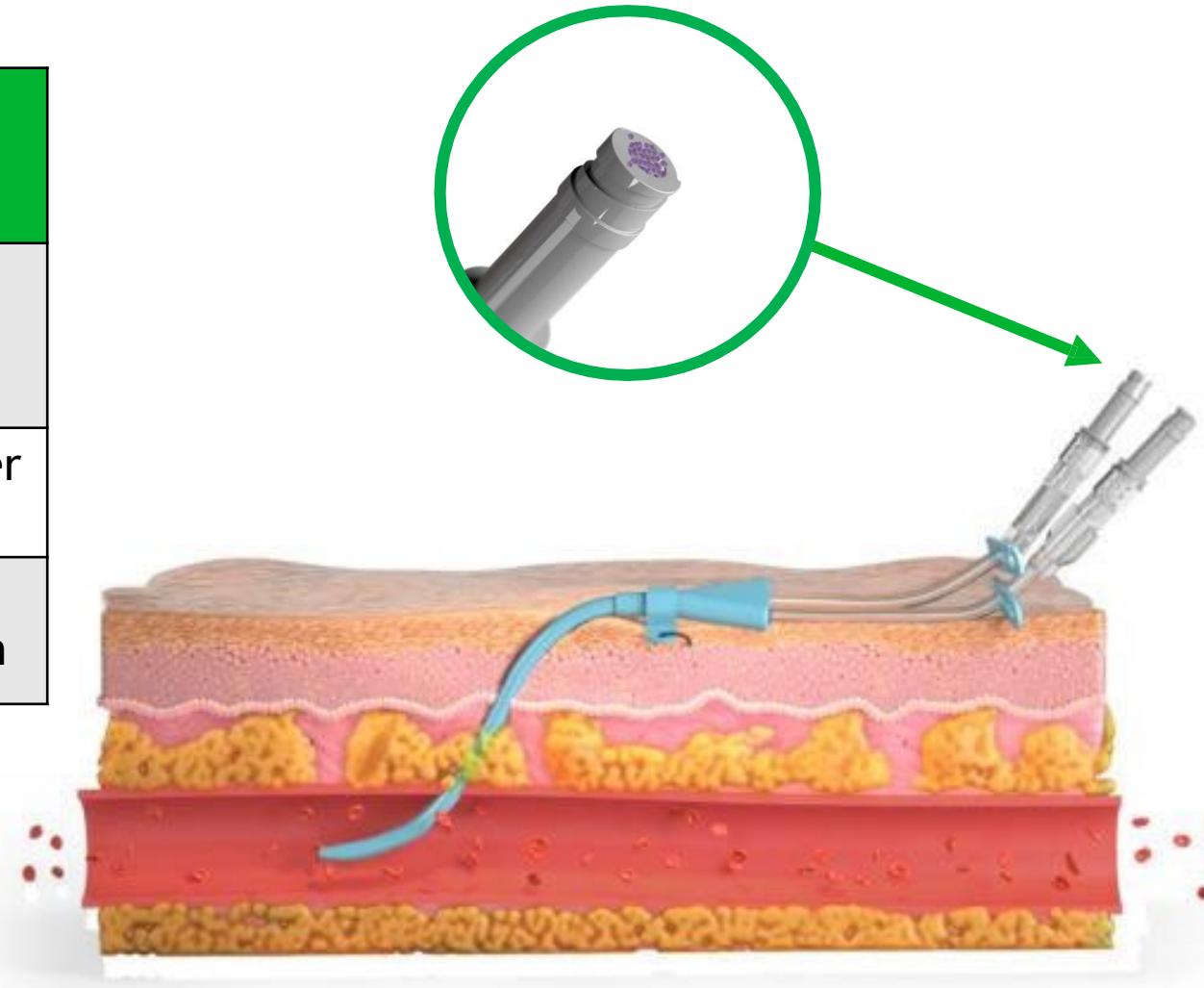
- ✓ Assess need for catheter daily
- ✓ Perform hand hygiene before manipulation of IV system
- ✓ Dressing change recommendations and guidelines based on dressing type
- ✓ IV tubing administration set, secondary set and add-on device change guidelines based on medication or product infused
- ✓ Disinfect IV access ports with appropriate disinfectant for a period of time



The majority of CR-BSIs emanate from either the insertion site or **the hub**⁷⁻¹⁰

Intraluminal Route of Contamination

1. Contaminated through contact with unsterile environmental surfaces
2. Colonization from another site
3. Administration of contaminated medication



Whereas the **intraluminal route** (primarily the hub) predominates after a more extended dwell time³³⁻³⁴

How do they look now?

Mostly unprotected...



What's the problem with Scrub the Hub?

Contamination is often not visible



It looks clean

But is it?

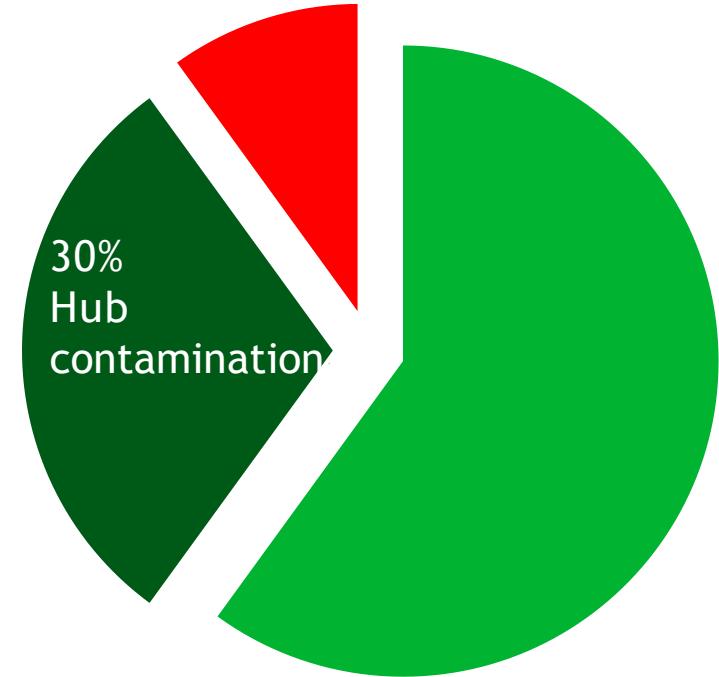
**33-45% of hubs are contaminated
in normal patient use**



This bacteria was cultured from an unprotected IV port
– Wendy Kaler, MT, MPH, CIC

Hub Contamination Infections

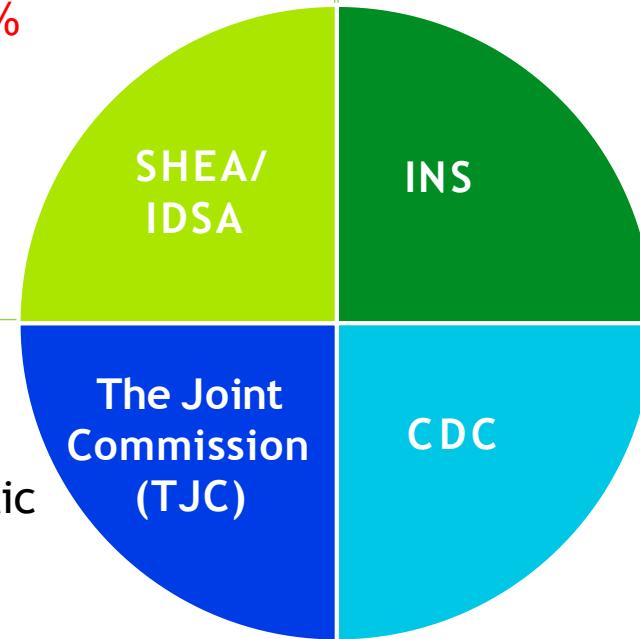
- Seen at all access ports and line connections with all vascular access devices
- Organisms from the needleless membrane are introduced into the intraluminal segment of the catheter
- Organisms adhere to the Needleless connector membrane - “Biofilm”



Best Practice Guidelines: Active Disinfection (Scrub the Hub)

Strategies to Prevent Central Line-Associated Bloodstream infections in Acute Care Hospitals (2014)

- Apply mechanical friction with an **alcoholic chlorhexidine preparation, 70% alcohol, or povidone iodine**
- Before accessing any IV port apply mechanical friction **for no less than 5 seconds** to reduce contamination
- To prevent potential contaminants, disinfect with friction using an antiseptic swab (**Chlorhexidine, 70% IPA, ethyl/ethanol alcohol, iodophors**)



Infusion Therapy Standards of Practice (2016)

- Perform mechanical scrub for disinfection of NC prior to each access and **allow to dry (70% IPA, iodophors, or >0.5% chlorhexidine in alcohol solution) (II)**
- **Scrub times range from 5-60 seconds**
- **Scrub access port (chlorhexidine, povidone iodine, an iodophor or 70% alcohol) Category IA**
- The time spent applying disinfectant may be important

Preventing Central-Line Associated Bloodstream Infections: A Global Challenge, A Global Perspective (2012)

Guidelines for the Prevention of Intravascular Catheter-Related Infections (2011)

Lack of standardization

No Standard Disinfectant

70% IPA, iodophors, or >0.5% chlorhexidine in alcohol solution^{3,27-28,35}

No Standard Time

Specific recommended times for scrubbing the hub vary from 5-60 seconds or are nonspecific^{3,27-28,35}

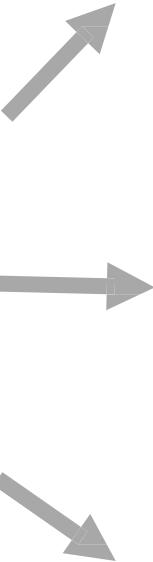
Mixed Efficacy Results

Studies have shown mixed results of effectiveness³⁷⁻³⁹ and ineffectiveness⁴⁰⁻⁴² at disinfection times of 5 to 60 seconds



Lack of standardized techniques for scrubbing the hub may increase the risk of CRBSIs or CLABSI^s⁴³⁻⁴⁴

Techniques can vary



Variation in techniques and connector design

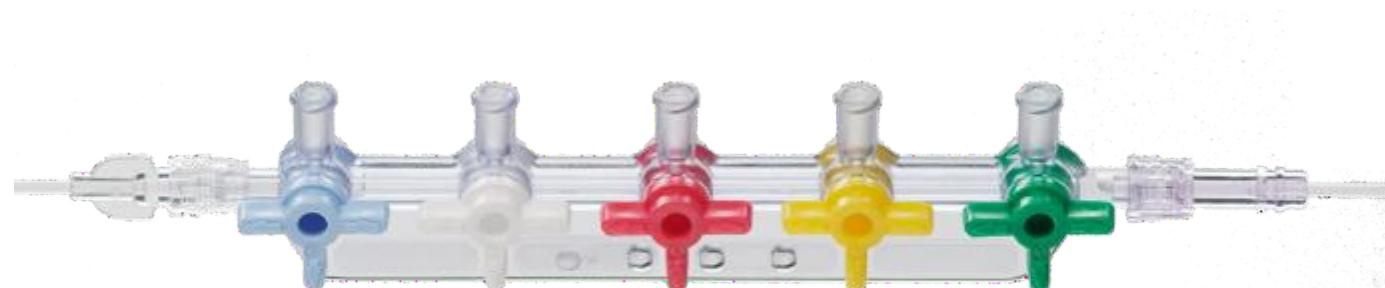
- Consideration must be given to human factors related to catheter management⁴³
- Scrub the hub technique varies by individual
- Needleless connector designs vary

One study reported
31% of nurses did not disinfect
needleless connectors before accessing them⁵

Stopcocks- A Unique Challenge

Challenges:

- Frequent manipulation and access increases contamination risk
 - 1 in 5 stopcocks become contaminated in clinical practice⁴⁷⁻⁵⁰
- Dead spaces and use for blood sampling or medication administration may increase proliferation of bacteria into the bloodstream.
- Caps are often reused



Time pressure



Do you really scrub for 15 seconds and let it dry?

What is passive disinfection?

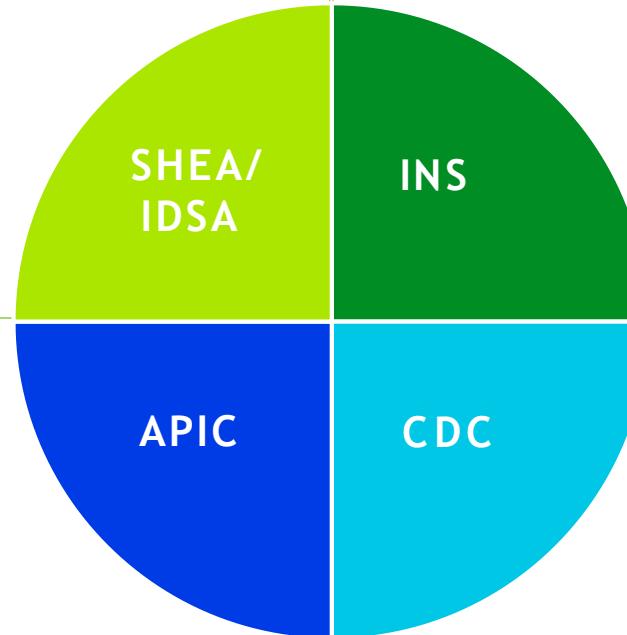


Alcohol in a cap!
70% IPA

Best Practice Guidelines: Disinfecting Caps

Strategies to Prevent Central Line-Associated Bloodstream infections in Acute Care Hospitals (2014)²⁸

- Use an antiseptic-containing hub/**connector cap**/port protector to cover connectors *Evidence I*
- Recent focus on use of **disinfection caps** on access ports to maintain a level of disinfection and minimize contamination opportunities
- **Ensure disinfecting caps are used consistently**



Infusion Therapy Standards of Practice (2016)²⁷

- Use of passive **disinfection caps** containing disinfection agents (IPA) have been shown to reduce intraluminal contamination and reduce CLABSI rates
- **Antiseptic-barrier caps for needleless connectors** have been studied (laboratory) and appear to be effective at preventing entry of microorganisms (needs clinical trial)

Guide to Preventing Central-Line Associated Bloodstream Infections (2015)³⁵

Guidelines for the Prevention of Intravascular Catheter-Related Infections (2011)³

Disinfecting Port Protector efficacy³⁴

- Disinfects in 1 minute (*in vitro*)
- > 99.99% (> 4-log) reduction after 1 minute against 6 microorganisms commonly associated with CLABSI³⁵⁻³⁶



Staphylococcus aureus



Staphylococcus epidermidis



Escherichia coli



Pseudomonas aeruginosa



Candida glabrata



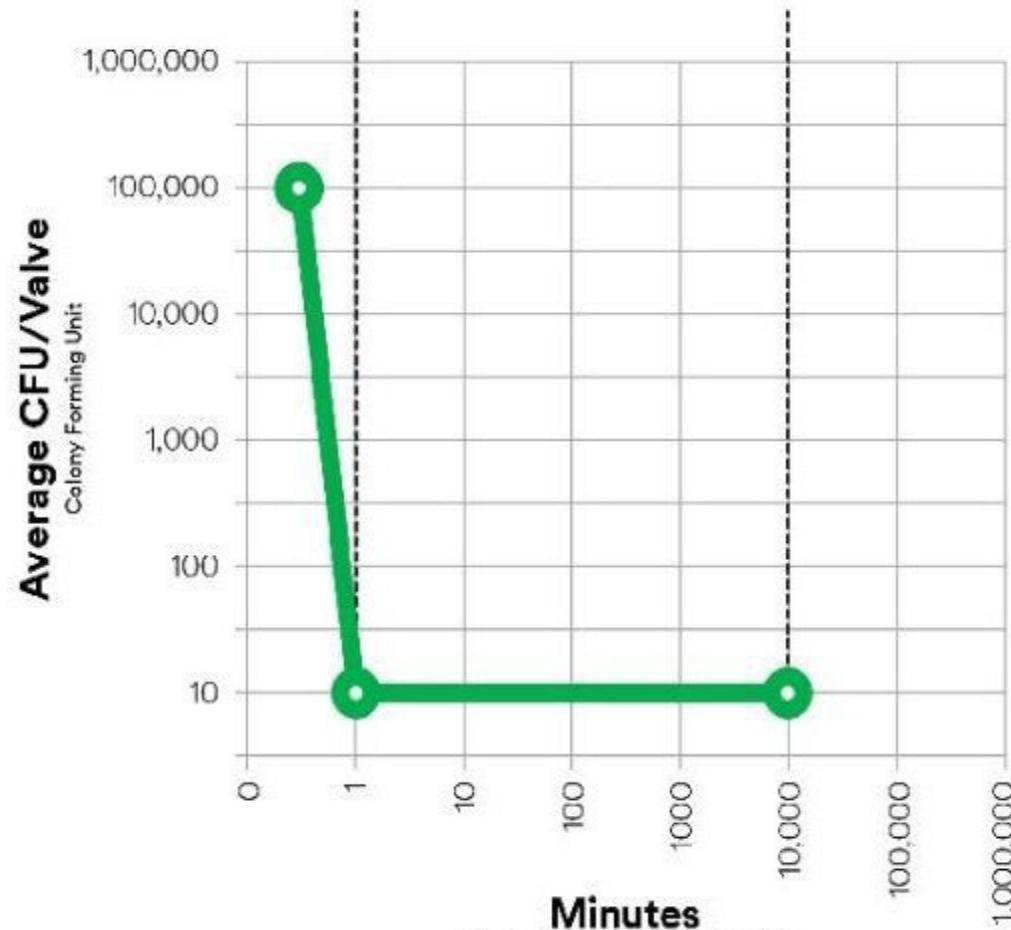
Candida albicans

- Protects ports from contamination for up to 7 days if not removed



Disinfects in
1 minute

Protects ports for
up to 7 days



*Limit of Detection Test = 2 CFU

Summary of Clinical Evidence



Reduce the risk of CLABSI

- CLABSI reduction ranging from 25% to 87%⁵⁵⁻⁶¹
- 92% fewer contaminated blood cultures⁵⁹
- Estimated fewer deaths associated with CLABSI⁵⁶⁻⁵⁹
- 68 fewer patient hospital days⁵⁸
- Estimated 13 beds per year were freed up⁵⁶



Reduce Cost



Disinfecting Cap Advantages

Contains
Isopropyl
Alcohol (IPA)

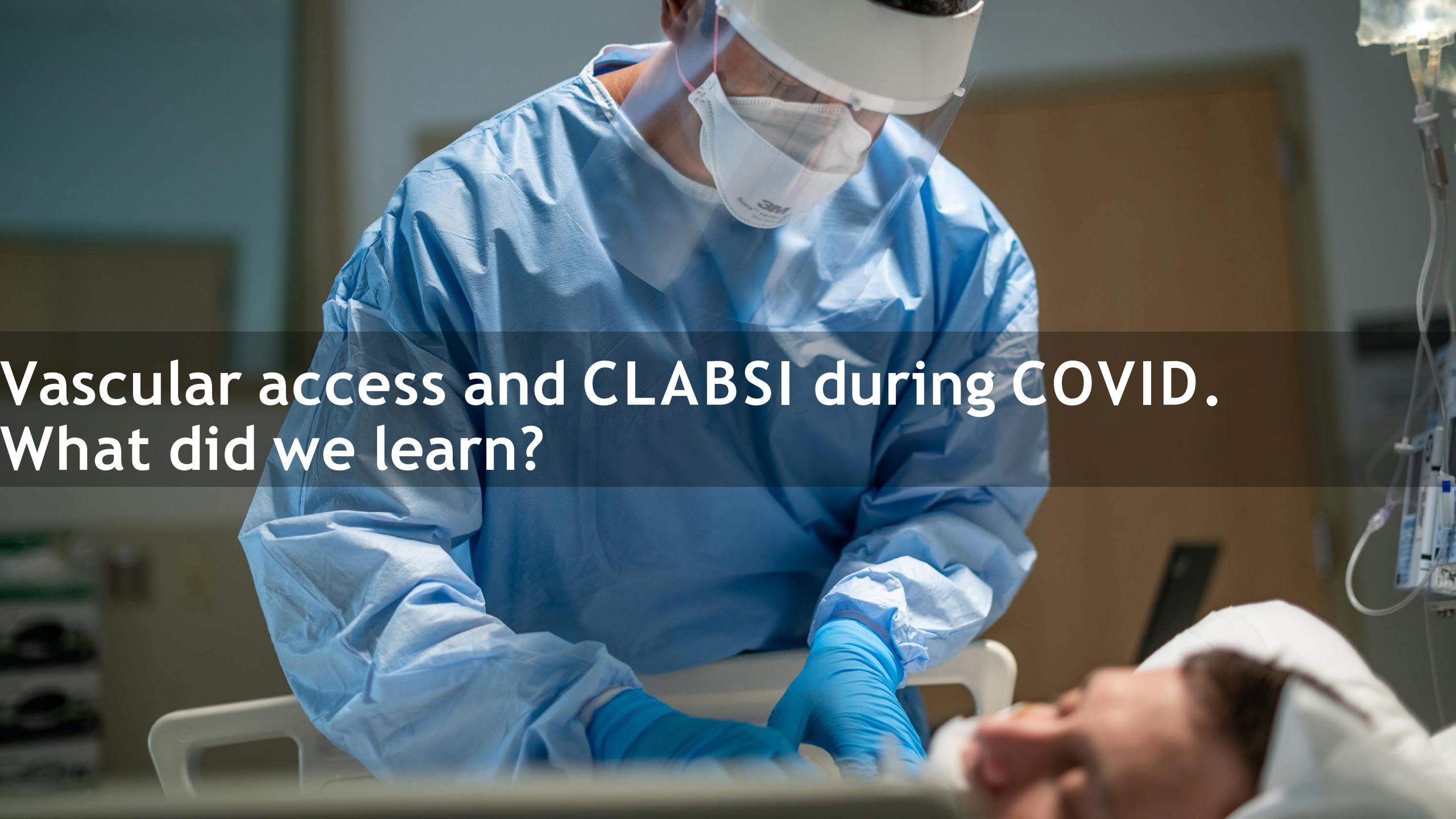
Protects from
Contamination

Standardizes
Process

Saves Time

Increases
Auditing
Compliance



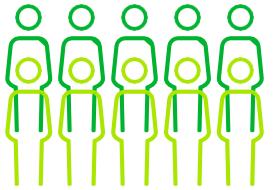
A healthcare worker in blue scrubs and a face mask is performing vascular access on a patient in a hospital bed. The worker is wearing a white cap and a 3M surgical mask. The patient's arm is extended, and the worker is focused on the procedure. In the background, an IV drip stand is visible.

Vascular access and CLABSI during COVID.
What did we learn?

The challenge of COVID-19.

COVID-19 presents tremendous challenges for healthcare.

Increased patient loads and limited critical care capacity.



Shortages of PPE for frontline workers and patients.

Unexpected ways patients are presenting.



Delay of routine treatments and elective procedures.

Reduction of financial resources.

Staff shortages and less experienced support staff to help ICU.

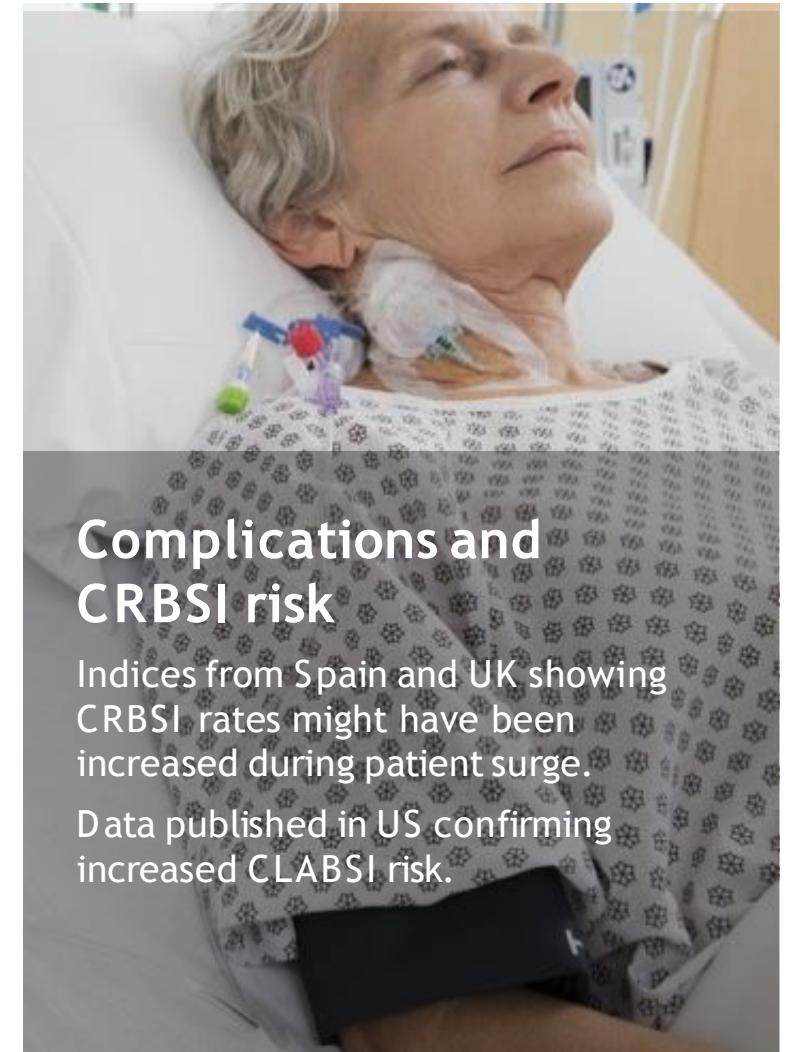
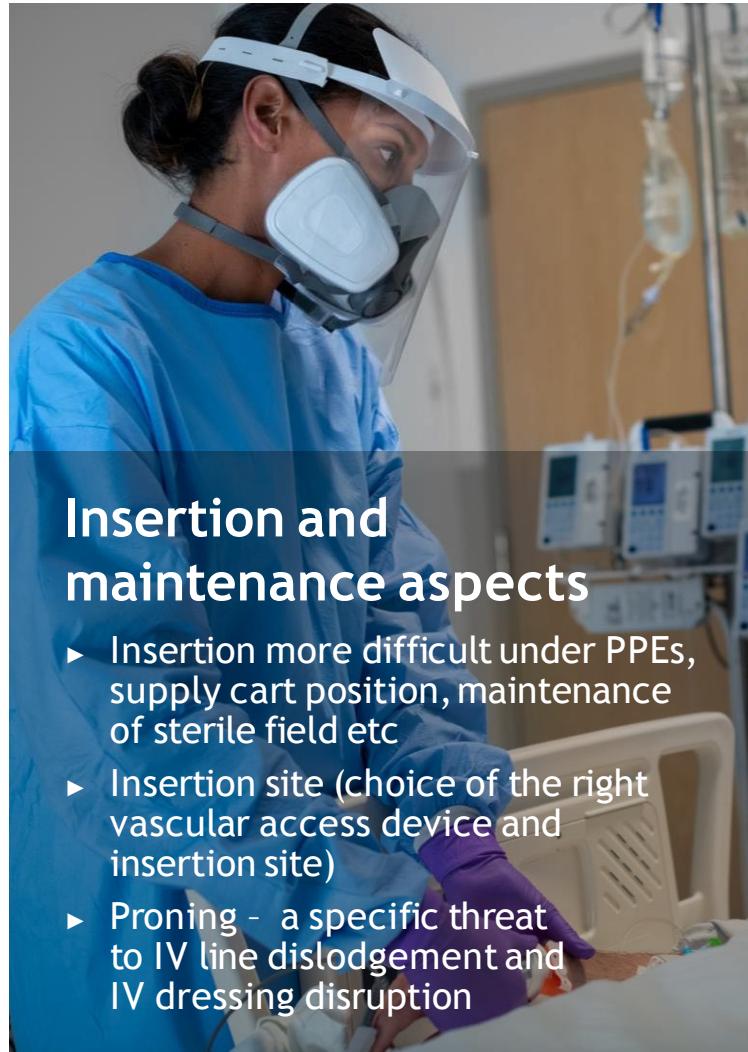
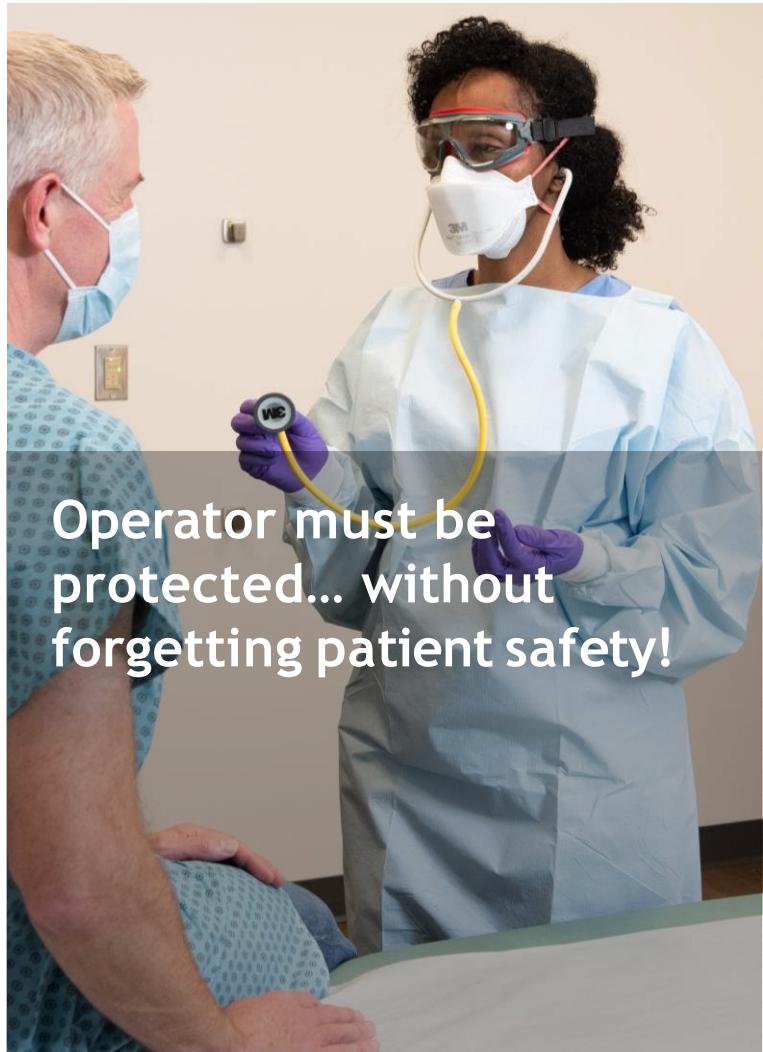
During these times, healthcare workers are being asked to do more, often, with less.

How is this affecting patient care?



<https://www.nytimes.com/2020/04/04/nyregion/coronavirus-hospital-brooklyn.html>

Vascular access in Covid 19 patients.



WoCoVA 6th World Congress on Vascular Access

Covid-19 and Vascular Access

Experiences around the world

Take home messages summary

China 	Italy 	Spain 	Netherland 
PICC is recommended for ICU COVID patients	Vascular Access Team: trained personnel for catheter positioning and management	Vascular Access device choices: midlines for non-critically ill patients, and PICC & FICC for critically ill patients	Improve patient safety
Use transparent dressing with antibacterial barrier to prevent CRBSI	Main issue with vascular access: thrombosis, accidental removal/dislocation (prone position/CPAP devices) use subcutaneous anchored securement, PICC/Midline in ICU patients, preserve femoral access (ECMO)	Insertion technique selection: wireless US, artery puncture, tip position, suture less device, cyanoacrylate, chlorhexidine dressing, transparent membrane	Reduce the number of interventions and complication risk, cost, and burden for HCPs and patients
Online education and consultation for discharged patients with PICC			

Thank you

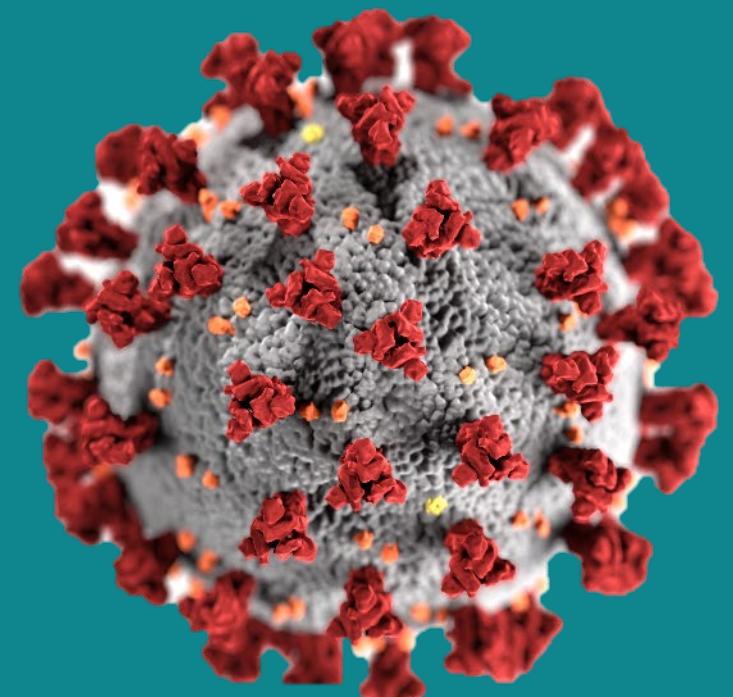
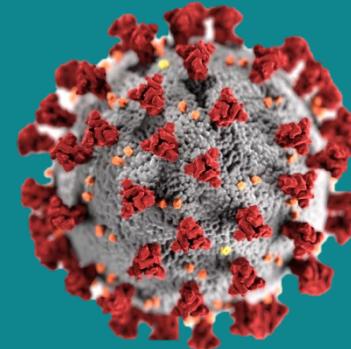
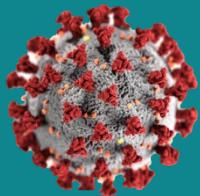


COVID-19 Management

PRESENTED BY: DR. MAGDA

COVID-19 WHAT IS IT?

- Virus
- Highly contagious
- Has already developed numerous variants throughout the world, which allow it to spread quicker than the original sars-cov-2 virus (Covid-19).
- Omicron is the latest variant of concern and research has indicated that it is more infectious, has a shorter incubation period (two to four days), and may be better at evading the immune response generated by both vaccines and natural immunities.
- There is no confirming data on the severity of symptoms, compared to previous circulating variants.

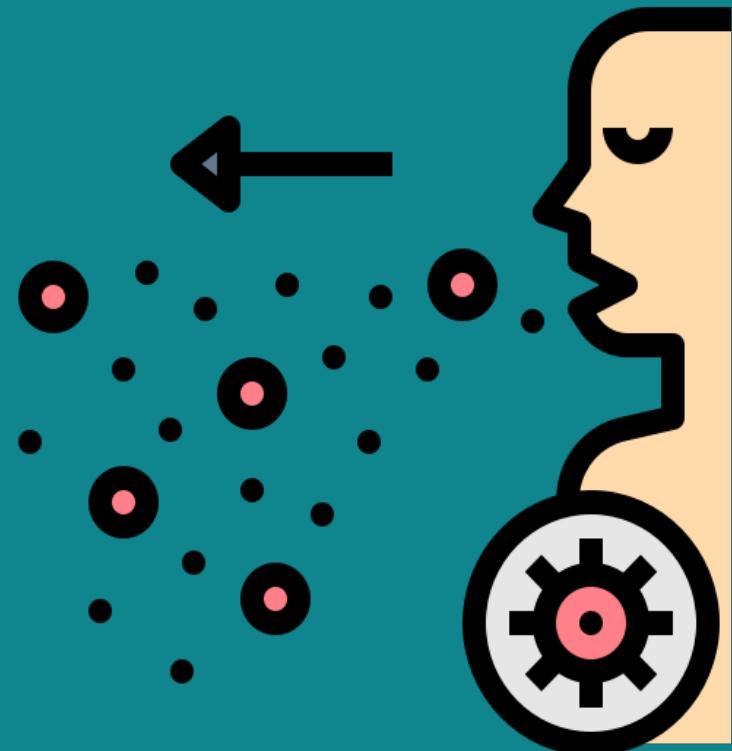


WHY IS THIS SO CONCERNING?

- Pandemic fatigue has developed, making it difficult for individuals to continue to comply with the various strategies to contain the virus.
- Numbers of individuals in isolation, anxiety, and mental health issues are arising for various reasons.
- With the variants spreading quicker;
 - It can put a strain on the healthcare resources (Covid-19 test sites, doctor's offices, hospitals, labs)
 - Existing health issues continue to compound, as surgeries are cancelled and people will continue to avoid obtaining healthcare for routine preventative measures
 - It can put a strain on community resources (ex: taxi services and ambulance services take longer for turn around due to disinfectant processes, increased costs)

HOW DOES IT SPREAD?

- Through respiratory droplets
- The virus can live as an aerosol in a closed area, up to 3 hours after an individual leaves the space.
- The virus is released in the air as an aerosol when an infected individual coughs or sneezes
- Close prolonged contact (defined as 15 minutes within a 24 timeframe), or breathing the same infected air for 15 minutes
- Touching an infected area and then touching your eyes, nose or mouth



VULNERABLE POPULATIONS THAT MAY PUT YOU AT INCREASED RISK FOR DEVELOPING SEVERE COVID-19

- older adults (increasing risk with each decade, especially over 60 years)
- people of any age with chronic medical conditions (for example, lung disease, heart disease, high blood pressure, diabetes, kidney disease, liver disease, stroke or dementia)
- people of any age who are immunocompromised, including those with an underlying medical condition (for example, cancer) or taking medications which lower the immune system (for example, chemotherapy)
- people living with obesity (BMI of 40 or higher)
- For a detailed list of those individuals that are more vulnerable please visit the following link: <https://www.canada.ca/content/dam/phac-aspc/documents/services/diseases-maladies/vulnerable-populations-covid-19/vulnerable-eng.pdf>

INDIVIDUALS MORE LIKELY TO BE EXPOSED TO COVID-19

- Their jobs or occupations require them to be in contact with large numbers of people, which increases their chances of being exposed to someone who has COVID-19
- They live in group settings where the COVID-19 virus may transmit more easily (for example, long-term care facilities, correctional facilities, shelters, or group residences)
- They face barriers that limit their ability to access or implement effective public health measures (for example, individuals with disabilities who encounter non-accessible information, services, facilities, and/or language barriers)

SETTINGS ASSOCIATED WITH INCREASED RISK

- Closed spaces
- Crowded spaces
- Close contact scenarios, where minimum 1 metres (3 ft) distancing cannot be maintained
- Close range conversations
- Settings where there may be singing, shouting, or heavy breathing

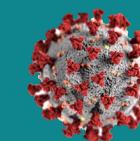
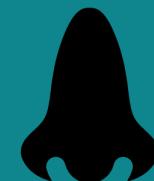
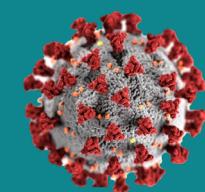
***Try and avoid spaces where these scenarios overlap, especially if masks are not being worn

Ex: closed spaces that are crowded with close-range conversations



WHAT HAPPENS WHEN YOU GET EXPOSED?

- The virus gets in your body through your eyes, nose, or mouth
- It attaches to the ACE2 receptors in the body, which is a protein that lines our organs (lungs, heart, blood vessels, kidneys, liver, GI tract)
- Once it attaches to these proteins, it causes inflammation
- This can overwhelm your immune system
- Under certain conditions (increased risk factors discussed later), there is an increased risk of experiencing severe symptoms of the COVID-19, or even death

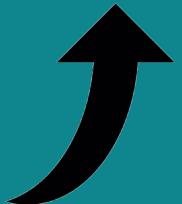


RISKS

- The overall risk of acquiring Covid-19 remains high
- The risk remains unique to the area and varies between and within communities



INCUBATION



- Once you are exposed to COVID-19, you can develop symptoms up to 14 days after exposure.
- Preliminary research indicates that Omicron is more infectious, has a shorter incubation period (two to four days), and may be better at evading the immune response generated by both vaccines and natural immunities.
- There is no confirming data on the severity of symptoms, compared to previous circulating variants.
- Symptoms can vary from person to person and within different age groups.
- Severity of symptoms can range from mild to severe.

INFECTION AND RECOVERY

- A person with COVID-19 is generally considered infectious
 - Beginning 48 before symptoms started, or if no symptoms, 48 hours before the positive test was taken
 - Ending 10 full days after the start of symptoms (or 10 full days from test date if no symptoms) AND feeling better (no fever and improving).
- You need to self-isolate while you are considered infectious to limit further spread.
- You are considered recovered when you are no longer infectious: typically, 10 days after symptoms have started (with first day of symptoms being considered Day zero), no fever, AND you are feeling better
- For the immediate three months (90 days) after you are considered recovered, COVID-19 testing is typically not recommended. If you develop symptoms in these 3 months, you must self-isolate until symptoms resolve.

RECOVERY TIMEFRAME

- Most people with COVID-19 recover or feel better within two weeks.
- Severe cases can take longer than 6 weeks and may or may not cause permanent damage to your organs.
- Long-haulers are considered individuals who have persistent symptoms for 4 weeks or longer that are continuous or arise weeks or months after initial recovery. For more information and support for long-haulers, visit the following site: <https://www.covidlonghaulcanada.com/>



TO DECREASE RISK OF EXPOSURE

- If you have symptoms, even if they are mild- stay home and get tested
- Wear a mask when you experience symptoms and are in close contact with others
 - Ex: accessing medical care
- Follow Public Health Directives
 - Physical distance, handwashing, wear a mask, adhere to gathering limits
 - For a detailed list go to <https://novascotia.ca/coronavirus/avoiding-infection/>

WHAT TO DO IF EXPERIENCING SYMPTOMS

- If in the past 48 hours you have had, or you are currently experiencing:



- COUGH (new or worsening)
OR TWO or more of the following symptoms:
 - Fever (chills, sweats)
 - Headache
 - Runny nose or nasal congestion
 - Sore throat
 - Shortness of breath or difficulty breathing



- Self-isolate immediately and complete a COVID self-assessment by visiting the following link: <https://covid-self-assessment.novascotia.ca/en>

PCR TESTING ELIGIBILITY

1. People who have symptoms, or have been identified as a close contact of a positive case,
AND
 - a) are considered at increased risk for severe disease
 - b) live in congregate settings, OR
 - c) are integral to keeping our health system running
2. Testing required for a medical procedure
3. Partially or unvaccinated travelers who need 2 negative PCR tests to stop isolating after at least 7 days

RAPID TESTING ELIGIBILITY

- All other symptomatic persons or identified as close contacts can [book an appointment](#) for a rapid test pick-up at a COVID-19 Testing Centre. Drop-in appointments are NOT available.
- If you have rapid test kits at home, it is important to note:
 - 2 negative tests, 48 hours apart = negative (unless you are not fully vaccinated and have ongoing symptoms, in which case you need a third negative test)
 - 1 positive = positive – no confirmation PCR test necessary.
- If you are using a rapid test and your result is positive, you do not need to do a follow up PCR test. You have COVID-19 and you need to isolate and notify your close contacts.

I'VE TESTED POSITIVE FOR COVID-19 WHAT DO I DO?

Immediate Actions:

- Self-isolate right away
- Ask your household contacts to self-isolate right away.
- Reach out to close contacts

***All household contacts will need to self-isolate until they receive a negative test result (collected at least 72 hours after the last exposure).

Specific details on how to proceed after receiving a positive diagnosis are listed in the following link, including how to determine your close contacts and the process of registering your diagnosis with Public Health: <https://www.nshealth.ca/testedpositiveforcovid>

If you require any further guidance or resources, reach out by email to Acadia's Occupational Health Nurse at Caroliina.landry@acadiau.ca

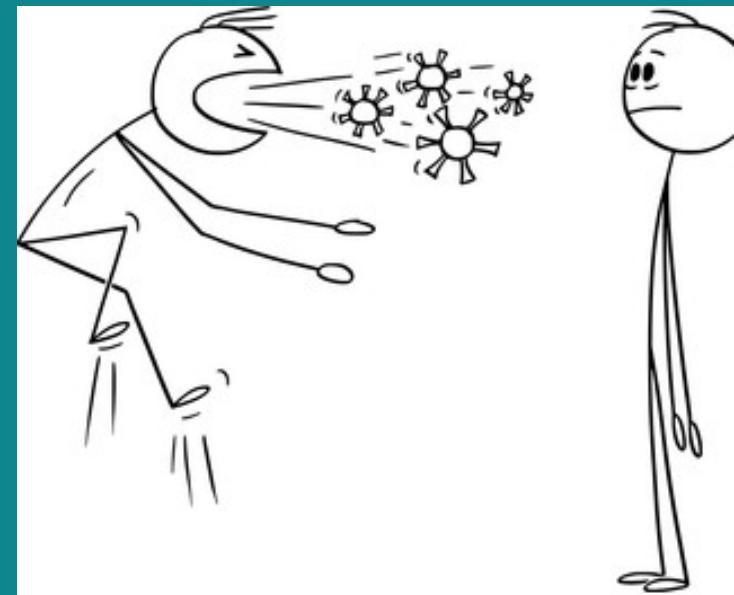


WHAT SHOULD I EXPECT IF I TEST POSITIVE WITH A PCR TEST?

- Expect a text message, email, or phone call from Public Health.
People with a cell phone will receive a text notification to confirm you have tested positive.
Please note: If you have a landline, you will still receive this information in your call from Public Health.
- Register for Public Health's daily check-in service.
A link to this service will be included in your text notification.
- Seek medical help if your symptoms get worse by calling 937. OR THRU SAHATI APP

INFORMATION FOR CLOSE CONTACTS

- I am: FULLY vaccinated
 - Self-isolate immediately and follow the instructions below:
- I have symptoms and am fully vaccinated:
 - Complete a test immediately and then again 72 hours after the last exposure. You can only exit isolation if:
 - PCR test: A PCR test collected at least 3 days (72 hours) after your last exposure is negative AND you are feeling better (fever has resolved and other symptoms are improving).
 - Rapid tests: Two rapid tests completed 24-48 hours apart are BOTH negative AND you are feeling better (fever has resolved and other symptoms are improving). The first of the two rapid tests should be collected at least 3 days (72 hours) after your last exposure.
 - If you have ongoing symptoms, remain in isolation. Re-test in 24-48 hours and only leave isolation once you are feeling better.
- If you do not complete testing, you are required to isolate a full 10 days from your symptom onset.



CLOSE CONTACTS

- Some individuals will need to isolate longer depending on their vaccination status and whether they are able to break contact from the person who has tested positive for COVID-19.

**The significant surge in COVID-19 cases in Nova Scotia has resulted in a backlog in Public Health contacting positive cases and close contacts. Public Health asks that you notify any social contacts.

**Please instruct close contacts to visit SAHATI OR TAWAKALNA APPS

3. ENGINEERING CONTROLS

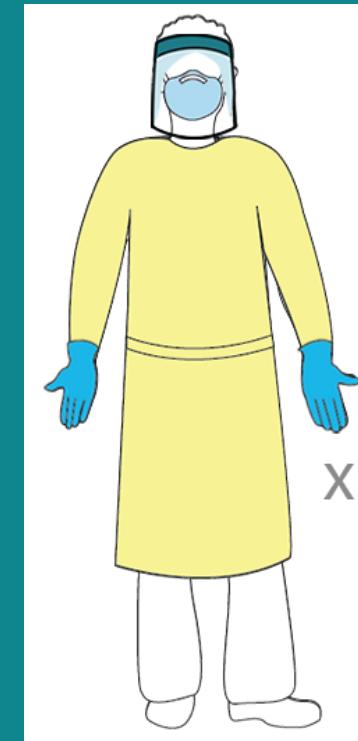
1. Physical distancing measures
2. Restricting numbers of occupants in elevators and small spaces
3. Physical barriers have been considered and implemented where physical distancing is not possible (following provincial directives)
4. Increased the number of handwashing stations in high traffic areas
5. Re-routed ventilation to bring in more fresh air into the buildings on campus

4. ADMINISTRATIVE CONTROLS

1. Implemented policies, procedures, and protocols to maintain safety and compliance with provincial directives and to protect our vulnerable campus members.
2. Implemented a COVID-19 vaccination strategy for campus members, to protect those individuals that are most vulnerable.
3. Educated faculty, staff and students on COVID-19 awareness, prevention and importance of compliance
4. Increased number of cleanings in high touch areas and high traffic areas (above routine cleaning) such as doorknobs, light switches, and faucets
5. Advanced planning, clear communication, and appropriate training, regarding addressing potential positive COVID-19 cases

5. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- PPE is used when other controls cannot be met
- Wear a mask (3-ply mask, which is now recommended with the Omicron variant)
- Launder non-medical cloth masks appropriately after each use
- Face shields, gloves, gowns, and 3-ply disposable face masks will be supplied to those individuals that may encounter someone with potential symptoms while in the course of their duties (e.g., quarantine/ self-isolation/ isolation periods)



WHAT CAN YOU DO? GET VACCINATED

- Pfizer-BioNTech Comirnaty, Moderna Spikevax and AstraZeneca Vaxzevria are approved for use in Canada as 2-dose COVID-19 vaccines. Janssen (Johnson & Johnson) is approved for use in KSA as 1-dose COVID-19 vaccine.
- Each vaccine has different recommendations on who can receive it and different levels of efficacy.
- People who choose to receive a viral vector vaccine (AstraZeneca or Janssen) should be aware that AstraZeneca and Janssen (Johnson & Johnson):
 - are less effective than mRNA vaccines (Pfizer or Moderna)
 - are not available for a booster dose (booster doses must be mRNA vaccines)
 - have a risk of a serious but rare blood clotting disorder, Vaccine Induced Immune Thrombotic Thrombocytopenia (VITT), up to 6 weeks after you get vaccinated
- The National Advisory Committee on Immunization recommends that people under 30 receive the Pfizer vaccine due to a rare but increased risk of myocarditis and pericarditis following the use of Moderna vaccine in this age group.
- Vaccine interchangeability
 - Anyone who received a first dose of Pfizer, Moderna or AstraZeneca can receive a second dose of either Pfizer or Moderna.

IMPORTANCE OF MASKING

- Mask-wearing is an integral part of a comprehensive approach to reducing COVID-19 transmission in both indoor or outdoor settings
- Especially important where there is widespread transmission and social distancing is difficult as well as indoor settings with poor ventilation (regardless of ability to distance)
- The rationale for wearing masks in the community is primarily to contain secretions of and prevent transmission from individuals with infection, including those who have asymptomatic or pre-symptomatic infection



MASK POLICY

Wear a mask especially when you are unable to maintain physical distancing of 2 metre (6 feet).



**MASK USE
IS REQUIRED***
**IN ALL CLASSROOMS AND
PUBLICLY ACCESSIBLE
INDOOR SPACES AND
WHEN SOCIAL DISTANCING
IS NOT POSSIBLE**

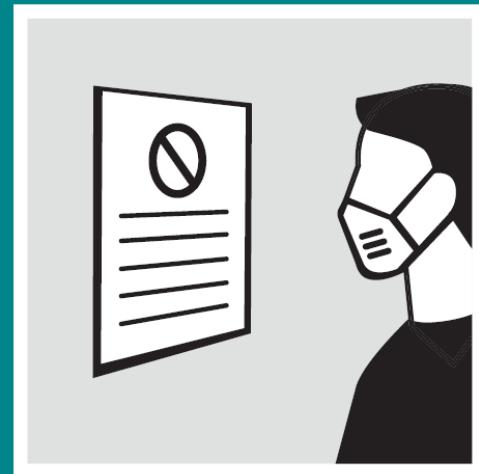
*EXEMPTIONS ARE PROVIDED FOR MEDICAL REASONS

Help protect our Acadia community from COVID-19

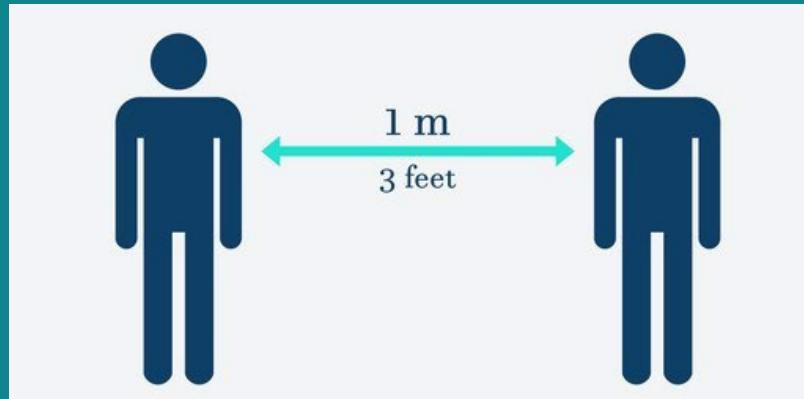


Safety and Security 902-585-1103 | covid-19-information.acadiau.ca | covid-19@acadiau.ca | Info Line: 902-585-4636

WHAT CAN YOU DO TO PREVENT INFECTION?



Stay informed and follow Canadian and Nova Scotia Public Health directives



Strive for approximately 1-metre (3-foot) distancing (when possible) on campus and 2 metre distancing in the mask-free study spaces

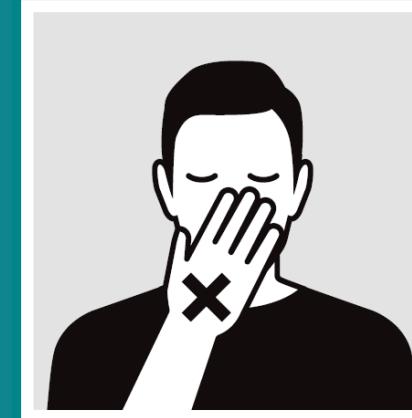
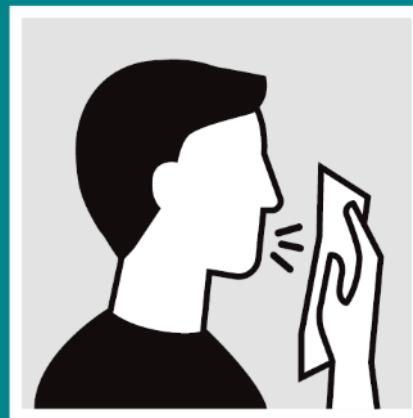


Clean high touch areas in your living and working space routinely

WHAT ELSE CAN YOU DO?

Practice good cough etiquette

- Use a tissue - Wash your hands
- Cough or sneeze into your elbow - Wash your hands
- Avoid touching your eyes, nose, and mouth - Wash your hands



WHAT ELSE CAN YOU DO?

Stay healthy to maintain a good immune system

- Exercise routinely
- Maintain good nutritional habits
- Get adequate and routine sleep

Get your COVID-19 vaccination



DON'T FORGET!

Practice good hand hygiene.

Wash your hands...

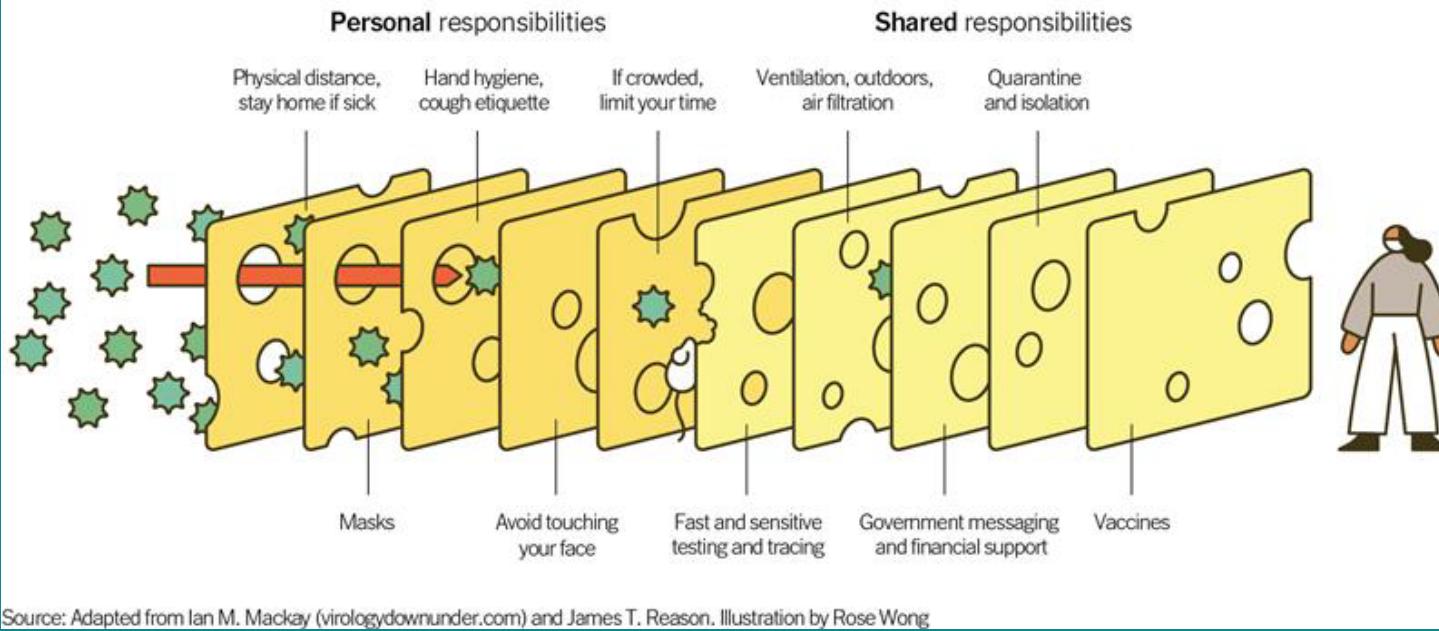
- Before and after preparing food
- After touching pets
- After handling waste or dirty laundry
- After going to the washroom
- When your hands look dirty
- After touching surfaces used by others



REMEMBER MULTIPLE STRATEGIES ARE MORE EFFECTIVE

Multiple Layers Improve Success

The Swiss Cheese Respiratory Pandemic Defense recognizes that no single intervention is perfect at preventing the spread of the coronavirus. Each intervention (layer) has holes.



Source: Adapted from Ian M. Mackay (virologydownunder.com) and James T. Reason. Illustration by Rose Wong

THANK YOU