

What is Sepsis?

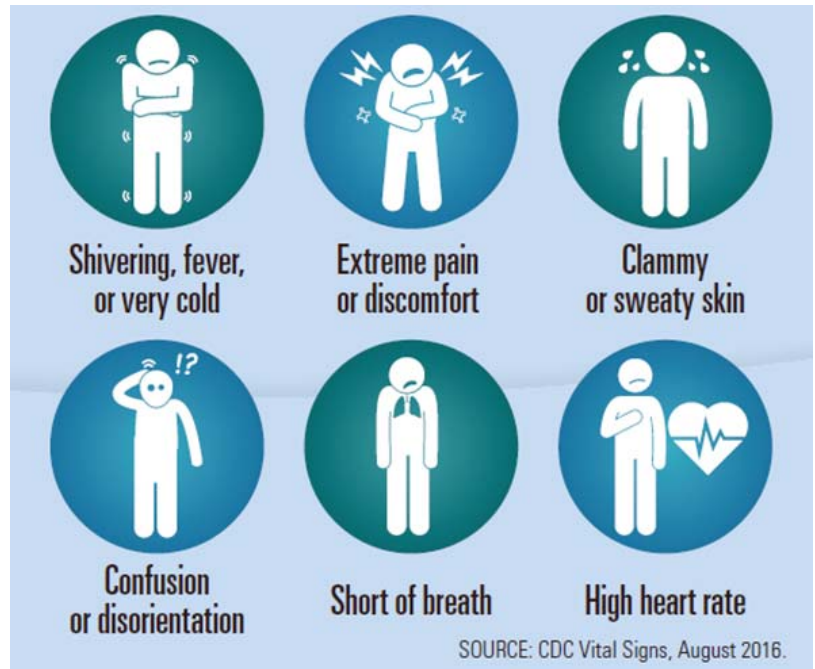
SOURCE: CDC Vital Signs, August 2016
<https://www.cdc.gov/vitalsigns/pdf/2016-08-vitalsigns.pdf>

Sepsis is a complication caused by the body's overwhelming and life-threatening response to infection. It can lead to tissue damage, organ failure, and death. Sepsis is difficult to diagnose. It happens quickly and can be confused with other conditions early on. Sepsis is a medical emergency. Time matters. When sepsis is quickly recognized and treated, lives are saved. Healthcare providers are the critical link to preventing, recognizing, and treating sepsis.

Healthcare providers can:

- **Prevent infections.** Follow infection control requirements (e.g., hand hygiene) and ensure patients receive recommended vaccines (e.g., flu and pneumococcal).
- **Educate patients and their families.** Stress the need to prevent infections, manage chronic conditions, and seek care if signs of severe infection or sepsis are present.
- **Think sepsis.** Know sepsis signs and symptoms to identify and treat patients early.
- **Act fast.** If sepsis is suspected, order tests to determine if an infection is present, where it is, and what caused it. Start antibiotics and other medical care immediately. Document antibiotic dose, duration, and purpose.
- **Reassess patient management.** Check patient progress frequently. Reassess antibiotic therapy 24-48 hours or sooner to change therapy as needed. Be sure the antibiotic type, dose, and duration are correct.

Signs and Symptoms of Sepsis



Key Infection Prevention Practices

SOURCE: CDC CE Course, "Infection Prevention in Dialysis Settings"
<https://www.cdc.gov/dialysis/clinician/ce/infection-prevent-outpatient-hemo.html>

- Perform hand hygiene frequently and change gloves.
- Maintain separate clean areas for supplies and medications and separate contaminated areas for used items.
- Practice proper handling and delivery of patient supplies and medications.
- Perform effective cleaning and disinfection of dialysis equipment and environmental surfaces.
- Carefully handle medications and the patient's vascular access to avoid contamination.



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National Healthcare Safety Network (NHSN)

SOURCE: CDC Dialysis Event Protocol

<https://www.cdc.gov/nhsn/pdfs/pscmanual/8pscdialysiseventcurrent.pdf>

The NHSN is defined as the nation's most widely used healthcare associated infection tracking system. It was developed by the CDC and is a valuable tool that assists facilities in capturing, analyzing, and reporting infection data. Tracking infections can identify which patients are at risk or which part of a facility needs improvement. Three types of events are reported by users and are defined as follows:

1. **IV antimicrobial start:** Report **ALL** IV antibiotic and antifungal starts, regardless of reason for treatment (i.e., include IV antimicrobial starts unrelated to vascular access problems) and regardless of duration of treatment.
 - There must be 21 or more days from the **end** of the first antimicrobial start to the **beginning** of the second IV antimicrobial start for 2 starts to be considered separate events.

2. **Positive blood cultures:** Report **ALL** positive blood cultures collected as an outpatient or collected within 1 calendar day after a hospital admission, regardless of whether or not the patient received treatment.

- There must be 21 or more days between positive blood cultures for each blood culture to be considered a separate dialysis event, even if organisms are different.

3. **Pus, redness, or increased swelling at the vascular access site:** Report each new outpatient episode where the patient has one or more symptoms of these.

- There must be 21 or more days between the **onset** of a first episode and **onset** of a second episode.

Remember to ask your dialysis patients on a daily basis if they have been to the hospital or emergency room. Capturing this information will provide you with an opportunity to request needed hospital records in order to determine if they were evaluated for an infection and if lab work was drawn for a blood culture.

Important NHSN Information

Mandatory Annual Training

To fulfill the annual training requirement, at least one NHSN user at each facility must read the Dialysis Event Protocol <https://www.cdc.gov/nhsn/pdfs/pscmanual/8pscdialysiseventcurrent.pdf> and take the online Dialysis Event Surveillance Training after January 1, 2017 and before September 30, 2017. (The online training link will be provided at a later date.) By completing the annual training and passing the post-test, you will earn 1.5 CME/ 1.3 CNE/ 0.1 CEUs.

CMS Reporting Deadline Fast Approaching

To meet the CMS ESRD QIP NHSN reporting requirements for Payment Year 2018, outpatient hemodialysis clinics must submit their fourth quarter 2016 Dialysis Event data collected from October 1, 2016 through December 31, 2016, by Friday, March 31, 2017. New or revised fourth

data entered into NHSN after March 31 will not be sent to CMS. Therefore, please be aware that any changes or corrections to fourth quarter 2016 data should be made prior to the reporting deadline.

The CDC recommends using the following resources to review your data before the deadline. These resources and others can be found on the [Dialysis Event homepage](#):

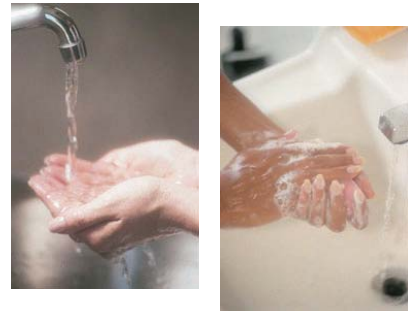
- Review the [NHSN Dialysis Event Protocol](#) to ensure all data were correctly reported to NHSN.
- [3 Steps to Review Dialysis Event Surveillance Data](#)
- [NHSN Guide to Interpreting the Dialysis Event 21 Day Rule Checks Report](#)
- Use the [How to Create and Read an NHSN Report for CMS ESRD QIP](#) guide to verify your facility has met the minimum CMS reporting requirements.
- Refer to the [How to Create and Read an NHSN Report for Bloodstream Infections](#) guide to review your facility's bloodstream infection rates.

Contact the NHSN Helpdesk (nhsn@cdc.gov, subject line 'Dialysis') with any questions.

Recommended Infection Control Practices for Hemodialysis Units[§]

Infection Control Precautions for All Patients

- Wear disposable gloves when caring for the patient or touching the patient's equipment at the dialysis station; remove gloves and wash hands between each patient or station.
- Items taken into the dialysis station should either be disposed of, dedicated for use only on a single patient, or cleaned and disinfected before being taken to a common clean area or used on another patient.
 - Nondisposable items that cannot be cleaned and disinfected (e.g., adhesive tape, cloth-covered blood pressure cuffs) should be dedicated for use only on a single patient.
 - Unused medications (including multiple dose vials containing diluents) or supplies (e.g., syringes, alcohol swabs) taken to the patient's station should be used only for that patient and should not be returned to a common clean area or used on other patients.
- When multiple dose medication vials are used (including vials containing diluents), prepare individual patient doses in a clean (centralized) area away from dialysis stations and deliver separately to each patient. Do not carry multiple dose medication vials from station to station.
- Do not use common medication carts to deliver medications to patients. Do not carry medication vials, syringes, alcohol swabs, or supplies in pockets. If trays are used to deliver medications to individual patients, they must be cleaned between patients.
- Clean areas should be clearly designated for the preparation, handling, and storage of medications and unused supplies and equipment. Clean areas should be clearly separated from contaminated areas where used supplies and equipment are handled. Do not handle and store medications or clean supplies in the same or an adjacent area to where used equipment or blood samples are handled.
- Use external venous and arterial pressure transducer filters/protectors for each patient treatment to prevent blood contamination of the dialysis machines' pressure monitors. Change filters/protectors between each patient treatment, and do not reuse them. Internal transducer filters do not need to be changed routinely between patients.
- Clean and disinfect the dialysis station (e.g., chairs, beds, tables, machines) between patients.
 - Give special attention to cleaning control panels on the dialysis machines and other surfaces that are frequently touched and potentially contaminated with patients' blood.
 - Discard all fluid and clean and disinfect all surfaces and containers associated with the prime waste (including buckets attached to the machines).
- For dialyzers and blood tubing that will be reprocessed, cap dialyzer ports and clamp tubing. Place all used dialyzers and tubing in leakproof containers for transport from station to reprocessing or disposal area.



Hepatitis B Vaccination

- Vaccinate all susceptible patients against hepatitis B.
- Test for anti-HBs 1-2 months after last dose.
 - If anti-HBs is <10 mIU/mL, consider patient susceptible, revaccinate with an additional three doses, and retest for anti-HBs.
 - If anti-HBs is ≥10 mIU/mL, consider patient immune, and retest annually.
 - Give booster dose of vaccine if anti-HBs declines to <10 mIU/mL and continue to retest annually.



Management of HBsAg-Positive Patients

- Follow infection control practices for hemodialysis units for all patients.
- Dialyze HBsAg-positive patients in a separate room using separate machines, equipment, instruments, and supplies.
- Staff members caring for HBsAg-positive patients should not care for HBV-susceptible patients at the same time (e.g., during the same shift or during patient changeover).

Schedule for Routine Testing for Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) Infections

Patient Status	On Admission	Monthly	Semiannual	Annual
All patients	HBsAg,* Anti-HBc*(total), Anti-HBs,* Anti-HCV, ALT†			
HBV-susceptible, including nonresponders to vaccine		HBsAg		
Anti-HBs positive (≥ 10 mIU/mL), anti-HBc negative				Anti-HBs
Anti-HBs and anti-HBc positive	No additional HBV testing needed			
Anti-HCV negative		ALT	Anti-HCV	

*Results of HBV testing should be known before the patient begins dialysis.
 †HBsAg=hepatitis B surface antigen; Anti-HBc=antibody to hepatitis B core antigen;
 Anti-HBs=antibody to hepatitis B surface antigen; Anti-HCV=antibody to hepatitis C virus;
 ALT=alanine aminotransferase.

