Introduction to Reservoirs: Where Germs Live

Session 1

Body Reservoirs

Project Firstline **Infection Control Training Toolkit**

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

PROJECT **FIRST**LINE

Contents

Overview of Session Plan

The following session plan is provided to support you, as a facilitator of a Project Firstline training, in using Project Firstline materials to create well-rounded training events and to educate your audience about infection control.

Facilitator Instructions

This content can be offered as a stand-alone session, or combined with other Project Firstline sessions to create a longer training event. This session plan includes recommendations for using chat functions and other tools and activities to draw your audience into the material when your time is limited. When you schedule your session, use your knowledge of your audience's availability and learning needs to adapt these materials as needed.

Session Materials

- *Body Reservoirs* session plan
- Corresponding PowerPoint slide deck
- Participant booklet

Using the Materials

This session plan is one of three in a series that explores the concept of where germs live on and in the human body and in the healthcare environment, known as "reservoirs," and why understanding reservoirs is important for infection control. Whether you offer the full series or this session alone, following are things to know:

- Use the session plan and slides as guides for your training presentation.
- The slide numbers in the session plan correspond to the companion slide deck.
- You are encouraged to customize or adapt the sample facilitator scripts to better match your own voice and audience.
- The time recommendations are provided as a guide for short 20-minute training sessions. As needed, take more time with specific sections.

Conducting a Session

Schedule and announce the sessions according to your organization's needs and requirements. Each session should include, at a minimum:

- specific learning objectives,
- the presentation of core content, and
- opportunities for participants to learn more, understand and connect with the key messages for each topic, act on their learning, and engage with others.

Educational Content at a Glance

Learning Objectives

- Describe four body reservoirs where germs live that are important for infection control in healthcare.
- Explain how germs can be spread from each body reservoir and cause harm.

Key Takeaways

- "Reservoirs" are the places on and in our bodies and in the environment where germs live. Germs frequently spread between and among these reservoirs.
- Four reservoirs in the human body that are important for infection control are the skin; the gastrointestinal (GI) system or "gut"; the respiratory system; and blood.
- Understanding where germs live helps us recognize where there is risk for them to be spread, and helps us understand why infection control actions work to stop them from spreading and making people sick.

Before the Session

In this session, participants will use an online platform to generate a real-time "word cloud" in response to questions and prompts.

- In advance, choose a word cloud platform (e.g., AnswerGarden) and familiarize yourself with how to create a page in the platform for each of the four body reservoirs: skin; gastrointestinal (GI) system or "gut"; respiratory system; and blood.

- Be prepared to paste the link to the word cloud web page you've created for each reservoir into the chat at the appropriate time in the discussion.

- During the session, be prepared to screenshare the word cloud as it is populated.

- If a word cloud platform is not available or accessible, participants may respond using the chat function. Modify the slides and script as needed.

As an alternative to discussing all four body reservoirs in one session, you may wish to plan a series of four "mini-sessions," one on each reservoir. If you choose to split into mini-sessions, modify the script and slides as needed.

Session Slides and Facilitator Notes

1. Welcome and Introductions

1 minute

Slide 1: Welcome and Introductions

Facilitator Notes

Participants log in and get settled.

Slide 2: Agenda

Facilitator Notes

- Welcome the group and add a greeting to the chat box.
- If this session is part of an ongoing series, you may choose to say "welcome back," "thank you for joining us again," etc.
- Announce housekeeping notes, either orally or via chat. If needed, provide additional notes specific to the platform you're using (e.g., how to "raise your hand," how to post questions).
- Provide an overview of the agenda.
- Adapt this section of the session as needed: for instance, you may choose to spend additional time on introductions if there are new faces, or if participants do not know each other.

Sample Script

"Welcome to Project Firstline. Thank you for joining us! Before we begin, a few housekeeping notes. We'll meet today for about 20 minutes. Please keep your videos on, to the extent possible, and keep your microphone muted when you are not contributing to the discussion. It's great to see you all here today!

"Today we're going to talk about body reservoirs: places on and in the human body where germs live. We'll also talk about why understanding these reservoirs is important for infection control in healthcare, and how your knowledge can help you recognize infection risks – so you can take action and help keep germs from spreading! We'll have an opportunity to reflect before we wrap up for the day."

2. Four Body Reservoirs

2 minutes

Slide 3: Four Body Reservoirs

(Transition slide)

Slide 4: What Do You Think?

Facilitator Notes

- Ask participants to identify the body parts or body systems that they think are most likely to pose risks for germs to spread in healthcare. Invite them to type their answers into the chat. This quick question is intended to serve as an "icebreaker" that will set the stage for the session's discussion.
- Invite one or two participants to unmute, share their answers, and discuss why they chose those particular body parts or systems.

Sample Script

"First, I'd like to hear from you. What's the first thing you think of when I ask, 'What parts of the body, or body system, are the most likely to pose risks for germs to spread in healthcare?' Please type your answer in the chat."

(Pause for responses.)

"I'm seeing some great ideas! Would someone be willing to unmute to share your answer, and why you thought of it – can you tell us what makes it a risk for germs to spread? Great, thank you!"

PPT **Slide 5: The Body Reservoirs**

Facilitator Notes

- Briefly present and define four reservoirs in the human body: skin; gastrointestinal (GI) system or "gut"; respiratory system; and blood.
- Note that these four reservoirs are not the only places in the human body where germs live, but they are important focus areas for infection control in healthcare.
- Explain to participants that this session will focus on why these reservoirs are important for infection control, and how healthcare workers can use their knowledge about them to recognize risks for germs to spread.
- If appropriate for your audience and timeframe, you may choose to incorporate additional points from this session's Content Outline in the Appendix.

Sample Script

"When we think about how to keep germs from spreading in healthcare, it's helpful to think about germs in the context of where they usually live – their reservoirs. Knowing where germs live can help you recognize where there is risk for them to spread. It also helps you understand why infection control actions work to stop germs from spreading and making people sick.

"In this session, we'll focus on four reservoirs of the human body that are important for infection control. There are other examples of body systems where germs live, but we will focus on skin; the gastrointestinal system, also known as the 'gut'; the respiratory system; and blood."

3. Word Clouds and Discussion

12 minutes

PPT   **Slide 6: Word Clouds and Discussion**

(Transition slide)

PPT   **Slide 7: Reservoir Word Clouds**

Facilitator Notes

- This activity has two parts: (1) individually, participants will briefly review one of the reservoirs and identify an important fact for infection control related to their assigned reservoir; and (2) the group will reconvene to share and discuss what they identified and collectively create word clouds of these important facts for each reservoir.

- Direct participants to the informational tables in their participant booklets, which provide additional details about each body reservoir.

- By a means of your choosing, assign each participant one reservoir to review silently for approximately 2 minutes.

  ▶ As they review, ask them to imagine that they are responsible for coaching a new employee in their profession about the importance of their assigned reservoir for infection control. What is one important thing that they would want their colleague to know about this body system to keep germs from spreading from this reservoir, and why?

  ▶ Ask participants to be ready to share and explain their answers when the group reconvenes.

  ▶ If you choose, you can ask participants to use the "raise your hand" function in your meeting platform when they have identified their fact to share. If all participants are ready before 2 minutes have elapsed, reconvene the group sooner.

- Reconvene the group to review each reservoir and discuss the fact each participant has identified. Plan on spending 2 to 3 minutes per reservoir, for a total of 10 minutes, but feel free to move on from a reservoir sooner if the group has concluded their discussion.

- If you have chosen to split discussion of the body reservoirs into more than one session, modify the activity and script as needed.

Sample Script

"Now we're going to look at these four body systems in a little more depth. Please refer to your participant booklet, where there are informational tables for each of these reservoirs. I'm going to assign each of you one to review. As you're doing that, imagine that you are responsible for coaching a new employee in your profession on the importance of this reservoir for infection control.

"What is one important thing about this reservoir that you would you want this new colleague to know to prevent the spread of infections, and why? In other words, what is one important reason why should we care about this reservoir for infection control in healthcare? For example, germs in the gut travel easily in stool into the environment, so it's important to clean and disinfect surfaces. Please be ready to share your perspectives."

(Assign reservoirs.)

"You'll have about 2 minutes to review your reservoir and identify your important fact. Ready? Go!"

PPT **Slide 8: Skin Word Cloud**

Facilitator Notes:

- Explain the word cloud activity: participants will enter a word or short phrase that captures an important fact about their reservoir, and then the entire group will discuss the results.

- In the chat, share the link to the word cloud web page that you have created for the skin reservoir, and ask the skin group to visit the page and add their important facts to the cloud.

- While the group enters their responses, screenshare the word cloud page so that everyone can see it populate in real time. If the same item is identified more than once, or if similar points are noted, emphasize their importance.

- If time permits, you may wish to ask for one or two volunteers from the skin group to share their important fact and why they identified it. You may also wish to invite all participants to share any observations about the word cloud.

Sample Script

"Thank you, everyone! Now we're going to discuss what you've identified as important about these reservoirs for infection control. First, you'll share your thoughts using a word cloud!

"Let's begin with the people who reviewed the skin reservoir. If you're in that group, please click on the link I've posted in the chat. When you arrive at the web page, please type in your important fact about skin. You can enter a key word or short phrase that sums up your idea."

(Screenshare the word cloud web page. Acknowledge and affirm entries, as appropriate.)

"This is great, thank you! I see several of you identified similar facts. Would anyone from the skin group care to unmute and share fact you chose, and why you identified it as important for infection control?"

PPT   Slide 9: Key Takeaways about the Skin Reservoir

Facilitator Notes

- Stop screensharing the word cloud and **return to slide 9** of the PowerPoint.
- Note key points about the skin reservoir shown on the slide. Point out whether they were identified in the word cloud and reiterate additional points that were included in the word cloud.
- Reinforce connections between the skin reservoir and how germs can spread and cause harm. Invite a volunteer from a different reservoir group to share verbally or in the chat their ideas about why the skin reservoir is important for infection control.
  - ▶ Time permitting and as appropriate, you may choose to incorporate infection control actions that are relevant to the skin reservoir into this discussion.

Sample Script

"That was great – there are a lot of important things to remember about skin for infection control! Germs can spread from skin, and it happens a lot – mostly through our hands, because we use them so much. Touch is a major pathway of spread to and from the skin. Germs on your skin can spread to people and surfaces, and your skin can pick up germs through touch and spread them to others, or to yourself. We also do things in healthcare that break patients' skin, like inserting an IV or treating patients with surgical procedures. When that happens, germs on the skin's surface can be pushed into the patient's body or bloodstream.

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"I'd like to hear from someone who reviewed one of the other reservoirs – based on what we saw in the word cloud and other points of discussion, what stands out for you as important about skin for infection control in your profession? Please feel free to unmute yourself!"

(Pause for responses. Acknowledge and affirm, as appropriate.)

PPT **Slide 10: GI System Word Cloud**

Facilitator Notes

- In the chat, share the link to the word cloud web page that you have created for the GI system, and ask the GI system group to visit the page and add their important facts to the cloud.
- While the group enters their responses, screenshare the word cloud page so that everyone can see it populate in real time. If the same item is identified more than once, or if similar points are noted, emphasize their importance.
- If time permits, you may wish to ask for one or two volunteers from the GI group to share their important fact and why they identified it. You may also wish to invite all participants to share any observations about the word cloud.

Sample Script

"Now, let's hear from the people who reviewed the GI system reservoir. If you're in that group, please click on the link I've posted in the chat. When you arrive at the web page, please type in your important fact about the GI system!"

(Screenshare the word cloud web page. Acknowledge and affirm entries, as appropriate.)

"This is great, thank you! I see several of you identified similar facts. Would anyone from the GI system group care to unmute and share the fact you chose, and why you identified it as important for infection control?"

PPT **Slide 11: Key Takeaways about the GI System Reservoir**

Facilitator Notes

- Stop screensharing the word cloud and **return to slide 11** of the PowerPoint.
- Note key points about the GI system reservoir shown on the slide. Point out whether they were identified in the word cloud and reiterate additional points that were included in the word cloud.
- Reinforce connections between the GI system reservoir and how germs can spread and cause harm. Invite a volunteer from a different reservoir group to share verbally or in the chat their ideas about why the GI system reservoir is important for infection control.
  - ▶ Time permitting and as appropriate, you may choose to incorporate infection control actions that are relevant to the GI system reservoir into this discussion.

Sample Script

"Thank you! Germs from the gut travel easily in stool, and they're often found in the environment, like on surfaces in bathrooms. Touch is a major pathway of spread for these germs because they spread so easily. Bypassing or breaking down the body's defenses is another way they can be spread, such as through procedures done on the gut, like surgeries that can break through the gut's normal defenses and spread germs to other parts of the body. It can also happen if gut germs are on someone's skin and get into their body from a procedure like an IV insertion.

"I'd like to hear from someone who reviewed one of the other reservoirs – based on what we saw in the word cloud and other points of discussion, what stands out for you as important about the GI system for infection control in your profession? Please feel free to unmute yourself!"

(Pause for responses. Acknowledge and affirm, as appropriate.)

PPT **Slide 12: Respiratory System Word Cloud**

Facilitator Notes

- In the chat, share the link to the word cloud web page that you have created for the respiratory system reservoir, and ask the respiratory system group to visit the page and add their important facts to the cloud.

- While the group enters their responses, screenshare the word cloud page so that everyone can see it populate in real time. If the same item is identified more than once, or if similar points are noted, emphasize their importance.
- If time permits, you may wish to ask for one or two volunteers from the respiratory system group to share their important fact and why they identified it. You may also wish to invite all participants to share any observations about the word cloud.

Sample Script

"Now, let's hear from the people who reviewed the respiratory system reservoir. If you're in that group, please click on the link I've posted in the chat. When you arrive at the web page, please type in your important fact about the respiratory system!"

(Screenshare the word cloud web page. Acknowledge and affirm entries, as appropriate.)

"This is great, thank you! I see several of you identified similar facts. Would anyone from the respiratory system group care to unmute and share the fact you chose, and why you identified it as important for infection control?"

PPT   **Slide 13: Key Takeaways about the Respiratory System Reservoir**

Facilitator Notes

- Stop screensharing the word cloud and **return to slide 13** of the PowerPoint.
- Note key points about the respiratory system reservoir shown on the slide. Point out whether they were identified in the word cloud and reiterate additional points that were included in the word cloud.
- Reinforce connections between the respiratory system reservoir and how germs can spread and cause harm. Invite a volunteer from a different reservoir group to share verbally or in the chat their ideas about why the respiratory system reservoir is important for infection control.
  - ▶ Time permitting and as appropriate, you may choose to incorporate infection control actions that are relevant to the respiratory system reservoir into this discussion.

Sample Script

"Thank you! There are several pathways for germs to be spread from the respiratory system. Breathing is an important pathway, of course, because germs can be spread through respiratory droplets. We also have to remember that respiratory droplets can spread by splashes and sprays to the eyes, nose, and mouth. Touch is also important, because germs in the respiratory system spread easily to the skin and hands, and from there can be spread to other people and surfaces.

"I'd like to hear from someone who reviewed one of the other reservoirs – based on what we saw in the word cloud and other points of discussion, what stands out for you as important about the respiratory system for infection control in your profession? Please feel free to unmute yourself!"

(Pause for responses. Acknowledge and affirm, as appropriate.)

Slide 14: Blood Word Cloud

Facilitator Notes

- In the chat, share the link to the word cloud web page that you have created for the blood reservoir, and ask the blood group to visit the page and add their important facts to the cloud.
- While the group enters their responses, screenshare the word cloud page so that everyone can see it populate in real time. If the same item is identified more than once, or if similar points are noted, emphasize their importance.
- If time permits, you may wish to ask one or two participants from the blood group to volunteer to share their important fact and why they identified it. You may also wish to invite all participants to share any observations about the word cloud.

Sample Script

"Now, let's hear from the people who reviewed the blood reservoir. If you're in that group, please click on the link I've posted in the chat. When you arrive at the web page, please type in your important fact about the blood reservoir!"

(Screenshare the word cloud web page. Acknowledge and affirm entries, as appropriate.)

"This is great, thank you! I see several of you identified similar facts. Would anyone from the blood group care to unmute and share the fact you chose, and why you identified it as important for infection control?"

Slide 15: Key Takeaways about the Blood Reservoir

Facilitator Notes

- Stop screensharing the word cloud and **return to slide 15** of the PowerPoint.
- Note key points about the blood reservoir shown on the slide. Point out whether they were identified in the word cloud and reiterate additional points that were included in the word cloud.
- Reinforce connections between the blood reservoir and how germs can spread and cause harm. Invite a volunteer from a different reservoir group to share verbally or in the chat their ideas about why the blood reservoir is important for infection control.
  - ▶ Time permitting and as appropriate, you may choose to incorporate infection control actions that are relevant to the blood reservoir into this discussion.

Sample Script

"Great work! Blood is an important reservoir to think about for infection control in healthcare. It's not supposed to have any germs at all, but there are bloodborne viruses that can spread, especially by needlestick. Also, if a needle or syringe is reused on more than one patient, or a vial of medication is contaminated with blood, germs from one person's blood could be spread to someone else. It's also important to think about splashes and sprays – like in procedures such as blood draws, when blood can splash or spray into the eyes and mouth. Touch is important, too – if blood is on surfaces or linens, germs can spread from that blood.

"I'd like to hear from someone who reviewed one of the other reservoirs – based on what we saw in the word cloud and other points of discussion, what stands out for you as important about blood for infection control in your profession? Please feel free to unmute yourself!"

(Pause for responses. Acknowledge and affirm, as appropriate.)

4. Bringing It Together

3 minutes

PPT Slide 16: Bringing It Together

(Transition slide)

PPT Slide 17: Reflection

Facilitator Notes

- Transition from the learning activity to give participants an opportunity to reflect on their own key takeaways from the session. Ask them to think about what stands out as the most helpful or important thing that they want to remember, and why it is important or helpful for them in their work.
- Encourage participants to note their ideas in their participant booklets.
- You may choose to ask one or two volunteers to unmute and share their thoughts.

Sample Script

"You did a great job identifying important things to remember about the body reservoirs and infection control! Now, as you reflect on all that we've talked about, what stands out to you as the most helpful or important thing to remember? Why is it important? How will you think about these body systems and infection control in your work?

"Please jot down your thoughts in your participant booklets. Would anyone care to unmute and share their ideas?"

PPT **Slide 18: Questions**

Facilitator Notes

- Invite additional remaining questions.
- If the answers are information that is already included in this session, please respond.
- If the questions address content that is not covered in this session, please do not attempt to answer. Instead, take note of the questions and consult with CDC resources to follow up with answers after the session.

Sample Script

"We covered a lot today. Does anyone have any questions still remaining, or items I can clarify about the body reservoirs?"

5. Conclusion

2 minutes

PPT **Slide 19: Conclusion**

(Transition slide)

PPT **Slide 20: Key Takeaways**

Facilitator Notes

Thank participants for their time and review the Key Takeaways from the session.

Sample Script

"Thank you for your time and attention today. I hope that you can use these ideas in your work to help stop the spread of germs."

PPT   **Slide 21: How to Get Involved and Feedback**

Facilitator Notes

- Share additional resources from Project Firstline and CDC.
- Explain how participants can reach you, by the means of your choosing, and how they can reach Project Firstline.
- If this session is part of a series, you may choose to describe the themes of upcoming sessions.
- Direct participants to the feedback form.

Sample Script

"Even though we covered a lot today, there is still much more to learn. You can keep exploring these topics on your own using the resources on this slide.

"Project Firstline has a suite of products to help you learn how to recognize infection control risks at work, and to help you learn more about where germs live in healthcare and how they spread. You can also follow Project Firstline on social media!

"I will stay online for a few minutes after our session ends and will be happy to discuss any other questions!"

(If this session is part of a series) "Next time, we will cover [insert next training topic]. Finally, please let us know how you enjoyed today's session by completing the following feedback form. Thanks again for joining us today."

Appendix: Content Outline

General Notes

- "Reservoirs" are the places on and in our bodies and in the environment where germs live. They're like a natural habitat.
  - ▶ Germs frequently spread between and among reservoirs.
- Four reservoirs in the human body that are important for infection control are skin; the gastrointestinal (GI) system or "gut"; the respiratory system and blood.
  - ▶ There are other examples of body systems where germs live, but these four are particular focus areas for infection control.
- Understanding where germs live helps us recognize where there is risk for them to be spread, and helps us understand why infection control actions work to stop them from spreading and making people sick.

Skin

- Many germs, especially bacteria, grow on the skin and help keep it healthy. Some of those germs can be harmful to vulnerable patients.
  - ▶ Common groups of bacteria on skin are *Staphylococcus*, including methicillin-resistant *Staphylococcus aureus* (*S. aureus*) or MRSA, and *Streptococcus*.
  - ▶ *Candida*, a type of yeast, is also commonly found on skin.
- Germs can spread from skin, and it happens a lot.
- Skin interacts with the environment every day, mostly through hands, because hands are used so much.
  - ▶ Germs on your skin, especially on your hands, can get onto surfaces, people (including patients), or things that will touch patients.
  - ▶ In the same way, you can pick up germs from surfaces through touch and spread them to others, or to yourself.
  - ▶ Those germs then spread to other environments or other people, including patients.
- In healthcare, we often do things that break the skin, like putting in an IV or treating patients with surgical procedures.
  - ▶ These procedures can push germs that are on the skin's surface or on the medical device that's being used into the patient's body or bloodstream, where they can cause an infection.
  - ▶ Skin breaks can also come from surgery or trauma.
- Bacteria can grow and become a problem when there are breaks or irritation of the skin, like with a scratch, paper cut, or rash.
  - ▶ Broken skin is likely to have more germs, and more of the kinds of germs that can cause harm.
  - ▶ Germs can spread more easily from broken skin.

- Infection control actions that can help stop the spread of germs from skin include:
  - ▶ Cleaning hands and keeping skin healthy
  - ▶ Using personal protective equipment (PPE), like gloves and gowns
  - ▶ Cleaning and disinfecting surfaces and devices
  - ▶ Performing safe injections and handling sharps safely

Gut

- The gastrointestinal (GI), or digestive, system, has two parts: the upper GI tract and the lower GI tract.
  - ▶ The lower GI tract, or "the gut," usually refers to most of the intestines (small and large bowels), rectum, and anus.
    - Most GI germs that cause infection control problems come from the gut.
  - ▶ The upper GI tract includes the mouth, esophagus, stomach, and first part of the small intestine (the duodenum).
    - It has different types of bacteria and fungi that we usually think about separately from the lower GI tract.
- Most gut bacteria usually don't cause problems in healthy people.
  - ▶ The intestines are filled with bacteria and some yeasts that are an important part of a healthy immune system.
  - ▶ Common germs in the gut include: *Escherichia coli* (*E. coli*), *Klebsiella*, *Clostridioides difficile* (*C. difficile* [*C. diff*]), *and Candida*, a type of yeast.
- Because these germs live in the intestines, they're in our feces, or our stool.
  - ▶ These germs travel easily in stool from the gut reservoir to other places.
  - ▶ It's common to find them in places outside of the gut, especially the skin around the groin, the hands, and the environment – like surfaces in bathrooms.
- Because everyone goes to the bathroom, the germs in stool can spread onto our hands and skin when we wipe or change a diaper.
  - ▶ When that happens, the germs can spread to other body reservoirs, the environment, and other people, and make people sick.
- Bypassing or breaking down the body's defenses is another way gut germs can be spread.
  - ▶ Gut germs that are on someone's skin can get into their body from a procedure like an IV insertion.
  - ▶ Procedures done on the gut, like surgeries, can break through the gut's normal defenses and spread germs to other parts of the body.
- Infection control actions that can help stop the spread of gut germs include:

- ▶ Cleaning hands
- ▶ Using PPE, like gloves and gowns
- ▶ Cleaning and disinfecting surfaces and devices
- ▶ Handling linens and textiles carefully
- ▶ Managing trash and waste appropriately

Respiratory System

- ■ The respiratory system consists of:
  - ▶ the upper airway, including the nose, mouth, throat, and windpipe; and
  - ▶ the lower airway, including the lungs.
- ■ Many germs live in the upper airway.
  - ▶ Like with the skin and the GI system, most of the germs that are commonly found in the nose, mouth, and throat keep those parts of the body healthy.
  - ▶ But some germs are there because someone has an infection, like a cold.
  - ▶ Germs in the nose and mouth can easily be spread to the skin and hands when you touch your face, and from there, they can spread to surfaces and other people.
- ■ The defenses of the nose, mouth, and throat keep a lot of germs from getting to the lungs.
  - ▶ When germs do get into the lungs, the lungs have a lot of defenses for getting germs out, like coughing.
  - ▶ But when germs reach someone's lungs and infect them, they can spread to other people through respiratory droplets the infected person makes when they talk, breathe, sneeze, or cough.
    - ● Certain germs in the upper airway, especially viruses, can also be spread this way.
- ■ Germs commonly found in the respiratory system include *Pseudomonas*, *S. aureus* (including MRSA), and – when someone is infected – respiratory viruses.
- ■ Infection control actions that can help stop the spread of germs from the respiratory system include:
  - ▶ Coughing into your elbow, cleaning your hands, and properly disposing of tissues
    - ● These actions are also known as respiratory hygiene and cough etiquette
  - ▶ Wearing a mask for source control that covers the nose and mouth to prevent the spread of respiratory droplets
  - ▶ Ensuring good ventilation
  - ▶ Maintaining physical separation in common areas
  - ▶ Using PPE, like respirators and gowns
  - ▶ Cleaning and disinfecting, especially surfaces

Blood

- Blood is sterile and is not supposed to have germs in it.

- However, some viruses can cause infections that last for a long time and release virus into the blood. If a person is infected and untreated, blood can then spread the virus to other people.

  ▶ Examples of these viruses are HIV, hepatitis B, and hepatitis C.

- The most common way that these bloodborne viruses spread in healthcare is when infected blood is on a sharp item that causes a needlestick or a cut or break in someone's skin and then enters that person's body, causing a new infection.

  ▶ If a needle or syringe is reused on more than one patient, or a vial of medication gets contaminated with blood, germs in that blood could be spread to others.

- Blood is nutritious food for bacteria.

- If blood gets on germs in the environment, like on linens or a device, those germs are likely to grow and multiply, and can spread.

- Infection control actions that can help stop the spread of germs from blood include:

  ▶ Performing safe injections and handling sharps safely

  ▶ Using PPE, like gloves, gowns, and eye protection

  ▶ Cleaning hands

  ▶ Handling linens and textiles carefully

  ▶ Cleaning and disinfecting surfaces and devices

PROJECT **FIRST** LINE

CDC's National Training Collaborative
for Healthcare Infection Prevention & Control

For more information, please contact

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