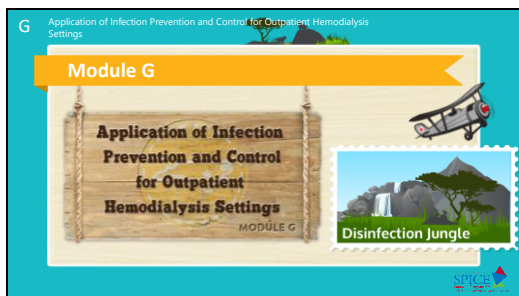


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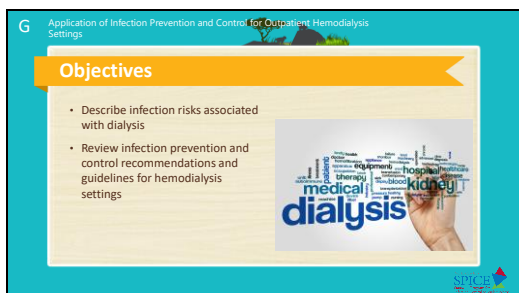
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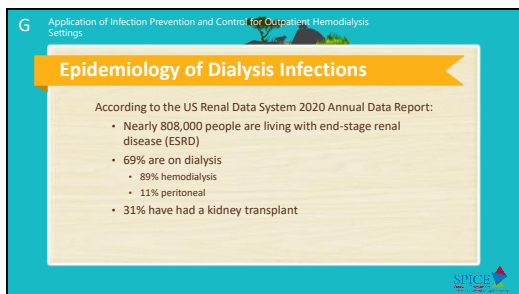
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Slide 3



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Slide 4

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Epidemiology of Dialysis Infections

Infections are a leading cause of morbidity and mortality

S. aureus most common in patients reported to NHSN



Adults on Dialysis Have Higher Rates of Staphylococcus aureus Bloodstream Infections

100X

Adults NOT on dialysis

Adults on dialysis

Viridians MMWR CDC

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Slide 5

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### Factors Increasing Risk of Dialysis Infections



Dialysis patients are at increased risk for infections

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Slide 6

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Factors Increasing Risk of Dialysis Infections

- Underlying medical problems (e.g., diabetes, high blood pressure)
- Weaken immune system
- Frequent healthcare exposure (inpatient and outpatient care)
- Frequent use of catheters or insertion needles for access to the bloodstream



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Slide 7

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### Infections in Dialysis Patients

Catheter use:  
Vascular access type is the major risk factor for bloodstream infections regardless of race, ethnicity, or socioeconomic status.

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Slide 8

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### Core Interventions to Reduce Dialysis Bloodstream Infections

- Conduct monthly surveillance
- Perform observations of hand hygiene opportunities and share results
- Catheter/vascular access care observations
- Staff education and competency
- Patient education/engagement
- Catheter reduction
- Chlorhexidine for skin antiseptics
- Catheter hub disinfection
- Antimicrobial ointment

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Slide 9

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### 2016 Update-2001 CDC Hemodialysis Recommendations

Some information and recommendations in the 2001 Guideline have been superseded by information that has led to more recent CDC recommendations. These topics include but are not limited to:

- Testing for hepatitis C virus (HCV)
- Testing for human immunodeficiency virus (HIV) infection
- Standard precautions in healthcare settings

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Slide 10

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### 2016 Update-2001 CDC Hemodialysis Recommendations

CDC recommendations and information issued after 2001 address some topics not included in the 2001 Guideline

- Preventing hemodialysis catheter-related infections
- Screening patients for latent tuberculosis infection
- Recommended vaccinations for some vaccine-preventable diseases



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Slide 11

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### Infection Prevention Control Precautions

**Perform Hand Hygiene:**

- Before you touch a patient
- Before you inject or infuse a medication
- Before you cannulate a fistula/graft or access a catheter
- After you touch a patient
- After you touch blood, body fluid, mucous membranes, wound dressings, or dialysis fluids (e.g., spent dialysate)
- After you touch medical equipment or other items at the dialysis station
- After you remove gloves
- **ALWAYS** between each patient **AND/OR** between each patient stations.



A sufficient number of sinks with warm water and soap should be available to facilitate hand washing if hands are visibly soiled.



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Slide 12

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### Infection Prevention Control Precautions

Wear disposable gloves when caring for the patient or touching the patient's environment at the dialysis station; remove and wash hands between each patient or station.



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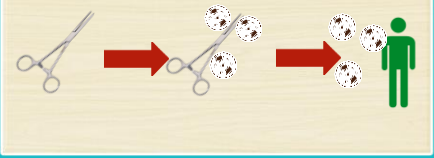
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Slide 13

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Infection Prevention Control Precautions



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Slide 14

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### Infection Prevention Control Precautions

Items taken into the dialysis station should either be:

- Disposed of
- Dedicated for use only on a single patient
- Cleaned and disinfected before being taken to a common clean area or used on another patient

⚠ Non disposable items that cannot be cleaned and disinfected (e.g., adhesive tape, cloth-covered blood pressure cuffs) should be dedicated for single patient use only

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Slide 15

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### Infection Prevention Control Precautions

Unused medications including multiple dose vials 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 another patient.



ONLY ONE

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Slide 16

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### Infection Prevention Control Precautions

Additional measure to prevent contamination of clean/sterile items:

- Prepare medications in a room/area separated from treatment area and designated only for medications
- Do not handle/store contaminated/used supplies in areas where medicine/clean supplies are handled
- Deliver medications separately to each patient
- Medications labeled as single use (including erythropoietin) should not be punctured more than one time

ONE TIME

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Slide 17

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Personal Protective Equipment (PPE)

Wear gowns, face shields, eye wear, or masks when performing procedures during which spurling or spattering of blood might occur:

- During initiation and termination of dialysis,
- During cleaning of dialyzers, and
- Centrifugation of blood

Change PPE if it becomes soiled

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Slide 18

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### Knowledge Check

#### True or False?

In addition to gloves, HCP should wear a gown, eye and mouth protection during initiation and termination of dialysis and change PPE if it becomes soiled or contaminated.

True  False

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Slide 28

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### Hepatitis B Virus (HBV)

#### 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 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.



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Slide 29

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### Preventing Hepatitis B Transmission

- Dialyze hepatitis B (HBsAg+) patients in a separate room using separate machines, equipment, instruments, and supplies – Be sure to use a separate gown when treating these patients
  - HBsAg+ means hepatitis B surface antigen (a lab test for hepatitis B virus) was positive
- Staff members caring for patients with hepatitis B (HBsAg+) should not care for HBV-susceptible patients at the same time (e.g., during the same shift or during patient change over)
  - HBV-susceptible means anyone who has never been infected and lacks immunity to hepatitis B virus



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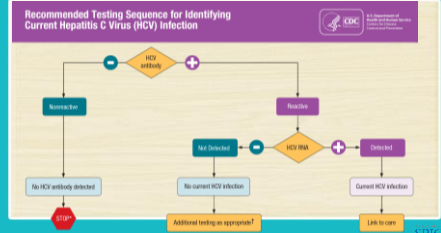
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### Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection



```
graph TD; Start([Start]) --> HCV_Antibody{HCV antibody}; HCV_Antibody -- No --> No_Antibody[No HCV antibody detected]; No_Antibody --> Stop([STOP]); HCV_Antibody -- Yes --> HCV_RNA{HCV RNA}; HCV_RNA -- No --> No_Infection[No current HCV infection]; No_Infection --> Additional[Additional testing as appropriate?]; HCV_RNA -- Yes --> Confirmed[Confirmed HCV infection]; Confirmed --> Link[Link to care];
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Slide 31

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Footnotes

\* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen. Source: CDC. Testing for HCV infection: An update of guidance for clinicians and laboratorians. MMWR 2013;62(18).



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Slide 32

G Application of Infection Prevention and Control for Outpatient Hemodialysis Settings

### Preventing Bacterial, Respiratory Infection Transmission

Hemodialysis patients at increased risk for spreading germs to other patients include those with:

- An infected skin wound with drainage that is not contained by dressings
- Fecal incontinence or uncontrolled diarrhea



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Slide 33

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### Preventing Bacterial, Respiratory Infection Transmission

For these patients use the following precautions:

- Wear a gown and gloves when caring for the patient and remove the gown and gloves when finished caring for that patient
- Do not wear the same gown when caring for other patients
- Dialyze patient at a station with as few adjacent stations as possible (e.g., at the end or corner of the room)



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Slide 34

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### Preventing Bacterial, Respiratory Infection Transmission

Patients with respiratory illness and a fever are at risk of spreading viral infections

- These patients should be dialyzed at least 6 feet away from other patient stations or any shared supplies



6 ft.



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Slide 35

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### Educating Patients and Caregivers

When a new patient starts dialysis and on an annual basis, review the following:

- Personal hygiene and hand hygiene technique
- Patient responsibility for proper care of the access site and recognition of signs of infection
- Recommended vaccinations (including hepatitis B, influenza, and pneumococcal)
- Reasons for selecting a fistula or graft over a catheter to lower the risk of infection



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Slide 36

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### Educating Patients and Caregivers

Advise patients to inform you if they notice any of the following possible signs of infection:



- Fever
- The access site is:
  - swollen (bulging)
  - red
  - warm to touch
  - has pus
  - severe pain at the access site

Remember: infections of the vascular access site can be life threatening



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Slide 37


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**Knowledge Check**

**True or False?**

Patients who undergo dialysis should NOT receive the annual influenza vaccine due to increased risk of reaction?

True  False



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Slide 38

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**Summary**

- Infections that patients can get while receiving dialysis are serious and preventable!
- Healthcare workers like you following infection control precautions and other safe care practices are the key to prevention!
- Infection prevention is everyone's responsibility!



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Slide 39

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**CDC Resource Links**

- CDC Audit Tools and Checklists <https://www.cdc.gov/dialysis/prevention-tools/audit-tools.html>
- CDC Core Interventions <https://www.cdc.gov/dialysis/prevention-tools/core-interventions.html>
- CDC Recommendations for Preventing Transmission of Infections Among Chronic Hemodialysis Patients (2001) <https://www.cdc.gov/infectioncontrol/prevention/dialysis>
- CDC Hemodialysis Central Venous Catheter Scrub-the-Hub Protocol <https://www.cdc.gov/dialysis/prevention-tools/scrub-the-hub-protocol.html>
- CDC Infection Prevention Tools <https://www.cdc.gov/dialysis/prevention-tools/index.html>



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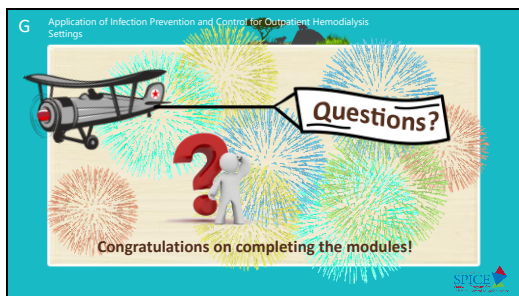
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