Enhanced Interventions to Prevent CLABSI

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STRIVE
States Targeting Reduction in Infections via Engagement

Presenter

Karen Jones, RN, MPH, CIC

Clinical Research Coordinator
University of Michigan

Contributions by

Vineet Chopra, MD, MSc
University of Michigan

Kristi Felix, RN, BSN, CRRN, CIC
Madonna Rehabilitation Hospital

Len Mermel, DO, ScM, AM (Hon)
Medical School of Brown University

Russ Olmsted, MPH, CIC, FAPIC
Trinity Health, Livonia MI

Payal Patel, MD, MPH
University of Michigan

Learning Objectives

- Outline the Tier 2 interventions to prevent CLABSI

- Describe when implementation of Tier 2 interventions may be necessary

- Identify strategies to overcome barriers to CLABSI prevention interventions

Tiers of CLABSI Prevention*

TIER 1 Standardize Supplies, Procedures and Processes				
(complete all interventions: review and audit compliance with Tier 1 measures prior to moving to Tier 2)				
Assess appropriateness and need for Central Venous Catheter (CVC)	Select appropriate site of insertion; avoid use of femoral site	Ensure proper aseptic insertion using maximal sterile barriers and ultrasound guidance	Ensure proper care and maintenance of CVC; e.g. proper hand hygiene, adequate staffing, disinfection of connector, secure/intact dressing	Optimize prompt removal of clinically unnecessary CVCs

(If CLABSI rates remain elevated, start with CLABSI Guide to Patient Safety (GPS) and Target Assessment for Prevention (TAP) Strategy and then proceed with additional interventions)

Perform needs assessment with CLABSI GPS and TAP Strategy

Tier 2 Enhanced Practices				
Conduct multidisciplinary rounds to audit for necessity of continued CVC use	Feed back CLABSI and CVC utilization metrics to frontline staff in "real time"	Observe and document competency and compliance with CVC insertion and maintenance	Use additional approaches as indicated by risk assessment (e.g., antimicrobial coated CVC)	Full or mini root cause analysis of CLABSI

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Multidisciplinary Rounds

Diverse perspectives improve decision-making

Patient-centered model of care
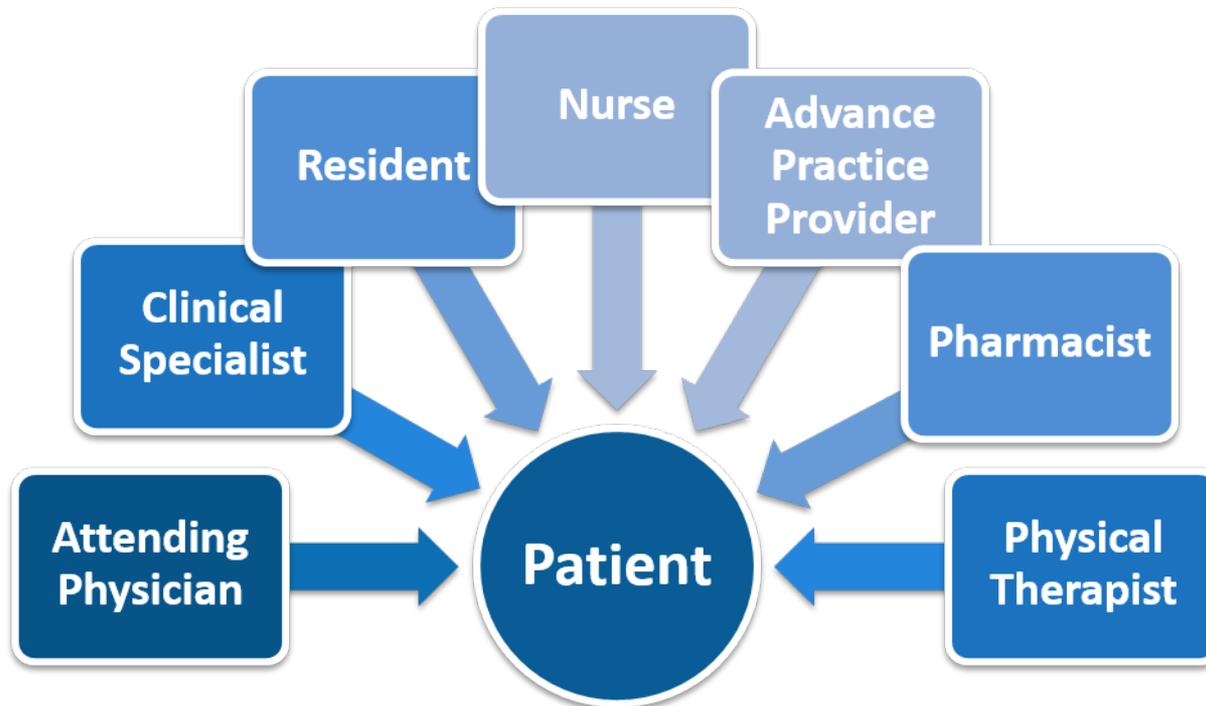
(How-to Guide: Multidisciplinary Rounds, IHI, 2015)

Multidisciplinary Rounds to Assess CVC Necessity

Audit for CVC necessity
- Tailor care plan for each patient's specific needs
- Clarify patient goals while identifying safety risks

Provide educational opportunities and process improvement strategies

Understand and follow protocols

Goal of rounding is to identify and remove unnecessary CVCs

(Eliminating CLABSI, A National Patient Safety Imperative, AHRQ, 2013; Chopra V, AHRQ, 2013)

Example of a Daily Safety Checklist

ICU Daily Safety Huddle Checklist

Date: _____ Manager/Charge RN: _____

Safety Concern	301	302	303	304	305	306	307	308	309
Central Line • **Fem line/emergent line** • > 5 days • < 5 days									
Indwelling Urinary Catheter									
Ventilator									
Fall Risk									
Restraints									
Skin Assessment									
Family Concerns									

Unit Data (*share with staff daily*)

Days since last CLABSI: _____
Days since last CAUTI: _____
Days since last VAP: _____
Days since last fall: _____
Days since last pressure ulcer: _____

Multidisciplinary Rounds
Barriers and Solutions

Barriers: Limited time, unable to incorporate into daily workflow

Solution: Integrate rounds with other tasks

- Clear expectations

- Review all devices at the same time

- Designate nurse or physician champion to support this process

(Eliminating CLABSI, A National Patient Safety Imperative, AHRQ, 2013)

Multidisciplinary Rounds Barriers and Solutions

Barriers: Lack of healthcare personnel engagement, disagreement among clinicians

Solution: Use the time to discuss goals for patient
- Review guidelines for maintaining devices

(Chopra V, AHRQ, 2013)

Guidelines and Indications for CVC Use

- Hemodynamic monitoring in critically ill patient

- Medications requiring central access

- Frequent and difficult access for blood draw

- Multiple incompatible infusions

- Palliative treatment at end-of-life

- Cyclical/episodic chemotherapy needed for >3 months

(Chopra V, Ann Intern Med, 2015)

Data Sharing with Clinical Staff

- Share CLABSI numbers, events and CVC utilization with frontline staff in "real time"

- Trends over time

2 West CLABSIs
(6-month snapshot)

■ SIR (Standardized Infection Ratio)

Goal: 0.75 or lower

MICU Central Line Use
(% patients/day with CVC)
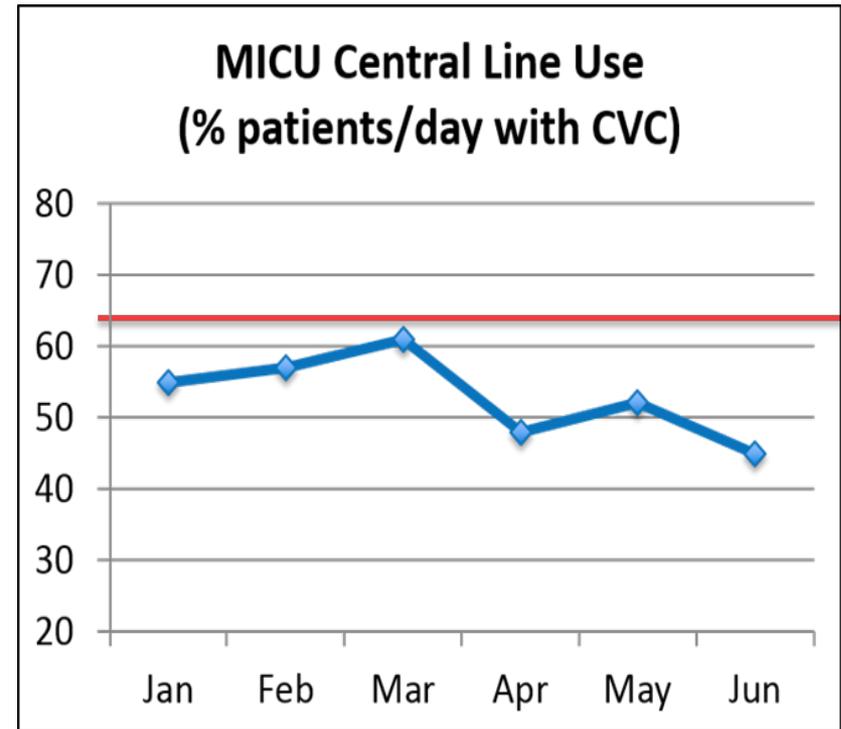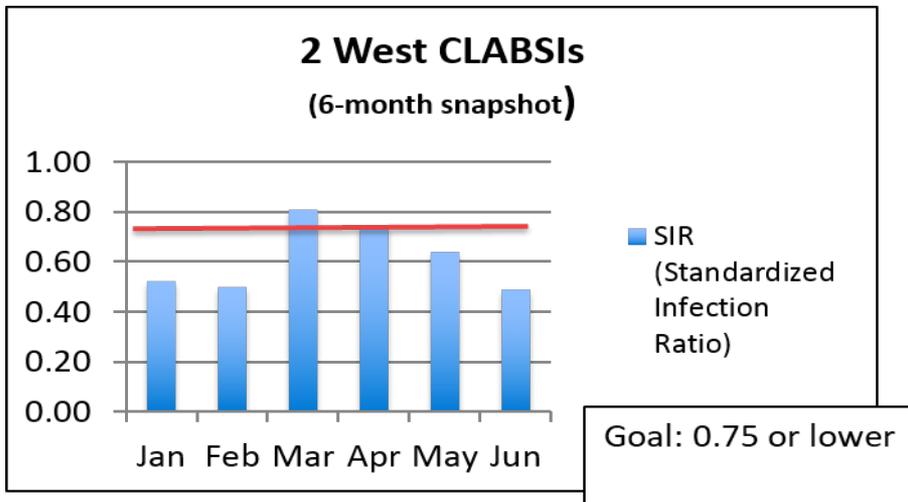
Goal: 62% or lower
We met our goal for months
January – June! Great job!

Data Sharing with Clinical Staff

WHAT

Infections
Utilization
Who's placing
Who's removing

WHERE

Huddles
Staff meetings
Nurse practice
council

WHEN

Daily
Monthly
Quarterly

HOW

Posted
Email
Peer-to-peer
Formal presentation

Data Sharing Barriers and Solutions

Barrier: Unsure of how to effectively present data

- Staff may not understand the data and/or their role in making improvements

Solution: Keep it simple

- Provide examples and use stories to help healthcare staff "connect the dots"
- Include discussion in regular shift report
- Share data in aggregate

Data Sharing Barriers and Solutions

Barrier: Staff may feel like they are to blame or become defensive

Solution: Keep the discussion focused on patient risk factors and how to prevent it from happening to another patient

- Use "we" and not "you"
- Listen to feedback for solutions

CVC Insertion: Competency and Adherence

CVC insertion

– Observe and document <u>competency</u>

– Observe and document <u>adherence</u>

Provide initial and recurrent training for CVC inserters

Simulation-based learning

(Marschall J, Infect Control Hosp Epidemiol, 2014)

CVC Insertion Competency and Adherence

- Insertion bundle policy vs. practice

- Adherence with all five bundle practice elements associated with the greatest reduction in CLABSI

- The presence of a CVC bundle insertion policy <u>without adherence monitoring</u> showed no impact

Central Line Insertion Care Team Checklist Instructions

Operator Requirements:
- Specify minimum requirements. For example:
  - A minimum of 5 supervised successful procedures in both the chest and femoral sites is required (10 total). If a physician successfully performs the 5 supervised lines in one site, they are independent for that site only. Please note that in the absence of contraindications, a chest site is preferred over the femoral due to a lower incidence of mechanical and infectious complications.
  - A total of 3 supervised rewires is required prior to performing a rewire independently.
  - Obtain a qualified second operator after 3 unsuccessful sticks (unless emergent).

Roles:
- Operator Role: Person inserting the line
- Assistant Role: RN, ClinTech, Physician, NP, PA (responsible for completing checklist)

Patient Positioned for Procedure:
- For Femoral/ Peripherally Inserted Central Catheter: Place supine.
- For Chest/External Jugular: Use Trendelenburg (HOB < 0 degrees) unless contraindicated.

Sterile Field:
- Patient full body drape
  - Long sterile may need to be added to commercially prepared kits.
- Sterile tray and all equipment for the procedure
- Ultrasound probe

Prep Procedure:
- Scrub back and forth with chlorhexidine with friction for 30 seconds, allow to air dry completely before puncturing site. Do not wipe, fan, or blot. (Groin prep: Scrub 2 minutes and allow to dry for 2 minutes to prevent infection.)
  - Chlorhexidine/alcohol applicator used; Dry Technique: 30-second scrub + 30-second dry time
  - Chlorhexidine/alcohol applicator used; Wet Technique: 2-minute scrub + 1-minute dry time

Guide Wire:
- Do *not* cut the guide wire due to the increased risk of losing the guide wire in the patient.

(Furuya EY, Infect Control Hosp Epidemiol, 2016)

Insertion Competency and Adherence Barriers and Solutions

Barrier: Unclear process for ensuring provider competency for CVC insertion

Solution: Provide training for CVC inserters

– Provide direct feedback on performance

– Utilize checklists when possible

(Barsuk JH, Arch Intern Med, 2009; Barsuk JH, BMJ Qual Saf 2014)

CVC Maintenance Competency and Adherence

CVC maintenance

– Observe and document <u>competency</u>

– Observe and document <u>adherence</u>
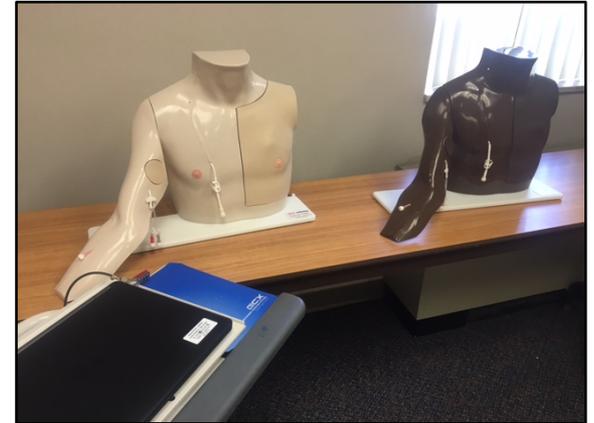
Audits will help to identify:

– Educational needs

– Supply issues

– Socio-adaptive concerns

(Marschall J, Infect Control Hosp Epidemiol, 2014)

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Maintenance Competency and Adherence Barriers and Solutions

Barrier: Limited time and resources to oversee CVC maintenance competency for all staff

Solutions: Provide opportunities for competency checks during unit-based education

- Audit results can help tailor education and training to the unit or hospital's specific needs

Maintenance Competency and Adherence Barriers and Solutions

Barrier: CVC maintenance competency doesn't mirror real-life situations on actual patients like restlessness, non-adherence, body habitus

Solutions: Identify nurse champions to help with competency checks on difficult or noncompliant patients

Summary

Multidisciplinary rounds: engage everyone responsible for the patient's care

Share data: hold clinical staff accountable to see improvements

- Do they know how they truly impact patient safety?

Audit competency: competency-based training should include "just-in-time" education and feedback

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Speaker Notes

This CLABSI Prevention module titled "Enhanced Interventions to Prevent CLABSI" will help you better understand enhanced interventions for preventing CLABSIs.

Speaker Notes: Slide 2

This module was developed by national infection prevention experts devoted to improving patient safety and infection prevention efforts.

After completing this module you will be able to:

- Outline Tier 2 interventions to prevent CLABSI,

- describe when to consider implementing these Tier 2 interventions and

- identify strategies to overcome barriers associated with these interventions.

The first set of learning modules on CLABSI prevention focused on Tier 1 interventions, outlined on the top portion of this slide. We've discussed the impact CLABSIs can have on patients, and why developing strategies to prevent them is so important. If after implementing these strategies, improvement does not occur, we encourage you to start with the CLABSI Guide to Patient Safety (GPS) and TAP Strategy to perform a needs assessment. Based on the needs assessment, implement enhanced interventions as highlighted in the red boxes.

The Institute for Healthcare Improvement describes multidisciplinary rounds as patient care team discussions used to improve patient care. Diverse perspectives from physicians, nurses, pharmacists, therapists and others will improve quality and safety of care, along with better coordination across the healthcare continuum. Better collaboration among the healthcare personnel will result in a more cohesive plan of care and positive healthcare experience.

Key members of the team caring for the patient come together and offer their expertise. Face-to-face conversations will improve communication among the disciplines. This is part of a patient-centered model of care that coordinates and determines care priorities while establishing daily goals.

One essential component of Tier 2 strategies is to perform multidisciplinary rounds, auditing for the necessity of CVCs. A Tier 1 approach was the prompt removal of CVCs. Here, in Tier 2, the team should routinely perform multidisciplinary rounds to evaluate which patients have CVCs and which truly fit the criteria to maintain these lines.

Speaker Notes: Slide 6 Continued

During multidisciplinary rounds, especially in units that have a high utilization of CVCs, vascular access devices should be discussed along with other invasive devices, such as urinary catheters and mechanical ventilators. The team must examine goals for each individual patient and identify risks associated with the plan of care. Additional benefits of performing multidisciplinary rounds are to provide teaching opportunities to healthcare personnel in training, assess process improvement opportunities and determine how protocols can enhance patient care and safety. At the end of the day, we want our multidisciplinary rounds to identify and remove any CVCs that are no longer necessary for patients.

You may want to consider building a more comprehensive "safety checklist" that incorporates several safety concerns into one concise form. The example on the slide is another way information from multidisciplinary rounds can be collected and recorded. This should be the responsibility of a designated care team leader. Having cumulative data of "days since last event" is another way patient harm prevention can be discussed on a daily basis with all the disciplines. These data could also be tracked over time to better understand unit-specific and hospital-specific safety risks and opportunities for improvement.

It's important to anticipate potential barriers you may encounter before implementation. One barrier you may come across related to multidisciplinary rounds is that staff do not believe they have the time to participate in daily rounding. To overcome this barrier, it is important to incorporate the daily review of line necessity into workflow – implement with champion and review if it's actually being done. If this is a new process for a unit, ask that leadership present and support it – it should be promoted as being a positive measure and not a burden for those evaluating lines.

It may take some time to fully incorporate into the daily workflow. Having a unit champion to support the day-to-day effort and unit-specific barriers will be useful. Keep in mind that multidisciplinary rounds may look different based on the type of unit and facility. An ICU may have a large group perform rounds at a pre-determined time and designate a care team leader to complete a checklist. Multidisciplinary rounds on a medical unit may consist of the patient's nurse, the charge nurse, and case manager. Consider what is best for the unit, the facility, and its patients.

Have a leader– promote this process and ensure that it's being done. The goal is to hardwire multidisciplinary rounds into the workflow so it becomes daily practice.

Another barrier is lack of engagement with multidisciplinary rounds or disagreement among clinicians regarding the plan of care specific to the need for the CVC. As with the previous barrier, it's important for clinicians to focus on the patient; identify goals and work towards those goals. Indicating CVC necessity should not be just another "box to check." To achieve consensus within the care team, guidelines identify which devices can remain in place should be used.

Speaker Notes: Slide 10

Does your healthcare facility have guidelines or specific indications for continued use of a CVC? This slide lists some common indications for CVC use. These are specific for peripherally inserted central catheters or PICCs, but are common reasons to use central lines in a healthcare setting. Consider your hospital or facility when developing a guideline for use. Indications for use may also be found on the CDC website for CLABSI prevention. Having written guidelines or indications may provide guidance and support when there is disagreement among clinicians.

CLABSIs and CVC utilization metrics are being routinely collected and reported for reimbursement Facility leadership is often very interested in current CLABSI data, but is this information reaching those who are directly responsible for the insertion, care and maintenance of lines? Think of the best way this information can be shared. While leadership may receive the information in a comprehensive, scorecard, key messages can be broken down into smaller pieces to focus on unit specific information for frontline staff.

Charts, graphs or tables should be simple and easy to understand and quickly read. Bedside clinicians often don't have time to look at pages of results. Sharing unit results and goals helps build team culture and empower ownership. When events like infections are presented, specifics should be conveyed in a "deeper dive" root cause analysis or learning from defects evaluation. Additional information on performing a root cause analysis is discussed in the next module.

It's best to discuss events as quickly as possible after they occur, preferably in "real time" when patient information is still fresh in clinicians' minds.

Clinical staff should be aware of the metrics being tracked and reported. Bedside clinicians should understand how their work impacts patient care and make the connection between their actions and patient outcomes.

Speaker Notes: Slide 12

Here are some more ideas and questions to consider about data sharing:

WHAT will you share? Some hospitals may already have a process in place to share CLABSI numbers or rates, and device utilization. Depending on your type of facility, unit and current issues, consider including who is inserting and who is taking the initiative to remove. Think about how you can collect this information.

WHERE do you share this information? Daily huddles are a great way to communicate on a regular basis with staff. Units may have these built into the current process of information-sharing. Staff meetings and other non-unit based formal discussions may be an effective way to share results.

WHEN should you share information? Oftentimes, CLABSIs are reported out as soon as they are identified. Aggregate data, such as numbers of infections over a period of time including rates, SIRs, or number of infections prevented can be made into graphs or tables and shared monthly and quarterly.

And finally, HOW should you share this information? Get feedback from those who will be getting the information and their leaders.

Does the nursing unit have a bulletin board where it can be posted, and is it in plain sight? Email is good, but do bedside clinicians have the ability to check their email on a routine basis? While peer-to-peer sharing of information is great, it takes extra time to be able to catch healthcare personnel on all shifts. Formal presentations may still not capture all bedside clinicians and it's challenging to do this during times when patient care is being performed. Consider data sharing as part of a standing agenda item at a nursing-specific or physician meeting, nurse manager or preceptor meetings, nurse practice councils, department meetings or during shared governance. Often, you may need to do a combination of all of these to reach most staff.

A considerable barrier with data sharing is not having enough time or effective methods to get it to those who need to know, especially in "real time." As mentioned, it will be more effective to break the information down into clear, easy-to-read snippets. Include a champion, which may be a nurse leader or staff member who is passionate about patient safety. Consider creative ways to share the data and listen to suggestions from staff members on the unit. Make it an opportunity to build the data sharing into daily shift report or huddle. Consider posting or sharing aggregate numbers electronically.

Another barrier may be feelings of blame; staff may become defensive when discussing infections, rates or utilization. Try to keep the discussion focused on the patient's risk factors and needs. To keep lines of communication open, encourage a group or team atmosphere – how will "WE" prevent the next CLABSI? How can "WE" work together to remove CVCs promptly? Spend time listening to staff concerns and don't blame anyone. Make sure that you offer potential solutions on how the next infection can be prevented, alternatives to decrease CVC use, and improved methods of communication between nursing units during transfers of care.

Next, it's important consider taking a closer look at the insertion of CVCs. Please refer to the Tier 1 CLABSI modules on proper CVC insertion steps. While competency describes the ability to perform a job successfully, adherence is following through with the requirements for a particular task. Inserting a central line must be done by competent providers who are adherent to evidence-based standards of care.

Speaker Notes: Slide 15 Continued

Documenting technical skills and adherence to policy may help to identify trends among groups or by individuals, educational needs that are not being met, or supplies may are not appropriately positioned. It can also show if any adaptive or unit-based cultural issues are present. Simulation or simulation-based learning is an effective method of training and will be discussed in upcoming slides.

Your facility may already follow evidence-based guidelines for insertion and use a checklist. The example on the right lists essential steps clinicians should be following to provide the safest CVC insertion process.

But, how do we know clinicians are inserting these lines correctly? Policies on insertion bundles are common at hospitals and facilities that place CVCs.

A study by Furuya and colleagues looked at 984 adult ICUs in 632 hospitals. While most had central line bundle insertion policies, only 69 percent of hospitals reported excellent adherence of 95 percent or better in AT LEAST one element of the bundle.

While lower CLABSI rates were associated with excellent adherence in just one element of the bundle, the greatest reduction in CLABSI rates were on units where ALL FIVE elements were followed. No association was seen with just having a CVC insertion bundle policy, meaning that just having a written CVC insertion bundle policy, does not equate to lower CLABSI rates without adherence monitoring.

A barrier to insertion competency and adherence is an unclear process for ensuring competence. Providing adequate training for CVC inserters is necessary, including direct feedback on performance by proficient inserters and using checklists to ensure all steps are being followed.

Who is allowed to insert CVCs at your facility? To ensure competency, have experienced inserters – a physician champion or peer leader - observe the process of CVC insertion. A method of documenting competency should be developed and maintained. A 2014 study by Barsuk examined how a simulation competency affected CLABSI rates in an ICU. In the study, ICU residents had to meet or exceed a minimum passing score on simulated insertions. CLABSI rates decreased from 3.82 per 1,000 catheter days to 1.29 per 1,000 catheter days when comparing the 23 months before the training and 21 months after the training. This study underscores the importance of knowing and following evidence-based practice for CLABSI prevention during insertion.

Similar to the proper insertion, it's important to understand who is responsible for maintaining CVCs. We've already discussed what's involved in proper maintenance – now it's time to assess and document competence and adherence with these measures. Consider who will be observing and documenting competency and adherence for CVC maintenance. Simulation-based training has been instituted for some facilities to ensure competency.

Adherence or audits can be done by evaluating CVC dressing change performance, examining the integrity of the CVC dressings on patients at a point in time, such as once a shift, and how needleless connectors are accessed.

These audits on the unit during direct patient care could be done by both nursing leaders or even peers during a designated time. Direct feedback on performance should be given to others with the intention of maintaining the safest environment possible for patients. For those receiving the feedback, a simple "thank you" should be the encouraged response.

Auditing for adherence of CVC maintenance metrics will help to identify educational needs. It can also help to highlight issues with supplies. For example, if necessary items or supplies for CVC maintenance are kept in a location that's easily accessible to staff that need them, and if they're actually available when needed. Are staff having problems with a particular dressing type adhering to the patient's skin, or are there not enough antiseptic wipes in a pre-made CVC dressing change kit? Audits will help to identify these modifiable issues, as well as socio-adaptive issues that may be preventing CLABSI reduction.

With many competing demands on staff time, CVC maintenance competency may take a back seat to other nursing education priorities. Share data on the impact of CLABSI to those responsible for designing nursing education at your facility. Use data to support CLABSI reduction with simulation training on CVC maintenance.

Determine who will be responsible, who will support and who will document competency for nursing staff receiving the CVC maintenance training. How often will this competency be assessed? Will it be unit-based or for the entire facility? Audit staff adherence with practices and provide "just-in-time" education and feedback.

Speaker Notes: Slide 19 Continued

Audit adherence by staff with care and maintenance practices like condition of dressings and scrubbing the hub prior to accessing the line.

Use results to educate and coach frontline nursing staff. For more ideas on auditing best practices please review the foundational course on competency-based training, audits and feedback.

Another barrier is that even the best simulated CVC maintenance competency assessment does not include situations like patient restlessness, non-adherence or issues unique to the patient's body habitus. Ensure that healthcare personnel know the appropriate steps to follow, but remind staff that real-life situations are usually never this easy. Identify nurse champions to provide practical solutions and provide practical solutions and assist with competency checks, especially during challenging patient situations.

Here are a few closing thoughts and three key solutions for improvement of CLABSI prevention. With a goal of reducing CLABSI, be sure to address CVCs at every discussion of patient goals and hand-off opportunity. Clinicians should consider the continued need for CVCs at every transfer of care.

Share data and use data to drive action. Engage staff by sharing infection and device utilization data with them in "real time". Share data that is meaningful and understandable. When infections do occur, involve staff in the root cause analysis process to identify contributing factors and recommendations for improvement. Promote open discussion to identify barriers and solutions.

Lastly, recognize that assessing and documenting competency and adherence of those inserting and maintaining CVCs is essential. Routine checks with feedback is key to ensuring patients are receiving the safest care available.

No notes.

No notes.