Reducing Dialysis Related Infections and Hospitalizations

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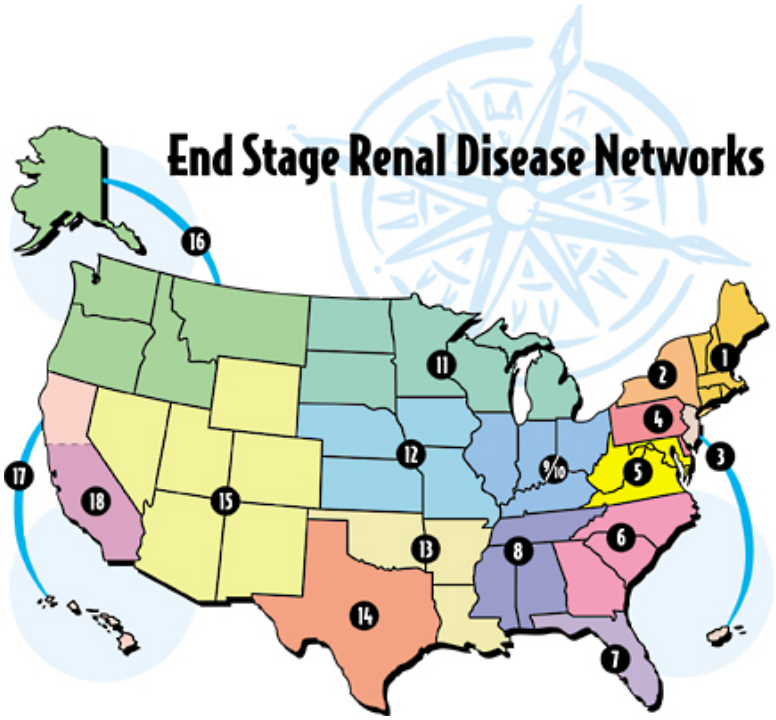
End Stage Renal Disease (ESRD) Network 15

September 19, 2018

Role of the ESRD Network

Centers for Medicare & Medicaid Services (CMS) Goals for Networks:

- Increase focus on patient-centered care
- Improve quality and safety of care
- Improve independence, quality of life, and rehabilitation
- Resolve grievances and improve patient perception and experience of care
- Increase collaboration with providers
- Improve collection, reliability, timeliness, and use of data



Learning Objectives

By the end of this session attendees will be able to:

- Interpret CMS ESRD Conditions for Coverage (CfCs):
  - Infection Prevention
  - Water Quality
- Recall Network 15's 2017–2018 quality improvement activities (QIAs)
  - Reducing Bloodstream Infections (BSIs)
  - Decreasing Hospital Utilization
  - Improving National Healthcare Safety Network (NHSN) Data Quality
- Discuss the Centers for Disease Control and Prevention (CDC) Core Interventions
- Apply best practice guidelines for prevention of healthcare-associated infections (HAIs) in hemodialysis patients
- Explain his/her facility's NHSN reporting requirements
- Use ESRD and NHSN reports to improve outcomes

Infection Control in Hemodialysis

Infection Prevention/Patient Safety

Conditions for Coverage

Implementation of a Comprehensive Infection Control Program	• Routine serologic testing and immunization • Surveillance • Training and education
Handwashing and Gloves	• Between each patient or station • When caring for a patient or touching the patient's equipment • When performing all procedures with potential for exposure • Provided to patients and visitors at risk for exposure to blood/body fluid
Cleaning and Disinfection of Contaminated Surfaces, Medical Devices and Equipment	• Prevent transmission of blood-borne pathogens (HBV)
Routine Testing for Hepatitis B (HBV)	• Prior to admission to the hemodialysis unit • Routine testing (dependent on HBV serologic status) • Isolation of HBV+ patients, designated separate room, machines, equipment, supplies and medications

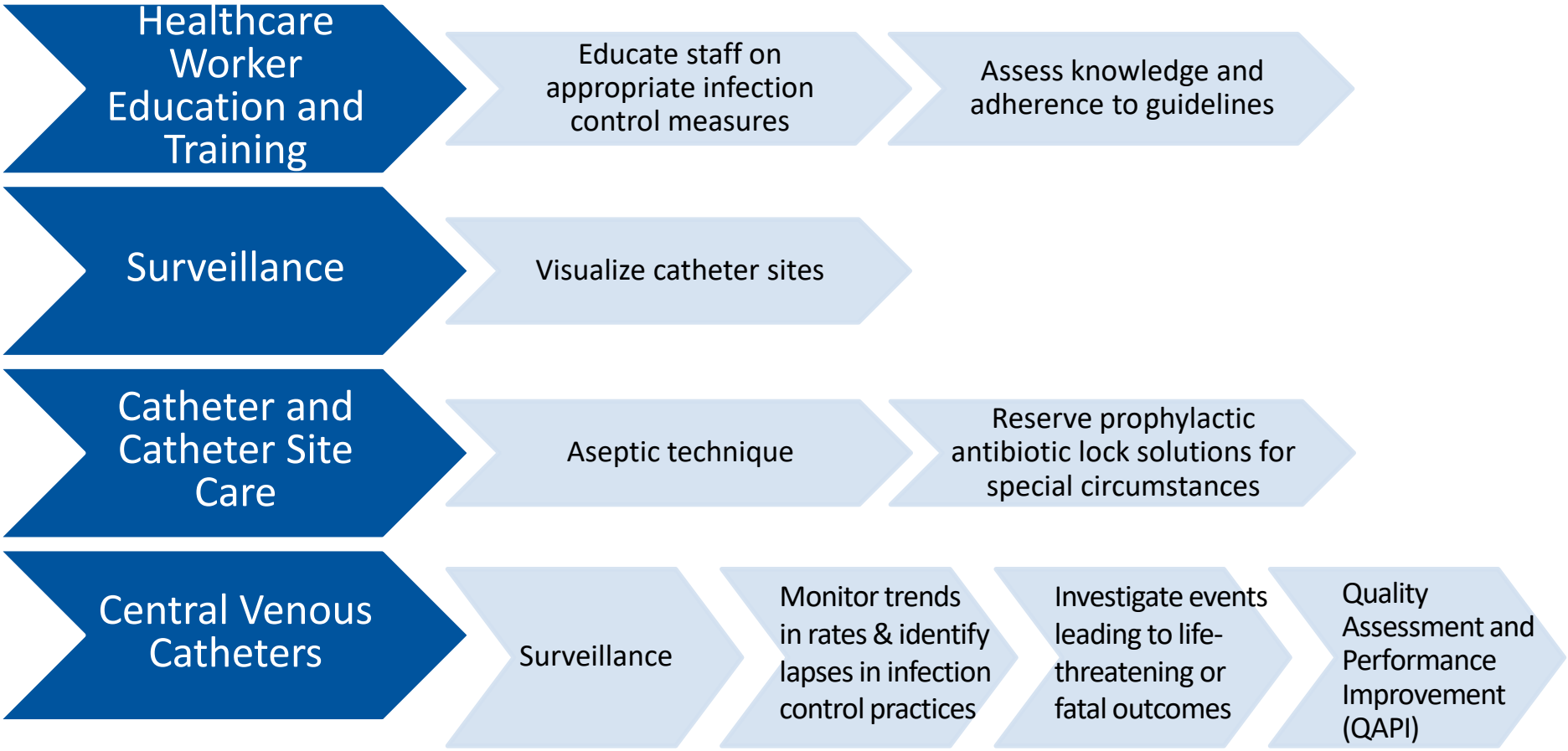
*CDC *Recommendations for Preventing Transmission of Infections Among Chronic Hemodialysis Patients, V112; V113, V114, V124*

Two Most Common Routes of Catheter Infections (CRBSI)

Migration of skin organisms through the insertion site and into the catheter tract = colonization of the catheter tip

Contamination of the hub = colonization of the intraluminal catheter

V147 and V148 Recommendations

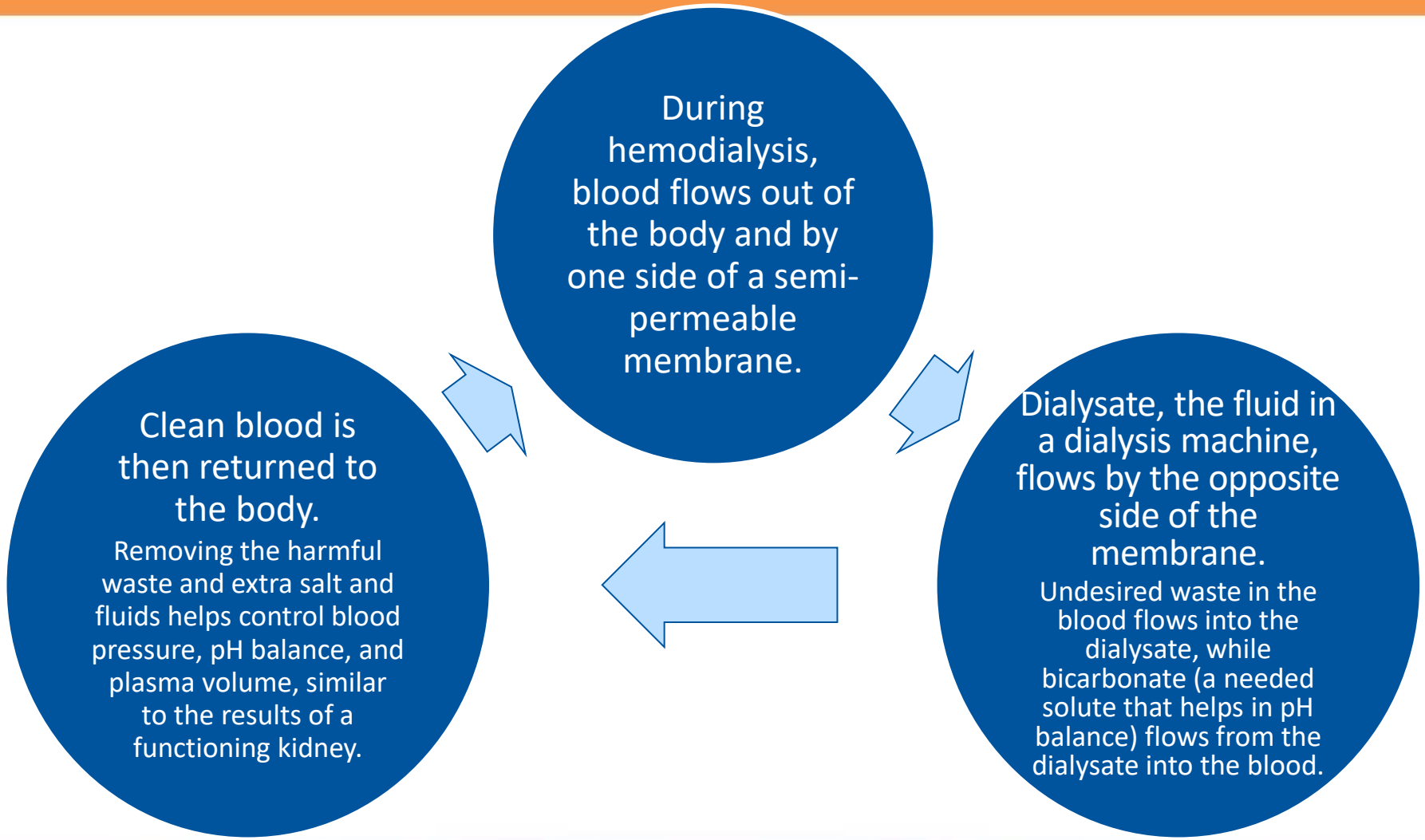


Water and Dialysate Quality in Hemodialysis

Infection Prevention and Monitoring in the Dialysis Setting

V-Tag Number V494.40-Conditions for Coverage

Process for Water Use in Hemodialysis



Water Treatment for Use in Hemodialysis

For the health and safety of hemodialysis patients, it is vital to ensure that the water that is used to make dialysate is safe and clean.

Hemodialysis requires special water treatment processes to prevent adverse patient outcomes of dialysis therapy resulting from improper formulation of dialysate with water containing high levels of certain chemical or biological contaminants.

Association for the Advancement of Medical Instruments (AAMI) Standards

The AAMI standards address:

- Chemical and microbiologic standards for:
  - The water used to prepare dialysate.
  - Substitution fluid.
  - Reprocessing of hemodializers for renal. replacement therapy (reuse vs. non-reuse).
- Equipment and water purification processes for the:
  - Preparation of concentrates and dialysate and the reprocessing of dialyzers for multiple use.
  - Devices used to store and distribute this water.

Guidelines for Environmental Infection Control in Dialysis Water Quality and Dialysate

Adhere to AAMI standards for quality assurance performance of devices and equipment used to:

- Treat water.
- Store water.
- Distribute water in:
  - Acute hemodialysis centers.
  - Maintenance [chronic] settings.
- Prepare concentrates and dialysate.

Water Quality

Conduct microbiological testing specific to water in dialysis settings.

- Perform bacteriologic assays of water and dialysis fluids at least once a month and during outbreaks using standard quantitative methods.
  - Assay for heterotrophic, mesophilic bacteria (for example, Pseudomonas or Staph A)
  - Do not use nutrient-rich media (for example, blood agar or chocolate agar).
- Ensure that water does not exceed the limits for microbial counts and endotoxin concentrations

Guidelines for Environmental Infection Control-Dialysis Water Quality & Dialysate

Disinfect water distribution systems in dialysis settings on a regular schedule.

Monthly disinfection is required.

Whenever practical, design and engineer water systems in dialysis settings to avoid incorporating joints, dead-end pipes, and unused branches and taps that can harbor bacteria.

When storage tanks are used in dialysis systems, they should be routinely drained, disinfected with an EPA-registered product, and fitted with an ultrafilter or pyrogenic filter (membrane filter with a pore size sufficient to remove small particles and molecules >1 kilo Dalton) installed in the water line distal to the storage tank.

Water Cultures/Dialysate: Monthly Testing

When testing:

- Water cultures should have acceptable levels of 0–49 colony forming units.
- A plan of correction must be implemented if a colony count is above 50 CFU.
  - Ensure product water is within parameters.
  - Corrective measures must be taken to reduce pyrogenic reactions, endotoxins associated with gram negative bacteria.
- Patient safety is at risk if contamination level is above 200 CFU/ml.

ESRD Network 15's Quality Improvement Activities

Reduce Blood Stream Infections 2017-2018
Decrease Hospital Utilization 2016-2017

HAIs in the ESRD Population

The incidence of infection in the ESRD population can be up to 100 times higher than in the general population

With a 43 percent higher rate of mortality.

Violations in infection prevention protocols are the most cited violations in dialysis facilities by SAs .

HAI Prevention Strategies

Adhere to hand hygiene protocols

Implement standard precautions

Utilize aseptic technique for dialysis permanent access and catheter care

HAI Prevention Strategies cont.

Clean and disinfect dialysis station and shared equipment between each patient.

Monitor water to ensure purity for hemodialysis use.

Use antimicrobial agents judiciously.

Provide ongoing patient education.

Potential Cross-Contamination Hazards

- Clamps
- Scissors
- Dialysis machine control knobs
- Door knobs
- Hemostats
- Priming buckets
- Bed/chair
- Countertops
- Stethoscopes
- Blood pressure cuffs
- Waste containers used during the priming of dialyzers
- Blood tubing draped or clipped to waste containers
- Items placed on top of machines, such as dialyzer caps and medication vials

2017 QIA Goals

- Demonstrate a 5 percent relative reduction in the pooled mean rate of BSIs in the targeted QIA facilities
- Promote patient, family, and caregiver engagement within the facilities
  - Allow patients the ability to impact their own care and engage in monitoring infection prevention opportunities.

Baseline Measurement

Baseline: baseline data from January –June of the previous year

QIA facilities combined BSI rates from the first and second quarter of 2016
Semi-annual Pooled Mean BSI Rate= **1.036**

Re-measurement:
QIA facilities' pooled mean BSI rate from the first and second quarter of 2017=**0.606**

- Calculation
  - = (Sum of half year QIA facilities' numerators) / (Sum of half year QIA facilities' denominators) x 100
  - Numerator (number of bloodstream infections) and denominator (patient-months) =Bloodstream Infection Rates" in NHSN

- **QIA Time Period:** 6 month timeframe: Short-Cycle Improvement
  - January 2017 through September, 2017
  - Re-measurement = January through June 2017

QIA Dialysis Facility Inclusion Criteria

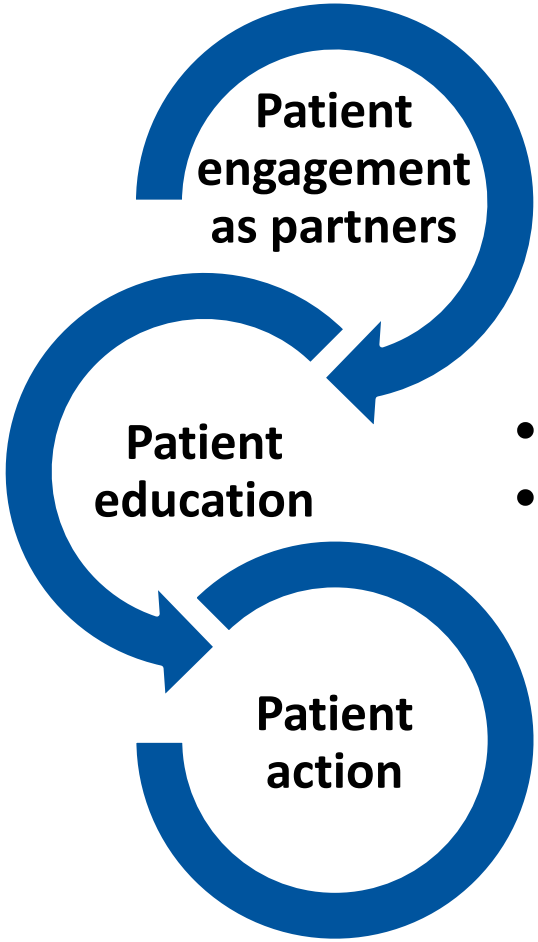
Facilities with BSI rates from the first and second quarter of 2016 that were above the Network average of 0.46 percent

63 facilities (20 percent of the Network 15 service area) with an in-center hemodialysis patient census ≥30

Facilities that received citations from the SA for infection prevention procedures in 2016

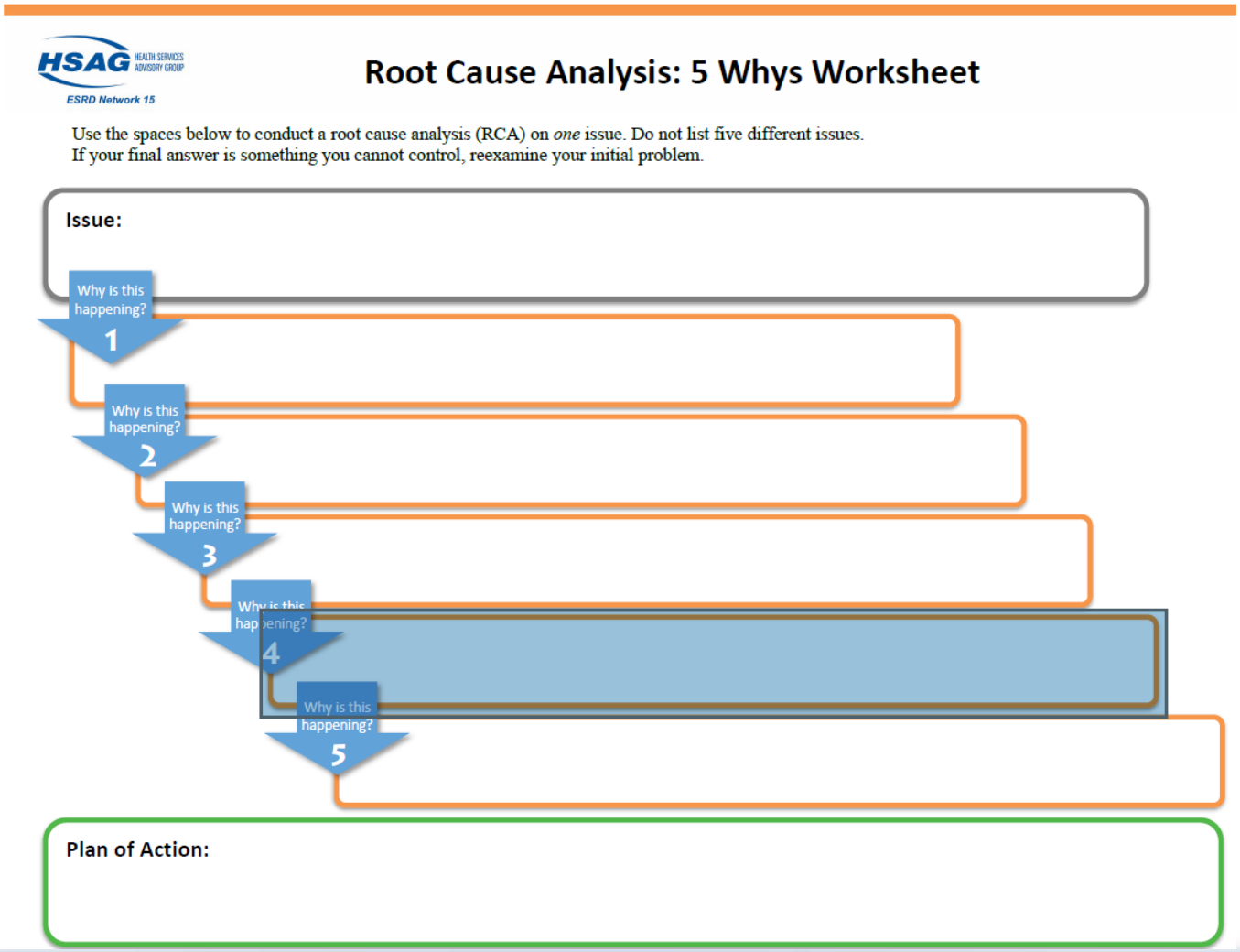
QIA Interventions

- Rapid Cycle Improvement
- Root Cause Analysis
- Plan-Do-Study-Act (PDSA) improvement model
- The BSI Prevention QIA Toolkit
- Staff education
- Use of CDC audit tools



- Patient Pledge
- Patient-Completed Hand Hygiene Audits

Root Cause Analysis



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Root Cause Analysis: 5 Whys Worksheet

Use the spaces below to conduct a root cause analysis (RCA) on *one* issue. Do not list five different issues.
If your final answer is something you cannot control, reexamine your initial problem.

Issue:

Why is this happening? 1

Why is this happening? 2

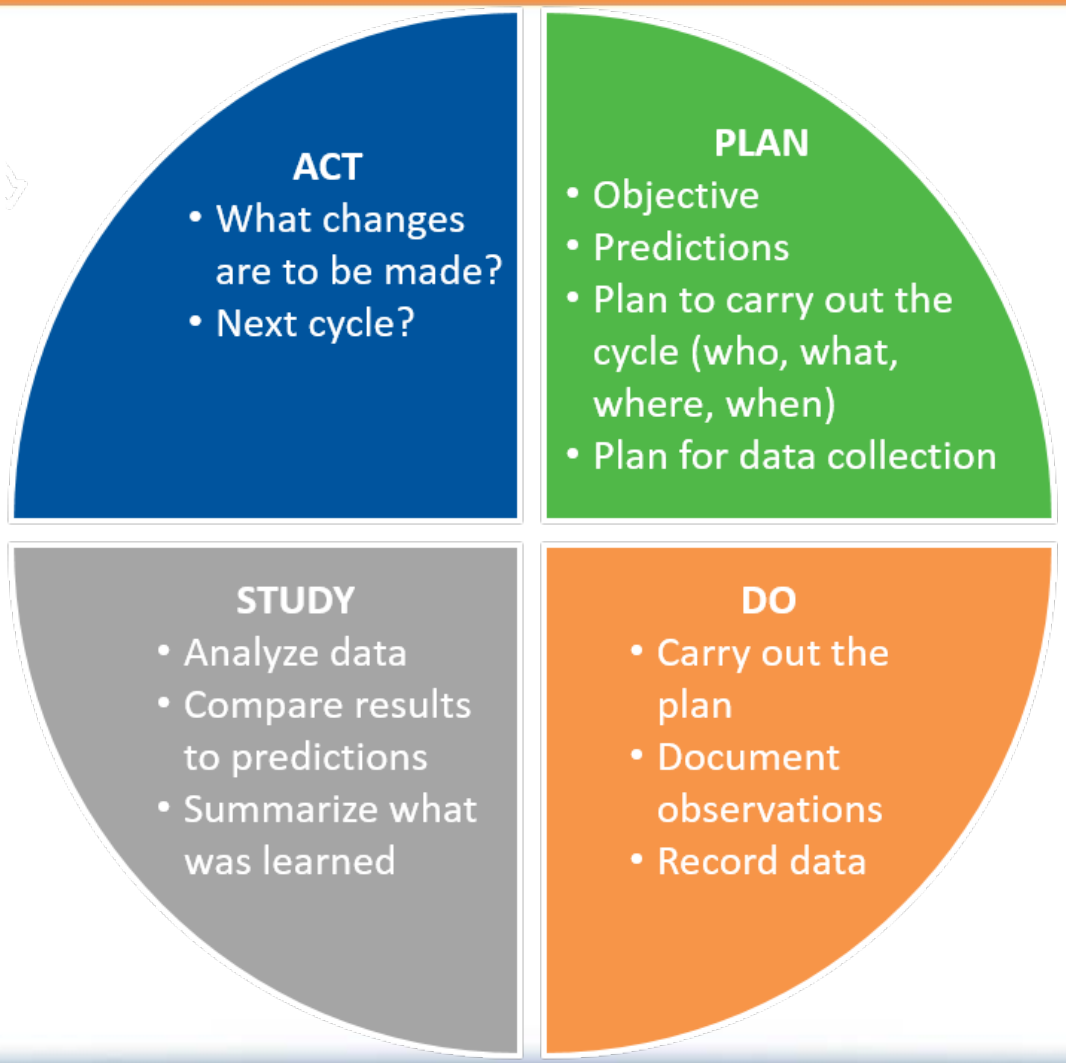
Why is this happening? 3

Why is this happening? 4

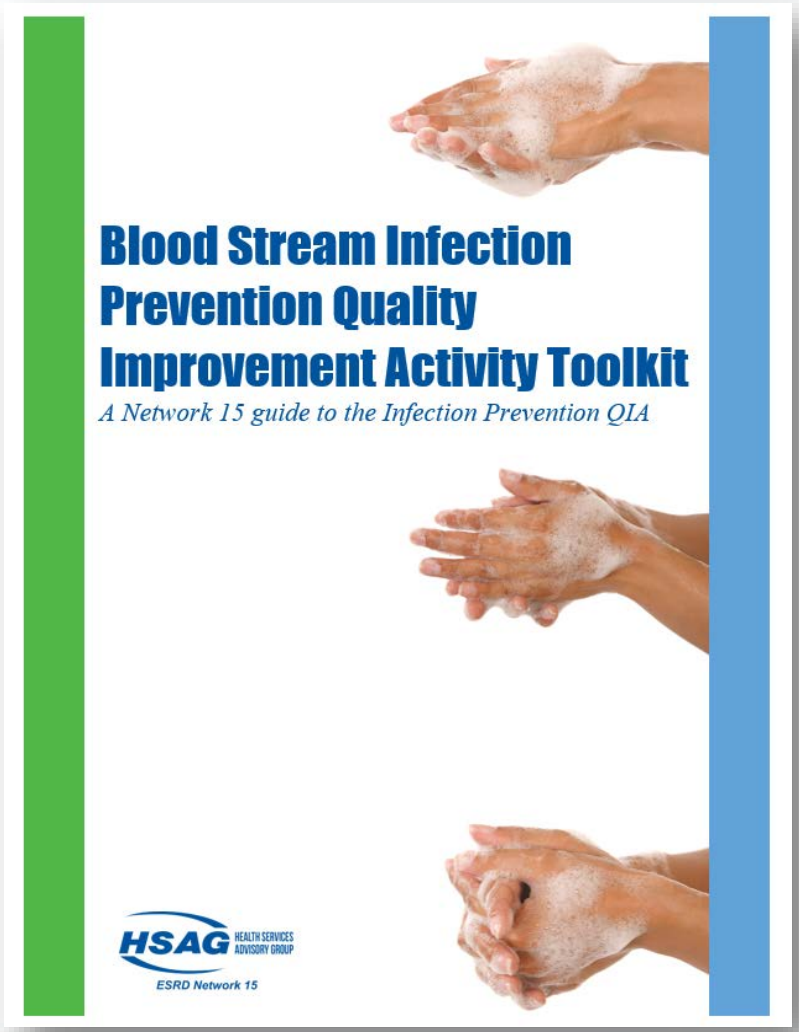
Why is this happening? 5

Plan of Action:

Implementation of the PDSA Model



2017 BSI QIA Toolkit



QIA Interventions: Staff Education

Patient care staff complete the one hour self-guided training course titled, *Infection Prevention in the Dialysis Setting*, available on the CDC website.	www.cdc.gov/dialysis/clinician/CE/infection-prevent-outpatient-hemo.html
All QIA facility NHSN users complete annual online NHSN Dialysis Event Surveillance Training.	http://nhsn.cdc.gov/nhsntraining/courses/C18
All facilities utilize the CDC Recommended Core Interventions for Dialysis BSI Prevention:	www.cdc.gov/dialysis/prevention-tools/core-interventions.html
Patients sign the Infection Prevention Pledge when education was complete.	

QIA Interventions: CDC Tools and Resources

QIA facilities complete monthly CDC audits:	• ≥ 13 hand hygiene observations • ≥ 7 catheter connection/disconnection observations • ≥ 7 fistula/graft cannulation observations
Locate the audit tools at:	www.cdc.gov/dialysis/prevention-tools/index.html
Best Practices Video: Covers hand hygiene, catheter connection/disconnection, and fistula/graft cannulation:	www.cdc.gov/dialysis/prevention-tools/training-video.html

CDC Core Interventions

CDC Approach to BSI Prevention in Dialysis Facilities

(i.e., the Core Interventions for Dialysis Bloodstream Infection (BSI) Prevention)

1. Surveillance and feedback using NHSN
Conduct monthly surveillance for BSIs and other dialysis events using CDC's National Healthcare Safety Network (NHSN). Calculate facility rates and compare to rates in other NHSN facilities. Actively share results with front-line clinical staff.

2. Hand hygiene observations
Perform observations of hand hygiene opportunities monthly and share results with clinical staff.

3. Catheter/vascular access care observations
Perform observations of vascular access care and catheter accessing quarterly. Assess staff adherence to aseptic technique when connecting and disconnecting catheters and during dressing changes. Share results with clinical staff.

4. Staff education and competency
Train staff on infection control topics, including access care and aseptic technique. Perform competency evaluation for skills such as catheter care and accessing every 6-12 months and upon hire.

5. Patient education/engagement
Provide standardized education to all patients on infection prevention topics including vascular access care, hand hygiene, risks related to catheter use, recognizing signs of infection, and instructions for access management when away from the dialysis unit.

6. Catheter reduction
Incorporate efforts (e.g., through patient education, vascular access coordinator) to reduce catheters by identifying and addressing barriers to permanent vascular access placement and catheter removal.

7. Chlorhexidine for skin antisepsis
Use an alcohol-based chlorhexidine (>0.5%) solution as the first line skin antiseptic agent for central line insertion and during dressing changes.*

8. Catheter hub disinfection
Scrub catheter hubs with an appropriate antiseptic after cap is removed and before accessing. Perform every time catheter is accessed or disconnected.**

9. Antimicrobial ointment
Apply antibiotic ointment or povidone-iodine ointment to catheter exit sites during dressing change.***

* Povidone-iodine (preferably with alcohol) or 70% alcohol are alternatives for patients with chlorhexidine intolerance.

** If closed needleless connector device is used, disinfect device per manufacturer's instructions.

*** See information on selecting an antimicrobial ointment for hemodialysis catheter exit sites on CDC's Dialysis Safety website (http://www.cdc.gov/dialysis/prevention-tools/core-interventions.html#sites). Use of chlorhexidine-impregnated sponge dressing might be an alternative.

For more information about the Core Interventions for Dialysis Bloodstream Infection (BSI) Prevention, please visit http://www.cdc.gov/dialysis

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

CDC

- Surveillance and feedback using NHSN
- Hand hygiene observations
- Catheter/vascular access care observations
- Staff education/competency
- Patient education/engagement
- Catheter reduction
- Chlorhexidine for skin antisepsis
- Catheter hub disinfection
- Antimicrobial ointment

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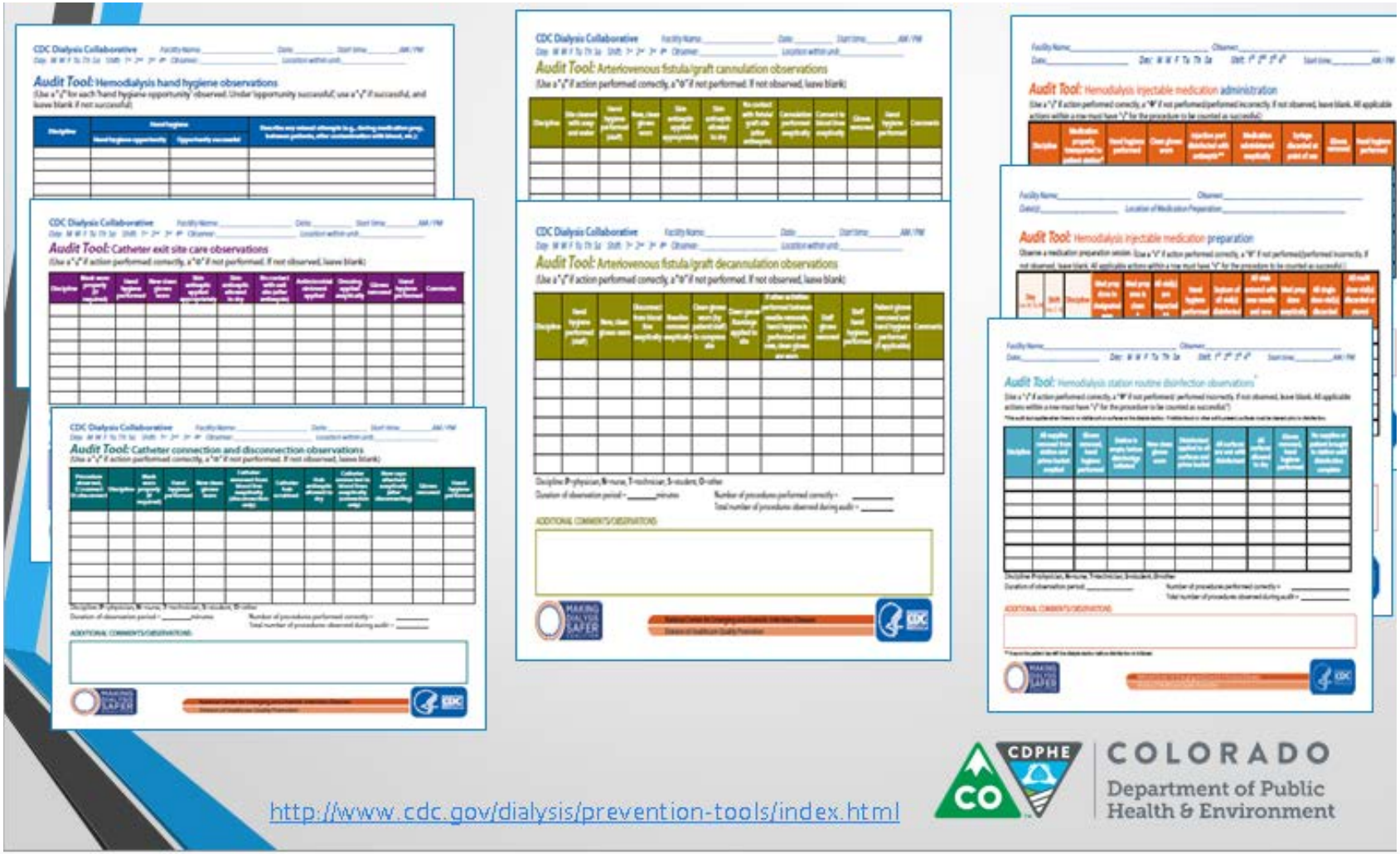
CDC Audit Tools



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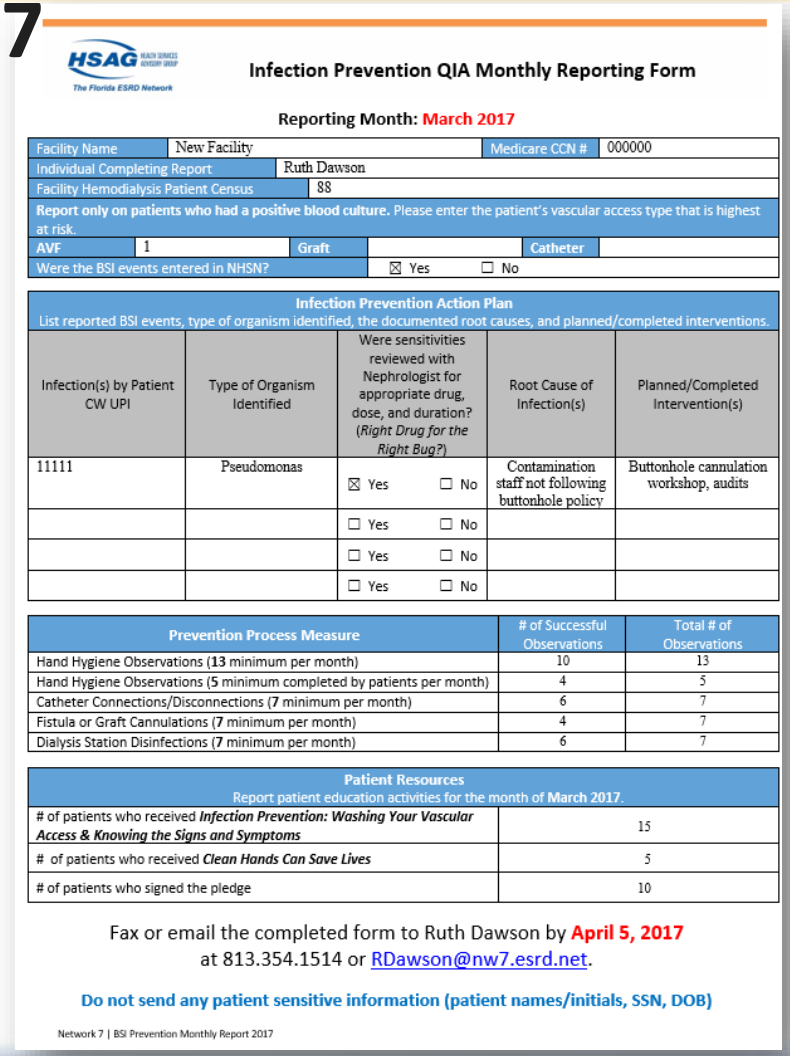
Monthly Reporting Forms

2017



HSAG — The Florida ESRD Network

Infection Prevention QIA Monthly Reporting Form

Reporting Month: March 2017

Facility Name	New Facility	Medicare CCN #	000000
Individual Completing Report	Ruth Dawson		
Facility Hemodialysis Patient Census	88		

Report only on patients who had a positive blood culture. Please enter the patient's vascular access type that is highest at risk.

AVF	1	Graft		Catheter	
Were the BSI events entered in NHSN?	☒ Yes ☐ No				

Infection Prevention Action Plan
List reported BSI events, type of organism identified, the documented root causes, and planned/completed interventions.

Infection(s) by Patient CW UPI	Type of Organism Identified	Were sensitivities reviewed with Nephrologist for appropriate drug, dose, and duration? (*Right Drug for the Right Bug?*)	Root Cause of Infection(s)	Planned/Completed Intervention(s)
11111	Pseudomonas	☒ Yes ☐ No	Contamination staff not following buttonhole policy	Buttonhole cannulation workshop, audits
		☐ Yes ☐ No		
		☐ Yes ☐ No		
		☐ Yes ☐ No		

Prevention Process Measure	# of Successful Observations	Total # of Observations
Hand Hygiene Observations (**13** minimum per month)	10	13
Hand Hygiene Observations (**5** minimum completed by patients per month)	4	5
Catheter Connections/Disconnections (**7** minimum per month)	6	7
Fistula or Graft Cannulations (**7** minimum per month)	4	7
Dialysis Station Disinfections (**7** minimum per month)	6	7

Patient Resources
Report patient education activities for the month of **March 2017**.

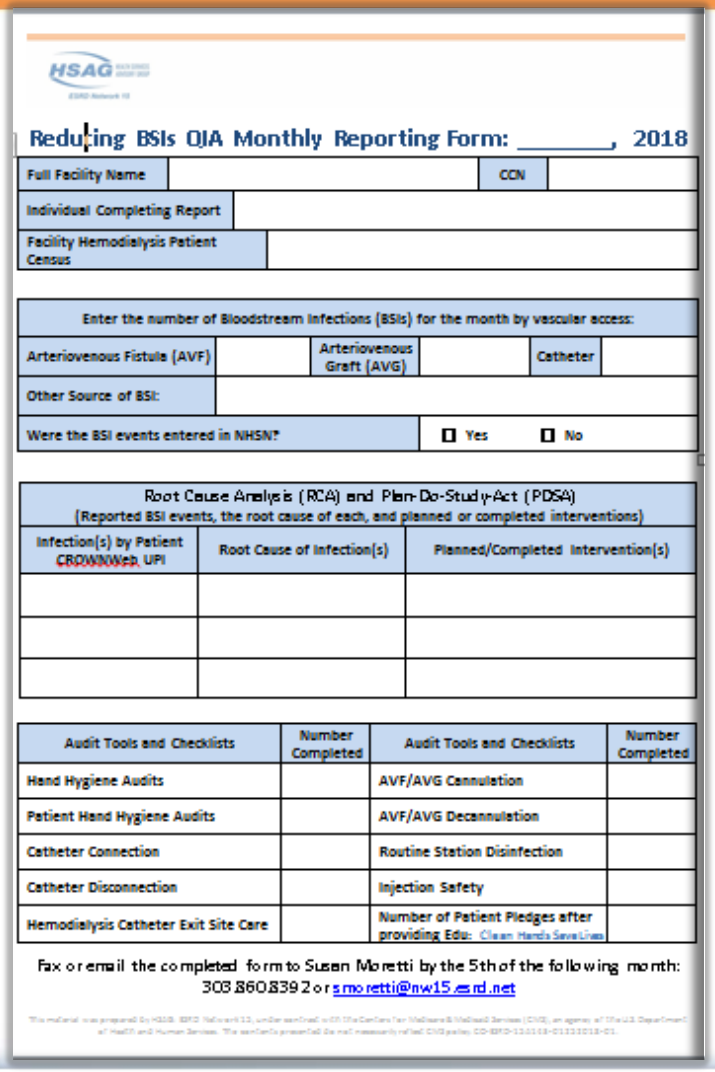
# of patients who received ***Infection Prevention: Washing Your Vascular Access & Knowing the Signs and Symptoms***	15
# of patients who received ***Clean Hands Can Save Lives***	5
# of patients who signed the pledge	10

Fax or email the completed form to Ruth Dawson by **April 5, 2017** at 813.354.1514 or RDawson@nw7.esrd.net.

Do not send any patient sensitive information (patient names/initials, SSN, DOB)

Network 7 | BSI Prevention Monthly Report 2017

2018



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Reducing BSIs QIA Monthly Reporting Form: _____, 2018

Full Facility Name		CCN	
Individual Completing Report			
Facility Hemodialysis Patient Census			

Enter the number of Bloodstream Infections (BSIs) for the month by vascular access:					
Arteriovenous Fistula (AVF)		Arteriovenous Graft (AVG)		Catheter	
Other Source of BSI:					
Were the BSI events entered in NHSN?	☐ Yes ☐ No				

Root Cause Analysis (RCA) and Plan-Do-Study-Act (PDSA)
(Reported BSI events, the root cause of each, and planned or completed interventions)

Infection(s) by Patient CROWNWeb UPI	Root Cause of Infection(s)	Planned/Completed Intervention(s)

Audit Tools and Checklists	Number Completed	Audit Tools and Checklists	Number Completed
Hand Hygiene Audits		AVF/AVG Cannulation	
Patient Hand Hygiene Audits		AVF/AVG Decannulation	
Catheter Connection		Routine Station Disinfection	
Catheter Disconnection		Injection Safety	
Hemodialysis Catheter Exit Site Care		Number of Patient Pledges after providing Edu: Clean Hands Save Lives	

Fax or email the completed form to Susan Moretti by the 5th of the following month:
303.860.8392 or smoretti@nw15.esrd.net

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QIA Interventions: Engaging Patients as Partners

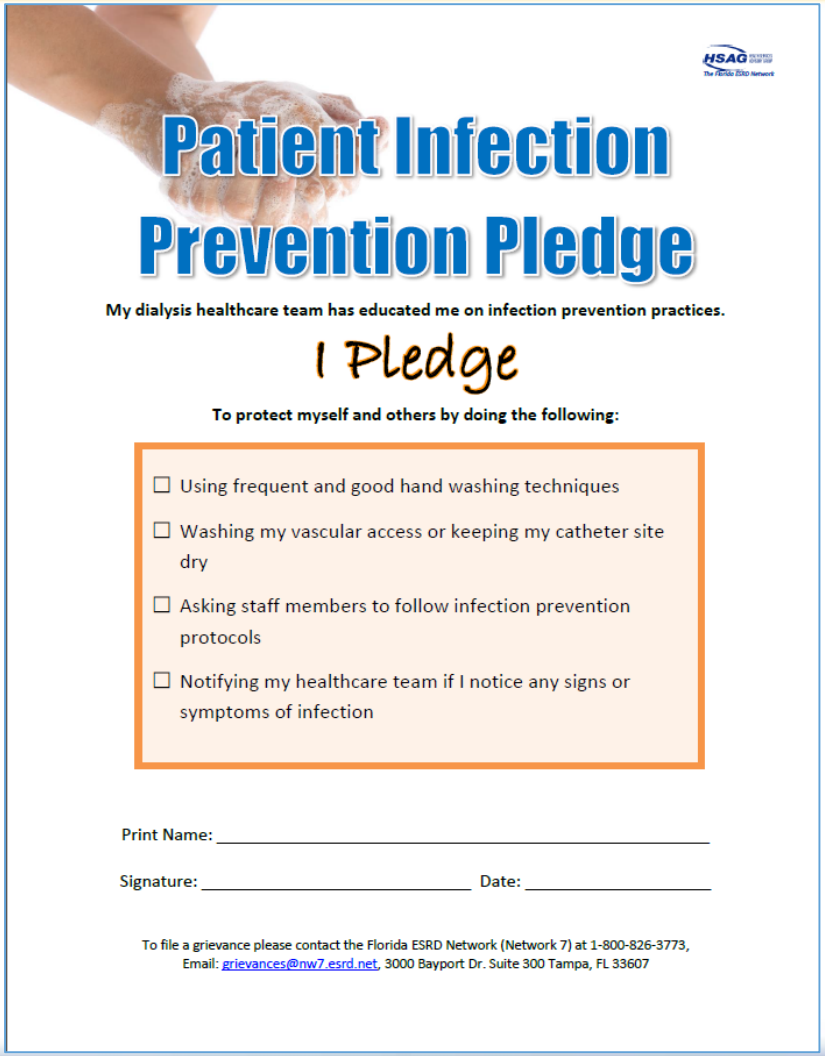
- *Clean Hands Can Save Lives*
  - Hand washing
  - Staff hand washing protocol
- *Washing Your Vascular Access & Knowing the Signs and Symptoms of Infection*
  - Washing the dialysis access prior to treatment
  - Signs and symptoms of infection
- Patients sign *Patient Infection Prevention Pledge*
- Encourage five *hand hygiene audits* to be completed by a patient every month

Making Dialysis Safer for Patients Coalition

Hang in an area visible to both patients and staff

Keep the poster up-to-date

QIA Patient Education and Involvement



Patient Infection Prevention Pledge

My dialysis healthcare team has educated me on infection prevention practices.

I Pledge

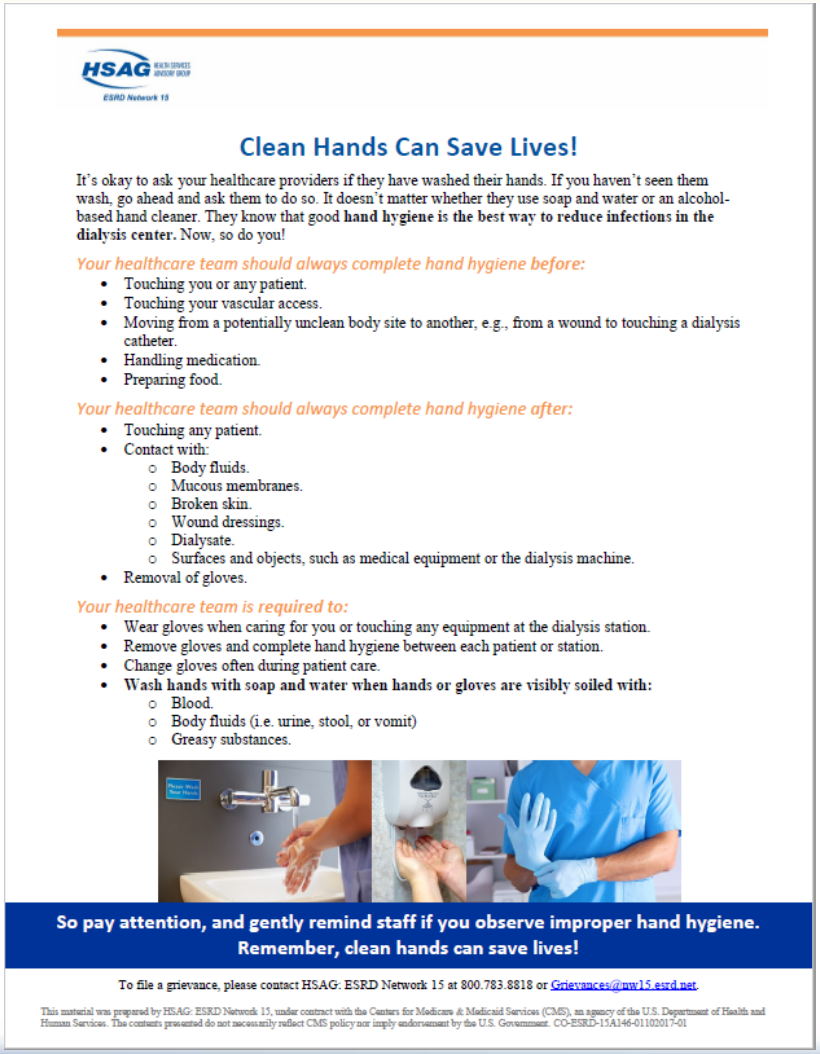
To protect myself and others by doing the following:

- ☐ Using frequent and good hand washing techniques
- ☐ Washing my vascular access or keeping my catheter site dry
- ☐ Asking staff members to follow infection prevention protocols
- ☐ Notifying my healthcare team if I notice any signs or symptoms of infection

Print Name: _____

Signature: _____ Date: _____

To file a grievance please contact the Florida ESRD Network (Network 7) at 1-800-826-3773, Email: grievances@nw7.esrd.net, 3000 Bayport Dr. Suite 300 Tampa, FL 33607



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Clean Hands Can Save Lives!

It's okay to ask your healthcare providers if they have washed their hands. If you haven't seen them wash, go ahead and ask them to do so. It doesn't matter whether they use soap and water or an alcohol-based hand cleaner. They know that good **hand hygiene is the best way to reduce infections in the dialysis center.** Now, so do you!

Your healthcare team should always complete hand hygiene before:

- Touching you or any patient.
- Touching your vascular access.
- Moving from a potentially unclean body site to another, e.g., from a wound to touching a dialysis catheter.
- Handling medication.
- Preparing food.

Your healthcare team should always complete hand hygiene after:

- Touching any patient.
- Contact with:
  - Body fluids.
  - Mucous membranes.
  - Broken skin.
  - Wound dressings.
  - Dialysate.
  - Surfaces and objects, such as medical equipment or the dialysis machine.
- Removal of gloves.

Your healthcare team is required to:

- Wear gloves when caring for you or touching any equipment at the dialysis station.
- Remove gloves and complete hand hygiene between each patient or station.
- Change gloves often during patient care.
- **Wash hands with soap and water when hands or gloves are visibly soiled with:**
  - Blood.
  - Body fluids (i.e. urine, stool, or vomit)
  - Greasy substances.

So pay attention, and gently remind staff if you observe improper hand hygiene. Remember, clean hands can save lives!

To file a grievance, please contact HSAG: ESRD Network 15 at 800.783.8818 or Grievances@nw15.esrd.net.

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2018 Patient Resource: Sepsis Zone Tool

My Plan to Identify Infection and/or Sepsis

Name _____ Date _____

Green Zone: No Signs of Infection

- ✓ My heartbeat and breathing feel normal for me.
- ✓ I don't have chills or feel cold.
- ✓ My energy level is normal.
- ✓ I can think clearly.
- ✓ Any wound or IV site I have is healing well.

Green Means I Should:

- ✓ Watch every day for signs of infection.
- ✓ Continue to take my medicine as ordered, especially if I'm recovering from an infection or illness.
- ✓ Keep my doctor and other appointments.
- ✓ Follow instructions if I'm caring for a wound or IV site.
- ✓ Wash my hands and avoid anyone who is ill.

Yellow Zone: Caution

- ✓ My heartbeat feels faster than usual.
- ✓ My breathing is fast, or I'm coughing.
- ✓ I have a fever between 100.0°F and 101.4°F.
- ✓ I feel cold and am shivering—I can't get warm.
- ✓ My thinking is slow—my head is "fuzzy."
- ✓ I don't feel well—I'm too tired to do things.
- ✓ I haven't urinated in 5 hours or it's painful or burning when I do.
- ✓ Any wound or IV site I have looks different.

Yellow Means I Should:

- ✓ Contact my doctor, especially if I've recently been ill or had surgery.
- ✓ Ask if I might have an infection or sepsis.

Physician Contact:

Doctor: _____

Phone: _____

Red Zone: Medical Alert!

- ✓ I feel sick, very tired, weak, and achy.
- ✓ My heartbeat or breathing is very fast.
- ✓ My temperature is 101.5°F or greater.
- ✓ My temperature is below 96.8°F.
- ✓ My fingernails are pale or blue.
- ✓ People say I'm not making sense.
- ✓ My wound or IV site is painful, red, smells, or has pus.

Red Means I Must:

- ✓ ***Act fast ... Sepsis is serious!***
- ✓ **Call 9-1-1** and say, "I need to be evaluated immediately. I'm concerned about sepsis."

Journal of the American Medical Association (JAMA) Network. JAMA Patient Page: Sepsis. October 2010. Available at: https://jamanetwork.com/journals/jama/fullarticle/186795. Accessed on June 8, 2018.
Centers for Disease Control and Prevention. Sepsis. Basic Information. How Can I Get Ahead of Sepsis? Available at: https://www.cdc.gov/sepsis/basic/index.html. Accessed on June 8, 2018.
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This material was prepared by Health Services Advisory Group, Inc., the Quality Improvement Organization for Arizona, California, Florida, Ohio, and the U.S. Virgin Islands, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. Publication No. QN-11SOW-C.3-06062018-01

Quality Improvement Organizations

HSAG

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2018 Caring for Your Catheter Tri-fold

Caring for Your Dialysis Catheter

New Catheters
(Within Three to Five Days of Placement.)

- **Do not** remove the dressing.
- **Do not** shower or get the catheter wet.
- Only healthcare professionals should touch the dressing or catheter device

Ongoing Care of Catheters

- **Do not** pull, bend, poke, or pinch the catheter
- **Do not** remove the dressing.
- **Do not** take the caps off.
- **Do not** use sharp objects around the catheter (scissors and knives)
- **Do not** let pets and small children near the catheter service area.
- **Do not** get the catheter wet.
  - Avoid the shower.
  - When bathing or coming in contact with water, cover with plastic wrap and tape to create a strong seal.
  - Do not submerge in water (swimming pools, hot tubs) until the catheter is removed and the skin has healed.
- ***Do not ever*** inject anything into the catheter/catheter tubing.
  - It is for dialysis only. This could be fatal.
- **Don not** touch the open end of the catheter when the caps have been removed by a nurse or dialysis technician.

IMPORTANT!

If Your Catheter Dressing Gets Wet, Loose, or Soiled

Keep an Emergency Kit:

- Clean gloves (several pairs)
- Large individually wrapped alcohol wipes
- A transparent dressing, individually packaged sterile gauze and/or large bandage (individually wrapped)
- A roll of medical tape (silk, paper, or transparent)
- Other supplies as needed:

Before touching the dressing, **wash your hands** for 15 seconds with liquid antibacterial soap. Dry thoroughly using paper towels. If the problem is just a partially loose dressing, ***do not remove it.*** Place a large bandage or sterile gauze over a loosened dressing. Secure with tape.

If your dressing is wet, dirty, or is coming off, carefully remove it and*:

1. Clean the area in question with alcohol wipes.
   a) Cleanse vigorously, in sections 4 x 5 inches in size, for 30 seconds using an up-and-down or side-to-side motion.
2. Allow the area to dry for 30 seconds.
3. Inspect the area around the site for any sign of infection (redness, swelling, drainage, tenderness, warmth, or odor).
4. Check the entire chest area for new or prominent veins, rash, change in color, or swelling.
5. Cover the site with large bandage or sterile gauze and secure with tape as needed.
6. Tape the catheter tubing to your skin to prevent the catheter from dangling or catching on loose clothing
7. Go to your dialysis center as soon as possible.

Call the doctor's office if you see any sign of infection. Also report dry skin, rash, or irritation at the site.

Note: There may be some oozing of blood from the site for several days after CVC placement. If there is a lot of blood, or if the site keeps bleeding, call the doctor.

**If alternate instructions have been provided for your particular catheter, refer to those directions and instructions.*

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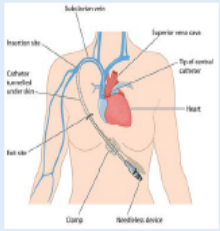
Your CVC: What You Need to Know



What Are the Facts?

- Your dialysis central venous catheter (CVC) tip sits inside the heart chamber.
- CVCs are the last choice access for hemodialysis patients:
- CVCs are highly susceptible to infections.
- CVC dressings must stay clean and dry, so you will want to avoid showers, swimming pools, and excessive sweating.
- A CVC put you at higher risk for an emergency situation (CVC displacement and clots in your blood vessels).
- CVCs require management. They must be changed out on a regular basis if a permanent access is not placed.
- CVCs place restrictions on regular daily activities.

Always be aware of the condition of your catheter site and the dressing covering it. Sometimes, things don't go as planned and when that happens, we want you to feel prepared to manage the situation until you can get to your dialysis center.

Signs of Catheter Problems

Signs of a catheter infection and other catheter problems are similar for all types of CVCs. If you have any signs of infection or catheter problems, **call your doctor and seek medical attention immediately.**

Signs of infection, clotting, or other problems include:

- Redness, tenderness, drainage, warmth, or odor around the catheter site.
- Fever of 100.5F (38 C) or greater, or chills.
- Swelling of the face, neck, chest, or arm on the side where your catheter is inserted.
- Leakage of blood or fluid at the catheter site or the cap.
- Displacement or lengthening of the catheter (cuff exposure).

Your Dialysis Clinic:_____

Clinic Phone Number:_____

Problem Solving for CVCs

Emergency	Response
Sudden chest, neck, or shoulder pain, coughing, or difficulty breathing	Make sure the CVC is clamped. Lie on your left side with your head down. Stay in this position while your caregiver calls 911.
Accidental removal of the CVC from the chest	Apply pressure to the exit site and chest area above it with a gauze dressing or clean washcloth and seek medical attention immediately. If possible, notify your dialysis facility so the doctor can assist in making arrangements to have another CVC placed prior to your next dialysis
Accidental removal of injection cap	Notify your dialysis facility, they may need you to return to the facility to replace the end cap that is missing. Until then, wrap the end of the lumen with sterile gauze and secure with tape to keep the exposed tubing clean
Swelling of face, neck, chest, or arm. New or prominent chest veins.	Call the doctor's office/dialysis facility (number written below) or go to the nearest emergency department for evaluation.
Drainage, redness, swelling, or bleeding at the exit site	Call the nephrologist (kidney doctor) or the dialysis facility for instructions on where to go for evaluation.
Fever of 100.5F. (38C) or greater and/or chills	Call the nephrologist/family doctor to be revaluated OR go to the nearest emergency department if fever is accompanied by other symptoms of infection such as chills, red streak on or near the catheter site, foul smelling drainage, and unusual discharge from the exit site, weakness, or delusions.

More Important Things to Remember

- To prevent infection, **do not try to handle your catheter or change the dressing** unless it becomes loose, wet, or dirty.
  - Your dialysis staff will be changing your catheter dressing at every dialysis treatment.
- Your catheter should **not** be used by other medical personnel or for treatments other than dialysis.
  - Healthcare personnel outside of dialysis must first contact your dialysis facility or your kidney doctor (nephrologist) before using your dialysis catheter.
- **Wash your hands** to prevent infection.
  - Wash frequently for 15 seconds, using liquid antibacterial soap and paper towels to dry your hands.
  - Wash before and after dialysis and periodically throughout the day after being exposed to people, objects, and surfaces.
  - Make sure healthcare professionals providing you care wash as well.
- **Live your best life possible! Make getting a permanent access for dialysis a priority.**
  - Talk to your nephrologist or your dialysis center staff about getting a permanent access right away.
  - Find more information about permanent vascular access at https://www.hsag.com/en/esrd-networks/esrd-network-15/for-patients-and-families/vascular-access/vascular-access/.

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Training, Tools, and Resources from the Agency for Healthcare Research and Quality (AHRQ) and the CDC

- Catheter Scrub-the-Hub Protocol: Key steps in catheter connection/disconnection
  www.cdc.gov/dialysis/PDFs/collaborative/Hemodialysis-Central-Venous-Catheter-STH-Protocol.pdf
- Days Since Last Bloodstream Infection poster:
  https://www.cdc.gov/dialysis/coalition/resource.html
- Checklist Tools
  www.cdc.gov/dialysis/prevention-tools/index.html
- Hand Hygiene Observation Protocol
  www.cdc.gov/dialysis/prevention-tools/Protocol-hand-hygiene-glove-observations.html
- AHRQ CUSP Toolkit
  www.ahrq.gov/professionals/education/curriculum-tools/cusptoolkit/index.html

QIA Best Practices

Include all staff members in monthly audit completion to improve infection control practices.

Conduct targeted auditing during turnover to identify the need to adjust patient schedules to allow for proper infection control techniques.

Identify staff in need of additional education on cannulation infection control procedures.

Conduct infection control-specific staff meetings and in-services to focus staff on following protocols.

QIA Best Practices (cont.)

Prompt physicians and nurse practitioners to practice hand hygiene between patients when rounding.

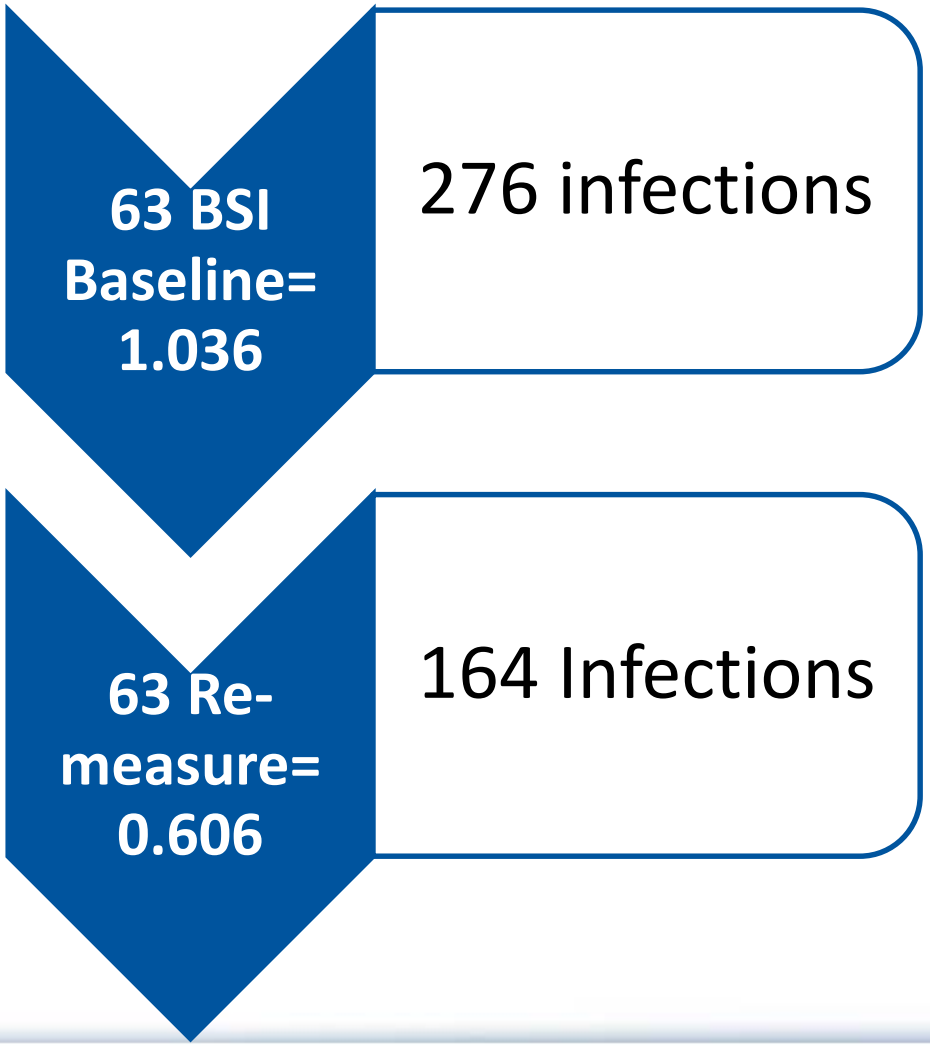
Identify and correct improper mask placement during catheter care.

Include patients in hand hygiene audits to encourage more patient participation and better staff-to-patient communication regarding infection control protocols.

Engage patients through use of Network educational materials to support infection prevention interventions by staff.

Conduct infection control lobby days targeting hand hygiene, vascular access care, and CVC reduction to foster patient and family/caregiver awareness of infection control practices.

2017 QIA Results



Sustainment

A 2016 CDC study showed that:

- Decreases to certain BSI rates can be maintained through use and implementation of CDC dialysis BSI prevention tools.
- A reduction in infection rates is both achievable and sustainable **up to four years** following adoption of the CDC Core Interventions[1].
- Long term outcomes will be sustained by working with facilities to better understand and implement the PDSA cycle, which will in turn support ongoing process improvement and improve infection control.

[1]Sustained Infection Reduction in Outpatient Hemodialysis Centers Participating in a Collaborative Bloodstream Infection Prevention Effort Infection Control & Hospital Epidemiology/ FirstView Article/ February 2016, pp 1-4

Network 15
2016–2017 Decrease in Hospital Utilization

Quality Improvement Activity

US Renal Data System Statistics

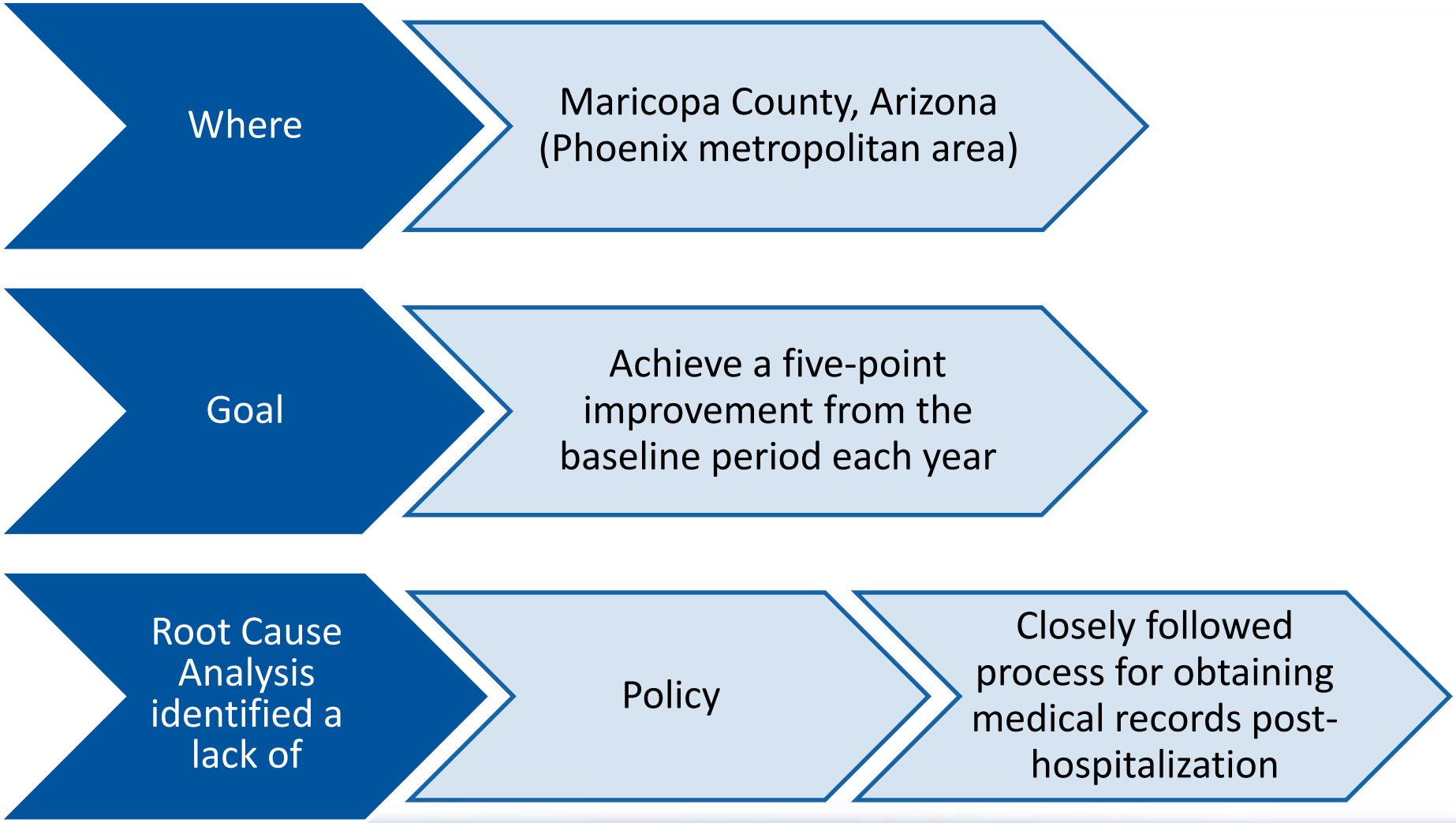
On average, ESRD patients are admitted to the hospital nearly twice a year.

Patients with ESRD show an overall re-hospitalization rate of 34 percent within 30 days of discharge.

2013—2014 chronic kidney disease (CKD) and ESRD re-hospitalization rates of 21.4 percent and 34.6 percent compared to 15.3 percent Medicare beneficiaries with no diagnosis of kidney disease.

The high rate of hospital readmission brought dialysis population into the consideration for a quality metric of the Quality Improvement Program (QIP).

Hospitalizations QIA 2017



Strategy

Prior to a patient's first dialysis back from the hospital, staff would

- Review the patient's hospital records
- Meet with the patient to discuss the discharge experience and the patient's understanding of post-discharge needs

Interventions

Role Play with
Sit Down and Round

- Correct vs. incorrect way to conduct post-hospital interview
- Conduct "sit-downs" with patients at the first treatment after hospitalization
- ***Questions About You*** interview tool

Questions About You

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Patient Name: _____
CROWNWeb UPI: _____
Staff Name and Title: _____
Date and Time: _____

Reducing Hospitalizations of Your Patients: Questions About You

Why were you in the hospital?

Based on the specific reason for your hospitalization, do you feel your health problem is resolved or stabilized?

What is the most overwhelming part of being out of the hospital (if any)?

Are you anxious/nervous about needing to go back to the hospital for the same reason? If so, what makes you think you might need to? What would make you feel less nervous (if anything)?

Did you receive any paperwork from the hospital when you were discharged? Is there anything in the paperwork that you don't understand?

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Did you get a new/different medication and/or dosage when you were discharged?

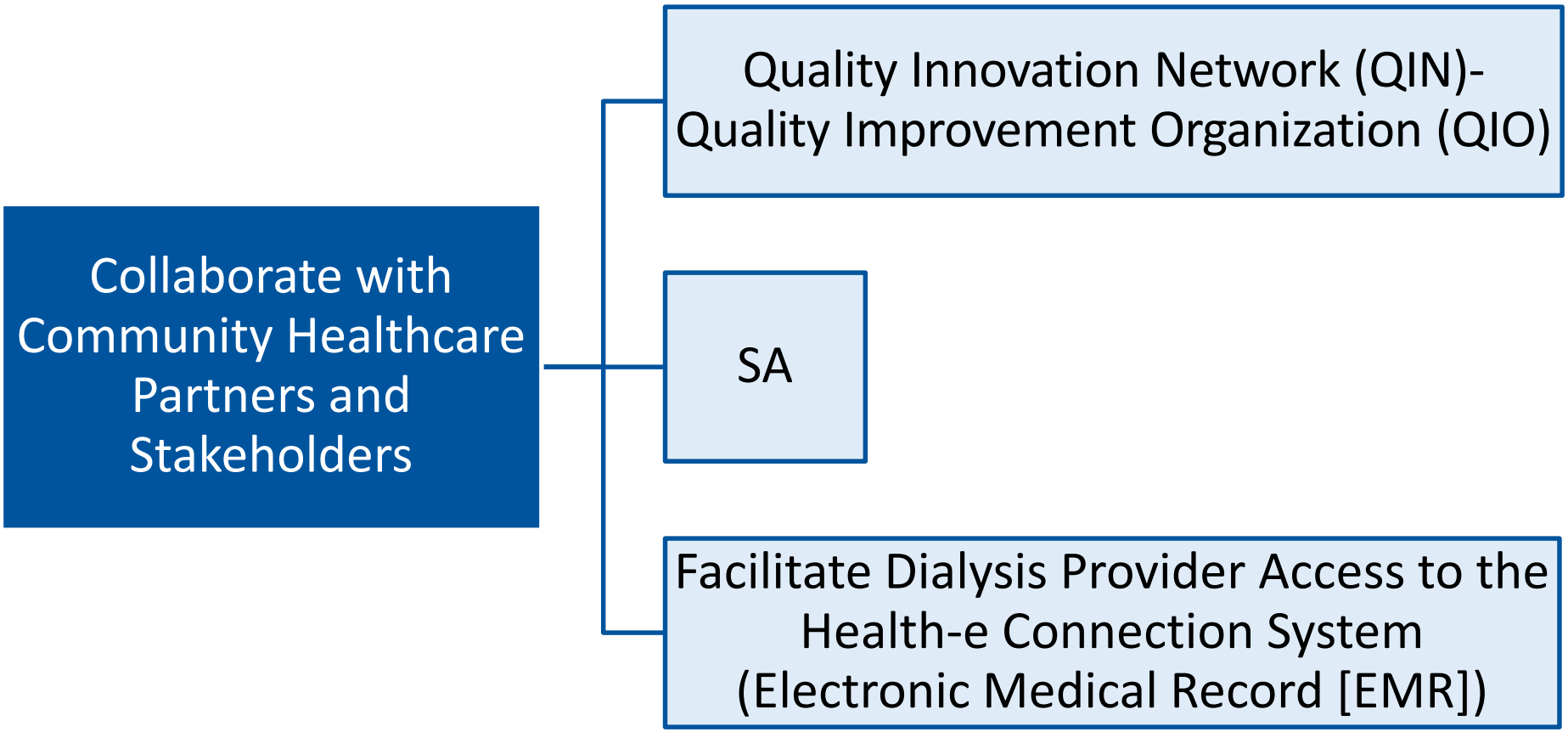
Have you picked up your new medication?

Do you have follow-up appointments with doctors scheduled? Do you know who to call or how to make those appointments?

Is anyone checking on you at your home?

Everyone wants you to feel as good and as healthy as possible. What is something that you would like to be able to do over the next month (walk better, feel stronger, have less pain, get to the cardiologist, go see a grandchild)? Is there anything that you need from someone here to be able to make that happen?

Interventions (cont.)



Communication Tool

HSAG ESRD Network 15

Sit Down for Patient Rounds

Tips for Improving Patient Engagement

We aren't telling you how to do your job *BUT* we are going to tell you **where** you should be when you do it—You need to **be sitting down** on the job. Starting now, sit down when you round on your patients.

According to a study done by the University of Kansas (UK)*, staff (doctors) were perceived to spend more time with patients when they sat with them during a visit, rather than standing. The patients perceived that they were seen for up to 40 percent more time than was actually spent with them.

Patients in this study also stated that they were more satisfied with their care, they had a better rapport**, and a better understanding** of their condition when the provider (physician) was sitting with them during the visit.

In the hospital setting, sitting rather than standing, has been shown to lead to decreased length of stay, decreased costs, and improved clinical outcomes.

We know that you're busy, have a million things to do, and a lot of patients to see. We just ask that **when you round ... sit down!** It can make a difference in your interactions with patients.

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Interventions (cont.)

- Utilized a patient engagement tool
  - *We're Not Being Nosey—We Care*
  - Developed to avoid near miss events and preventable hospitalizations
  - Available in English and Spanish
- Site-visits to facilities to interview recently hospitalized patients
- Reached out to Partner with *Concillo Latino de Salud*
- Various providers shared best practices, 24-hour records assistance provided

Staff-Patient Interaction at Dialysis

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ESRD Network 15

We're Not Being Nosy – We Care!

In order to provide you with the best care we need to know certain things that are happening in your life.

Take note of the items below and be sure to alert your care team if:

- You have been in the **hospital**
- You have been to the **emergency room**
- You have been to a **specialty doctor**
- You have **started** a new **medication**(s) for any reason
- You have **stopped** a **medication**(s) for any reason
- You felt like going to the **emergency** room but didn't go
- You were seen by an **urgent care** center
- You experienced any **bleeding** for any longer than 10 minutes from anywhere (like a cut, nosebleed, or bleeding gums)
- You have any new access **pain**, **changes**, or **problems**

Patient and Family Engagement

- Conducted medication reconciliation with patients
- Asked patients what they understood from their hospitalization
- Asked about beliefs on getting out too soon/going back to the hospital
  - Resolution of illness
- Involved patients' families/support following a hospitalization
- Asked patients to identify a goal in any area of life

Results

Disparate Population

Rates decreased from 61.40% to 6.70%

Baseline to July 2017

Non-Disparate Population

Rates decreased from 51.80% to 11.90%

Baseline to July 2017

Promising Practices

What didn't Work

- Implementation prior to leadership buy-in
- Utilizing tools without asking staff to be accountable for the information gathered
- Working with staff who missed the explanation of the project goal

What Worked

- Completing timely review of hospital records lead to accurate knowledge of patient's current condition and medically appropriate follow-up
- Promoting staff and patient interaction upon the first treatment back
- Gathering information from patient interviews
- Incorporating processes into existing daily routines "working smarter not harder"

Overview of NHSN Dialysis Reports

Infection Prevention and Monitoring in the Dialysis Setting

NHSN Data Accuracy

- ESRD QIP clinical measure
- Criteria for NHSN data submission not the same as CROWNWeb
- Review Dialysis Event Protocol
- Utilize NHSN output options reports to ensure accurate reporting
- Network conducts quarterly NHSN data quality checks

NHSN Healthcare Personnel Safety Component

- Is included in the ESRD QIP—Payment Year (PY) 2018 Reporting Measure.
- Requires that all facilities must report Healthcare Personnel Influenza Vaccination summary data to NHSN.
- October through March, covering the entire influenza season.
- Printable NHSN Summary Reports

NHSN Data Quality Resources

Dialysis Event Protocol

Find a PDF of the CDC's Dialysis Event Protocol here:

www.cdc.gov/nhsn/pdfs/pscmanual/8pscdialysiseventcurrent.pdf

NHSN Line Listing Report

CMS Certification Number	Summary Year/Month	Report No Dialysis Events (0 events)	Report No IV Antimicrobial Starts (0 events)	Report No Positive Blood Cultures (0 events)	Report No Pus, Redness, Swelling (0 events)	Number of Patients: AV Fistula	Number of Buttonhole Patients	Number of Patients: AV Graft	Number of Patients: Other Access Device	Number of Patients: Tunneled Central Line	Number of Patients: Nontunneled Central Line	Patient-months	Number of Patients: Dialyzers Reused	Number of Patients: Fistulas and Grafts	Number of Patients: All Central Lines
30022	2018M04	Y	Y	Y	Y	43	0	7	0	8	0	58	0	50	8
30022	2018M05	N	N	Y	Y	41	0	7	0	10	0	58	0	48	10
30022	2018M06	Y	Y	Y	Y	43	0	7	0	8	0	58	0	50	8
31308	2018M04	Y	Y	Y	Y	116	2	9	0	10	0	135	0	125	10
31308	2018M05	N	N	Y	N	112	2	9	0	13	0	134	0	121	13
31308	2018M06	N	N	Y	N	114	2	9	0	13	0	136	0	123	13
32500	2018M05					42	6	16	0	15	0	73	0	58	15
32500	2018M04	N	N	N	Y	45	6	16	1	11	0	73	0	61	11
32501	2018M05					94	0	13	0	29	0	136	0	107	29
32501	2018M04	N	N	Y	Y	94	0	11	0	26	0	131	0	105	26
32502	2018M06	N		N		102	0	31	55	37	0	225	0	133	37
32502	2018M04	N	N	N	N	104	0	28	0	43	0	175	0	132	43

NHSN QIP Report

Facility Org ID	CMS Certification Number	Summary Year/Month	DE on Reporting Plan	Dialysis Event Numerator Reported	Dialysis Event Denominator Reported	Criteria Met this Month
15577	62533	2018M05	Y	N	Y	N
15577	62533	2018M06	Y	N	N	N
15577	62533	2018M04	Y	N	N	N

NHSN TIP SHEET

NHSN Reporting Instructions:

- Complete the **Outpatient Dialysis Center Practices Survey** each February.
- Complete your monthly reporting plan each month.
  - Under **[Events]**, select the **[DE]** checkbox for **[Outpatient Hemodialysis Clinic]** location.
  - **DO NOT** select **[No NHSN Reporting this Month]**.
    - This indicates the facility did not follow any NHSN Dialysis Component surveillance protocols (e.g., the facility was closed that month).
- Report **denominator data** monthly.
  - Report the number of patients, by vascular access type, used to estimate the number of patient-months considered at risk for events.
    - If there are multiple vascular accesses, report only the vascular access with the highest risk of infection.
      (**Note:** This might not be the vascular access currently in use for dialysis.)
  - Report the number of outpatients with each vascular access type who received dialysis during the first two working days of the month.
- Report **numerator data** monthly.
  - Any patient who receives outpatient dialysis at your facility is monitored for dialysis events and categorized by the type of event.

HSAG ESRD Network 15
3025 South Parker Road, #820
Aurora, CO 80014

TIP SHEET: Reporting to NHSN

Important Facts to Remember When Reporting to the National Healthcare Safety Network (NHSN)

All facilities are required to report data according to the Dialysis Event Surveillance Protocol, to ensure data is uniformly reported across participating facilities. Report available data to NHSN within 30 to 60 days of the end of the month for which the information was collected. If additional data becomes available after that period, users are expected to report the additional information retrospectively to ensure NHSN data are complete and accurate. This may involve reporting additional dialysis events and/or editing existing event records.

www.cdc.gov/nhsn/dialysis/dialysis-event.html

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Network 15 Toll-Free 800.783.8818

Dialysis Event Surveillance

Infection Prevention Tools

Patients who undergo dialysis treatment have an increased risk for getting healthcare-associated infections (HAIs). It is important for hemodialysis healthcare workers to understand and follow the basics of infection control as a routine part of their practice to prevent HAIs. The Centers for Disease Control and Prevention (CDC) has infection prevention tools intended specifically for dialysis centers.

Core Interventions

These core interventions have been proven to reduce for Dialysis Bloodstream Infections
www.cdc.gov/dialysis/prevention-tools/core-interventions.html

Scrub the Hub Protocol

This protocol outlines a suggested approach to preparing catheter hubs to accessing the catheter for hemodialysis
www.cdc.gov/dialysis/PDFs/collaborative/Hemodialysis-Central-Venous-Catheter-STH-Protocol.pdf

Audit Tools and Checklists

These tools and checklist are intended to promote CDC-recommended infection control practices and can be used by individuals when assessing staff practices
www.cdc.gov/dialysis/prevention-tools/audit-tools.html

Infection Control Assessment Tools

These tools are designed to prevent the spread of infection in healthcare settings
www.cdc.gov/hai/prevent/infection-control-assessment-tools.html

Clinical Education

These resources help dialysis clinicians to understand the basics of infection control
www.cdc.gov/hai/prevent/prevention.html

CMS Requirements for Hemodialysis Outpatients

Dialysis Event Surveillance 2016

- Required annually for all users participating in Dialysis Event Surveillance
- Include transient patients
- Include peritoneal dialysis or transplant patients undergoing temporary hemodialysis

Event Definitions and Key Terms

Dialysis Event: Three types of dialysis events are reported by users: IV antimicrobial start; positive blood culture; and pus, redness, or increased swelling at the vascular access site.

21-Day Rule: An event reporting rule which reduces reporting of events that are likely to be related to the same patient problem. The rule is that 21 or more days must exist between two dialysis events of the *same* type for the second occurrence to be reported as a separate dialysis event. If fewer than 21 days have passed since the last reported event of the same type, it is NOT considered a new dialysis event and therefore, not reported.

Positive Blood Culture (PBC): All positive blood cultures from specimens collected as an outpatient, collected within one calendar day after a hospital admission, including positive blood cultures collected on the day of or the day following admission to the hospital.

PBCs and Their Sources

Note: PBCs should *always* be reported regardless of whether a true infection is suspected or whether the infection is thought to be related to hemodialysis.

When reporting PBCs, you must indicate **one of four suspected sources**:

1. **Vascular access:**
   Used if there is objective evidence of vascular access infection and the vascular access is thought to be the source of the PBC.
2. **Source other than the vascular access:**
   Used if either a culture from another site (e.g., infected leg wound, urine) shows the same organism found in the blood and the site is thought to be the source of the PBC

   or

   there is clinical evidence of infection at another site which is thought to be the source of the positive blood culture, but not sampled for culture
3. **Contamination:**
   Used if the organism isolated from the blood culture is thought by the physician or infection preventionist, to be a contaminant.
4. **Uncertain:**
   Used only if there is **insufficient evidence** to decide among the three previous categories.

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Thank you!

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Pub# CO-ESRD-15A139-09102018-01