

Wisconsin HAI Long-Term Care Education Series

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Dialysis and Long-Term Care: Improving Practices and Communication

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WISCONSIN DEPARTMENT
of HEALTH SERVICES

Agenda

- Types and care of dialysis and dialysis access
- Dialysis care considerations
- Infection risks and prevention practices
- Steps to improve communication and practices

Background



Approximately 84,000 people in Wisconsin have chronic kidney disease.



Over 7,000 people in Wisconsin are on dialysis.



There are **over 120** dialysis facilities in Wisconsin.



There are **over 332** nursing homes in Wisconsin.

Resource: <https://www.kidneywi.org/wp-content/uploads/2020/07/FY19-Annual-Report.pdf>

Dialysis Care Settings

Hospitals

Specialized
long-term
acute care
hospitals

Chronic
outpatient
facilities

Home dialysis in
nursing homes

Patients' homes

Offering Dialysis Care

When choosing to offer dialysis in your facility, you must consider:

- Benefits to patients.
- CMS (Centers for Medicare and Medicaid Services) regulations.
- Staff and training.
- Logistics.

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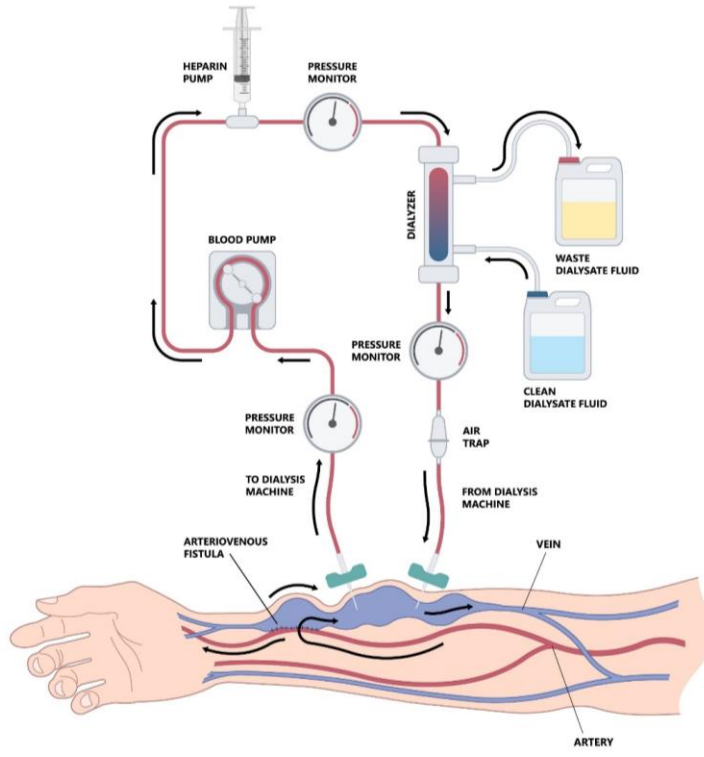
Resource: <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/GuidanceforLawsAndRegulations/Dialysis>

Dialysis Types and Care



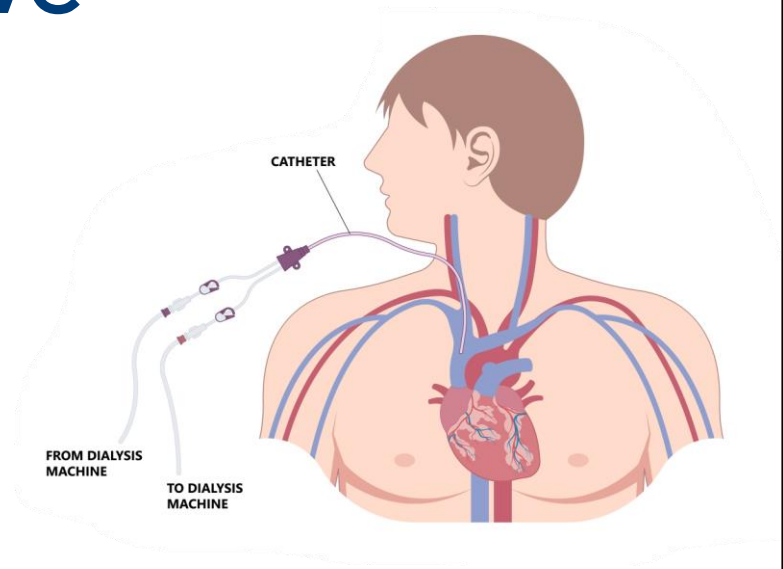
Hemodialysis

- Most common form of dialysis
- Removes blood from the body by a machine through a dialysis access
- Three main vascular access types:
 - Central venous catheter (CVC)
 - Arterial venous graft (AVG)
 - Arterial venous fistula (AVF)



Hemodialysis: CVC

A line placed into the blood vessel in the neck or upper chest with the tip ending in the right atrium of the heart



CVC Care: Dos

- ✓ Utilize “scrub the hub” protocol.
- ✓ Limit catheter access to dialysis staff only.
- ✓ Clean exit site with each dialysis treatment.
- ✓ Cover site with waterproof dressing if showering is permitted.
- ✓ Ensure dressing is clean and dry daily.
- ✓ Change dressing if soiled or sweaty.
- ✓ Secure the catheter.
- ✓ Ensure clamps are always closed.

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Resource: <https://www.cdc.gov/dialysis/prevention-tools/core-interventions.html#:~:text=Apply%20antibiotic%20ointment%20or%20povidone,dressing%20might%20be%20an%20alternative.>

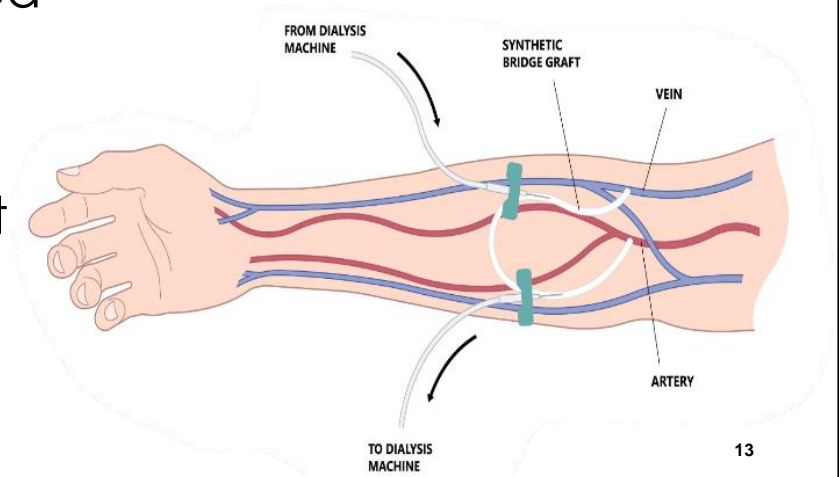
CVC Care: Don'ts

Avoid:

- ✘ Using lotions.
- ✘ Drawing blood or giving medications through the CVC.
- ✘ Using sharp objects near the catheter.
- ✘ Getting the catheter wet (through showering or swimming).
- ✘ Showering unless permitted by a doctor.

Hemodialysis: AVG

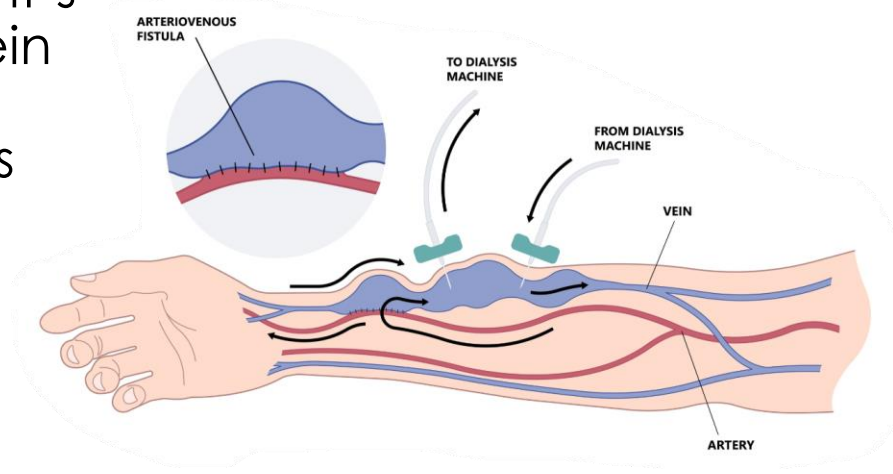
A synthetic implanted tube placed to connect a patient's artery and vein to create a permanent dialysis access site.



Resource: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcTJZfvLb1Ud73_oxre9chZh6eAmMil-xiu2kgo3GCLzOPZuxp5eEcQ2KLM9R8lj5f8&usqp=CAU

Hemodialysis: AVF

Connects a patient's own artery and vein to create a permanent dialysis access site.



Resource: https://www.nevadavascular.com/wp-content/uploads/2020/02/Dialysis_Access_mobile.jpg

AVG and AVF Care: Dos

- ✓ Wash with antibacterial soap daily (more often if sweaty or dirty).
- ✓ Only bathe, shower, and swim once healed.
- ✓ Apply sunscreen carefully around cannulation site.
- ✓ Listen for thrill or bruit daily.
- ✓ Remove bandages two-to-four hours post-dialysis.
- ✓ Be aware of any signs or symptoms of infection (such as redness, drainage, swelling, warmth, or temperature).

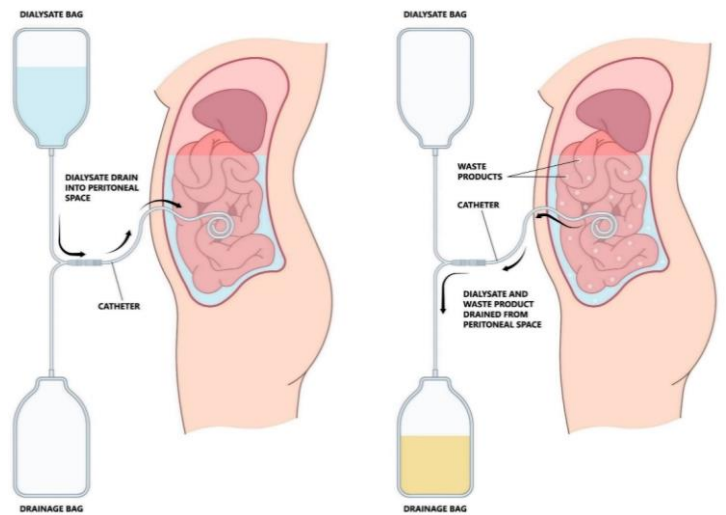
AVG and AVF Care: Don'ts

Avoid:

- ✗ Wearing tight clothing and watches on access arm.
- ✗ Lifting heavy items.
- ✗ Coughing or sneezing into access arm.
- ✗ Being in excessive heat (including saunas).
- ✗ Checking blood pressure and drawing blood on access arm.
- ✗ Sleeping on access arm.
- ✗ Scratching the area and access sites.
- ✗ Doing activities that could damage the access site.

Peritoneal Dialysis

- Blood vessels in peritoneum filter blood through pre-made dextrose-based dialysis solution
- Solution flows into peritoneum through peritoneal catheter.
- Requires daily treatments.



Peritoneal Dialysis Catheter

- Thin tube surgically placed into peritoneum that allows fluid to go in and out
- Can have one or two Dacron Cuffs
- Tip of catheter can be straight or coiled



Peritoneal Dialysis Catheter Care: Dos

- ✓ Utilize methods to prevent constipation.
- ✓ Secure tubing.
- ✓ Ensure clothes and bedding are clean.
- ✓ Ensure dressing is in place over exit site if area will get dirty.
- ✓ Clean daily and apply antimicrobial creams per a doctor's instruction.

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Resource: <https://www.cdc.gov/disasters/icfordialysis.html>

Resource:

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4689468/#:~:text=Additionally%2C%20constipation%20and%20its%20treatment,%2C%20and%20mortality%20\(43\).](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4689468/#:~:text=Additionally%2C%20constipation%20and%20its%20treatment,%2C%20and%20mortality%20(43).)

Peritoneal Dialysis Catheter Care: Dos

- ✓ Follow weight restriction once healed.
- ✓ Wear gloves and secure tubing when gardening.
- ✓ Cut fingernails short, no more than a quarter inch beyond fingertips.
- ✓ Wear mask when the catheter is accessed (this applies to everyone in the room).

Peritoneal Dialysis Catheter Care: Don'ts

Avoid:

- ✘ Changing new surgical dressing.
- ✘ Showering (until healed and a doctor approves).
- ✘ Using tub baths, hot tubs, or saunas (use approved swimming pools only).
- ✘ Using scissors and sharp objects near tubing and tape.
- ✘ Wearing artificial nails.
- ✘ Accessing site for anything other than dialysis.

Dialysis Care Considerations



Bathing



- May be completed by staff or patient
- CVC should not be submerged
- CVC exit site should be covered
- Showering may not be permitted

Dialysis Chairs



- Keep chairs in the dialysis unit
- Properly clean and disinfect chairs between patient
- Repair any tears and rips

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Used by patient when receiving dialysis

Transportation



- Vital to patient health.
- Transportation challenges include:
 - Patient compliance.
 - Late rides.
 - Scheduling.

Dietary Dos and Don'ts

Do:

- ✓ Limit fluid intake.
- ✓ Encourage high protein diets.
- ✓ Prevent missed meals.

Don't:

- ✗ Provide excess potassium, phosphorus, or sodium.

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Do:

- Most dialysis patients on hemodialysis have a fluid restriction which is around 32 ounces a day, depending on their doctor's orders. Fluid restriction is important because too much fluid for the dialysis patient can cause edema, elevated blood pressure, cough, and shortness of breath, fluid overload and pulmonary edema which could lead to a hospital stay.
- The recommendation amount of protein is typically 1.0-1.2 grams per KG of body weight. Some good sources of proteins include meats, fish, eggs, Greek yogurt.

Don't:

- Limit potassium to 2-3 grams/day. Healthy kidneys remove extra potassium, when the kidneys fail they can no longer do this and the potassium levels can build up in the body which can cause, nausea, weakness, irregular heart rate, cardiac arrhythmias and in some cases death.
- Limit Phosphorus to 800-1000mg/day. Phosphorus is unable to be removed well when your patients have kidney failure, and dialysis does not do a good job at removing it. When phosphorus is too high it can

lead to heart disease, joint issues and may cause Calciphylaxis which causes blood clots, painful skin ulcers and may cause serious infections that can lead to death.

Medications



- Ensure routine medications are given.
- Be aware of medication that should be held prior to dialysis.
- Ensure proper dosage.
- Complete medication reviews.

Medication Binders



- Phosphate binders aid in the elimination of phosphorus from the body.
- High phosphorus in dialysis patients can lead to calciphylaxis.

Oral Hygiene



- Encourage regular oral care and dental visits.
- Take steps to avoid dry mouth.
- Be aware when antibiotics are needed for dental care.

Supplies to Send to Dialysis



- ID and insurance card
- Blanket
- Change of clothes
- Headphones
- Food
- Durable medical equipment and Hoyer sling
- Toilet supplies

When Not to Attend Dialysis



- Patient has airborne or isolation-type infection.
- Patient is unconscious or has a severe change in mental status.
- Patient refuses.
- Patient has active emesis and/or diarrhea.

Dialysis Infection Prevention



Dialysis Patients are at Increased Risk



- Vascular access site infections (VALs)
 - Exit site infection
 - Access-related bloodstream infection (ARB)
- HAIs
- Hepatitis B and C

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Infections are the second leading cause of death in dialysis patients.

Resource: https://apic.org/monthly_alerts/hepatitis-and-dialysis-what-patients-can-do-to-prevent-infection/#:~:text=Those%20who%20undergo%20dialysis%20are,cancer%2C%20liver%20failure%20or%20death.

Resource: https://www.cdc.gov/dialysis-safety/about/?CDC_AAref_Val=https://www.cdc.gov/dialysis/patient/conversation-starter.html

Infection Risks

- Frequent access
 - CVC or needle cannulation used to access bloodstream three-to-five times per week.
 - Peritoneal catheter accessed 14+ times each week.
- Lower serum albumin levels
- Weakened immune systems
- Hospitalizations or surgery
- Water management in dialysis clinic

Staphylococcus aureus

- *Staph aureus* is the most common infectious agent seen in dialysis patients.
- Dialysis patients are at a higher risk of methicillin-resistant *Staph aureus* (MRSA) infections.



- The most common complication in dialysis is infection.
- The dialysis patient has a risk of exit site infections as well as BSI or blood stream infections.
- Blood stream infections are the second leading cause of death in dialysis patient, the first being cardiovascular disease. According to the CDC, in 2020 there were over 14,000 blood stream infections that occurred in patients on dialysis.
- The risk of infection of methicillin resistant staph aureus infections are 100 times higher for those patients on hemodialysis than people not on dialysis.
- The central venous catheter or CVC that is used in hemodialysis, has the highest risk of infection.

Infection Prevention Best Practices



Hand Hygiene



Personal
Protective
Equipment



Precautions



Immunizations

CDC recommended vaccinations for dialysis patients:

- Influenza
- Pneumococcal
- Pneumonia
- Hepatitis B
- COVID-19

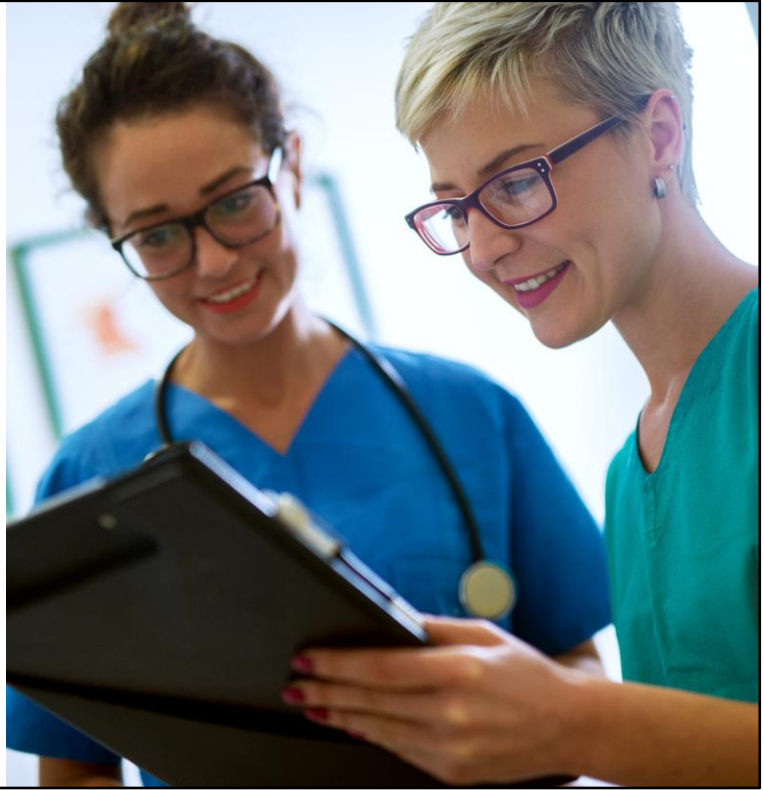


Steps You Can Take to Improve Communication and Practices



Communication

- Talk, talk, talk
- Include different disciplines
- Incorporate communication tools



Example Communication Tool

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 <small>End-Stage Renal Disease Network Program</small>	DIALYSIS AND NURSING HOME HANDOFF COMMUNICATION TOOL
TO BE COMPLETED BY NURSING HOME AND SENT WITH RESIDENT EACH TREATMENT	
RESIDENT NAME: _____ DATE: _____ Code Status: _____ Mental Status: _____ Vital Signs: Temp _____ Pulse _____ Resp _____ BP _____ Any allergies? _____ Any medical problems since last dialysis? Yes _____ No _____ Has patient been in hospital since last dialysis? Yes _____ No _____ If “Yes”, please explain: _____ Any new medication/vaccination since last dialysis? Yes _____ No _____ If “Yes”, list new medication/vaccination: _____ Any labs drawn by the nursing home? Yes _____ (if yes, attach copy of results) No _____ Any blood transfusions since last dialysis? Yes _____ No _____ If “Yes”, list reason (GI bleed, low hemoglobin, cancer, etc.) _____ Current Diet/Fluid Restrictions: _____ Type of Access: AV Fistula _____ AV Graft _____ Catheter _____ Dressing Intact: Yes _____ No _____ Any signs/symptoms of infection? Yes _____ No _____ If patient has a fistula or graft, can you feel or hear a pulsation? Yes _____ No _____ Nurse’s Signature: _____ Date: _____	
TO BE COMPLETED BY DIALYSIS AND RETURNED WITH RESIDENT EACH TREATMENT	
Pre-Dialysis Weight: _____ Post-Dialysis Weight: _____ Problems During Dialysis: _____ Amount of Fluid Removed: _____ Post-Dialysis Vitals: T _____ P _____ R _____ BP: Sitting _____ Standing _____ Labs Drawn: Yes _____ No _____ Copy of lab results attached: Yes _____ No _____ Updated MD orders attached: Yes _____ No _____ Did Dietitian Make Recommendations? _____ Did Social Worker Make Recommendations? _____ Food/Fluid Consumed During Dialysis: _____ % Meal Consumed _____ Fluids Consumed Medications Given During Dialysis: Anemia Meds _____ Other Meds _____ Vascular access condition: _____ Dialysis Nurse’s Signature: _____ DATE: _____	
 <small>Better health. redefined.</small>	IPRO End-Stage Renal Disease Network Program Corporate Headquarters: 1979 Marcus Avenue, Lake Success, NY 11042-1072 Patient Toll-Free: 800) 238-3773 • Fax: (516) 326-8929 E-mail: esrdnetworkprogram@ipro.org • Web: https://esrd.ipro.org/
This material was prepared by the IPRO End-Stage Renal Disease Network Program under contract with the Center for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The content presented does not necessarily reflect CMS policy. CMS Contract Number: HHS-96-0016-R0001C. HHS-96-0016-R0001C. HHS-96-0016-R0001C. HHS-96-0016-R0001C. Publication #: IPRO-96-05-899-2023727-124 (3/02) Rev. 2	

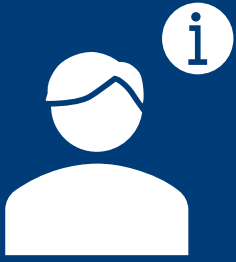
DIALYSIS AND NURSING HOME HANDOFF COMMUNICATION TOOL (ipro.org)

Provide Education for Staff



- Medications
- Access site care
- Proper dialysis graft or fistula function
- Dialysis patient care (i.e. bathing, diet)

Provide Education for Dialysis Patient



- Proper hand hygiene
- Access site care
- Signs and symptoms of access site infection
- Dietary needs

Resource: <https://www.dhs.wisconsin.gov/library/collection/p-03591>

What You Can Do

- Perform audits
- Post signage for helpful reminders
- Make PPE easily accessible
- Request an educational on-site visit from the Wisconsin HAI Prevention Program

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Resource: https://www.cdc.gov/dialysis-safety/hcp/tools/?CDC_AAref_Val=https://www.cdc.gov/dialysis/prevention-tools/audit-tools.html

Resource: <https://www.dhs.wisconsin.gov/hai/dialysis.htm>

Resources

- [HAI: Infection Prevention in Dialysis Settings](#)
- [Dialysis Safety](#)
- [Bacteremia in Hemodialysis Patients](#)
- [Medical Management of the Dialysis Patient: Infectious Complications](#)
- [Preventing Infections, Midwest Kidney Network](#)
- [National Kidney Foundation Annual Report–2019](#)
- [Hemodialysis](#)

Questions?

Thank you!



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- HAI: Home
- For Health Professionals
- For Patients & Families
- Infection Prevention Education**
- Infection Preventionist Starter Kit
- Multidrug-Resistant Organisms
- Precautions
- HAI Data
- National Healthcare Safety Network
- Antimicrobial Stewardship



HAI Infection Prevention Education

The resources below are intended to connect health care facility infection preventionists (IP) with education materials to support their role in preventing, detecting, and responding to healthcare-associated infections (HAI).

IPs play an essential role in facility infection prevention policy development, surveillance, and risk assessment. IPs also serve as a resource to other staff and programs within their facilities.

In addition to the state in-person trainings and online references below, there are a number of links to trusted education resources, including the CDC (Centers for Disease Prevention and Control), the CMS (Centers for Medicare and Medicaid Services), and the Association for Professionals in Infection Control and Epidemiology (APIC).

Monthly webinars for IPs

Long-Term Care Education Series

The Long-Term Care (LTC) Education Series provides education presentations on topics that include infection prevention, HAIs, antibiotic stewardship, disease surveillance, and outbreak response for staff at skilled nursing facilities, assisted living facilities, local health departments, and other LTC stakeholders. Each session features a new, timely topic presented by the Department of Health Services (DHS) program staff, HAI infection preventionists, partner organizations, or other external subject matter experts.

The LTC Education Series is a monthly webinar series, typically held the fourth Thursday of each month. Register for the [LTC Education Series](#).

Session recordings

IP Lunch and Learn

The IP Lunch and Learn is a webinar series that gives IPs from all care settings the opportunity to come together to discuss introductory infection prevention and control (IPC) topics, as well as share information, network, and ask questions. Each session focuses on a different basic IPC topic area and includes a brief overview with resources and time for attendees to ask questions and share tips and tricks. IPs newer to their role will especially benefit from the information shared.

The IP Lunch and Learn is typically held the second Tuesday of each month. Register for the [IP Lunch and learn webinar series](#).

HAI Infection Prevention Education webpage

<https://www.dhs.wisconsin.gov/hai/ip-education.htm>

Upcoming LTC Education Session

There will not be an LTC Education Series session in July.

Date: August 22, 2024

Topic: Sexually-Transmitted Infections in Long-Term Care



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