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# Inside Infection Control Participant Booklet

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# Welcome

Thank you for joining us. This booklet is a quick guide to the information presented in each topic, including topic overviews, learning objectives, key messages and content outlines, and space to write. Please keep it with you to use during the sessions.

## About Project Firstline

Our goal at Project Firstline is to make sure you have the infection control knowledge that you need and deserve to keep yourself, your patients, your colleagues, and your family safe.

To stop the spread of infectious disease threats—including COVID-19—anyone working in a healthcare facility needs a basic knowledge of infection control and must understand and be ready to use infection control processes and procedures throughout their work day, including during every patient care activity and healthcare interaction.

CDC's Project Firstline is a collaborative of diverse healthcare, public health, and academic partners that is working to provide engaging, innovative, and effective infection control training for millions of frontline U.S. healthcare workers as well as members of the public health workforce.

## Infection Control

- **Works**—The right practices can stop germs from spreading in healthcare facilities.
- **Is a Team Effort**—Infection control is most effective when all team members use it consistently.
- **Matters**—Infection control is a critical part of safe healthcare delivery in all healthcare settings.

# What's the Goal of Infection Control?

## Overview

**Topic One:** Welcome + Concept of "Infection Control"

**Content summary:** The goal of infection control is to keep people from getting sick.

**Inside Infection Control Video:** *What's the Goal of Infection Control?*

## Learning Objectives

By the end of this episode, participants will be able to:

Articulate at least one (1) primary goal of infection control

## Key Educational Takeaways

- The goal of everything we do in infection control, for any disease, is to keep people from getting sick.
- The goal of Project Firstline is to make sure you have the infection control knowledge that you need and deserve to keep yourself, your patients, your colleagues, and your family safe.

## Content Outline

- This session will cover the basic ideas behind infection control, and how they apply to COVID-19.
- This session will also explain how infection control actions help keep you, your patients, your coworkers, and your community safe.
- The goal of everything we do in infection control, for any disease, is to keep people from getting sick.
- The goal of CDC's infection control recommendations is to protect you, and everyone in the facility, from getting infected while you're giving your patients the essential care they need.
- The goal of Project Firstline is to make sure you have the infection control knowledge that you need and deserve to keep yourself, your patients, your colleagues, and your family safe.
- There are a lot of infection control recommendations for COVID-19, and it's really important to do them right: we're here to help with that.
- We're here to help you understand not just what we're doing to control COVID-19 in healthcare, but why we're doing it, because we believe that you can do your job best when you understand why you're doing what you're doing.

# Notes

# SARS-CoV-2? COVID-19? What's the Difference?

Please note that the following three pages are all part of **Topic Two: The Basic Science of Viruses**.

## Overview

**Topic Two:** The Basic Science of Viruses

**Content summary:** SARS-CoV-2 is the virus that causes the disease COVID-19.

**Inside Infection Control Video:** *SARS-CoV-2? COVID-19? What's the Difference?*

## Learning Objectives

By the end of this episode, participants will be able to:

Differentiate one (1) core difference between SARS-CoV-2 and COVID-19

## Key Educational Takeaways

- SARS-CoV-2 is the official, scientific name of the virus, the germ that causes the disease COVID-19.
- COVID-19 is the name of the disease—the fever, cough, chills and other symptoms that people have when they are infected with the virus SARS-CoV-2.

## Content Outline

- SARS-CoV-2 is the virus that causes the disease COVID-19.
- We get infected with SARS-CoV-2 the virus, which makes us sick with COVID-19 the disease.
- Having one name for the virus, and another name for the disease it causes, happens in other places in medicine—like with the disease chickenpox, which is caused by the varicella zoster virus.
- Since SARS-CoV-2 is the official, scientific name of the virus that causes COVID-19, we use that name when we talk about what it does to make people sick, when test results are recorded, and often when we talk about vaccines.
- COVID-19 stands for COroNAVirus Disease 2019: CO - VI - D - 19.
- COVID-19 is the illness that people come down with fever, chills, cough, difficulty breathing, and all the other symptoms that people have.
- COVID-19 is the “disease,” and it’s how we mostly talk about the pandemic.
- We don’t want to get infected with SARS-CoV-2 or sick with COVID-19, and we don’t want anyone else to, either—that’s where infection control comes in.

## Notes

# What's a Virus?

## Overview

**Topic Two:** The Basic Science of Viruses

**Content summary:** SARS-CoV-2 is a virus. Viruses have three main parts: genes, proteins, and an envelope.

**Inside Infection Control Video:** *What's a Virus?*

## Learning Objectives

By the end of this episode, participants will be able to:

Identify, and explain to others, the three (3) main parts of a virus

## Key Educational Takeaways

- All viruses have two parts:
  - ▶ Genes that contain all the information needed to make more virus copies
  - ▶ Proteins that protect the genes and help the virus spread
- Some viruses—SARS-CoV-2 is one of them—also have a third part: an envelope made of special fats that protects the genes and proteins.

## Content Outline

- If we know a little bit about viruses, then we can understand how it travels between people and makes us sick, and why the things we do for infection control work to stop this from happening.
- COVID-19 is caused by a virus: SARS-CoV-2.
- Viruses use living things, including people, to make copies of themselves, and then keep spreading from one living thing to another.
- All viruses have genes that contain all the information needed to make more virus copies, like an “instruction booklet” or a “blueprint.”
- Viruses have proteins that come together to create a shell that protects the “blueprint” genes.
- Some proteins stay inside the shell and are only used when it’s time to build more virus copies, but other proteins can stick out from the shell and help the virus get from one place to another in the body, and also from one person to another.
- Some viruses—not all, but SARS-CoV-2 is one of them—have another protective layer covering the shell called an envelope.
- The envelope is made of fats with some proteins mixed in.
- Some proteins stick out of the envelope to help the virus get around and into cells, and also to help it spread from one person to another.



# Notes

# How Do Viruses Make You Sick?

## Overview

**Topic Two:** The Basic Science of Viruses

**Content summary:** How do viruses make you sick?

**Inside Infection Control Video:** *How Do Viruses Make You Sick?*

## Learning Objectives

By the end of this episode, participants will be able to:

- Describe three (3) steps showing how viruses use the cells of living things to make more copies of themselves
- Explain one (1) reason why infection control actions focus on keeping respiratory droplets out of the air and away from other people

## Key Educational Takeaways

- Viruses are able to use cells in living things, including people, to make copies of themselves. It's how viruses spread within a body, and from person to person.
- When enough viruses have been able to get into our cells and make copies of themselves, the body recognizes that there's an infection, and our immune system revs up to fight off the virus.
- It is the activity of our immune system fighting the virus that makes us feel sick.

## Content Outline

- Viruses are able to use cells in living things, including people, to make copies of themselves. It's how viruses spread within a body, and from person to person.
- Our bodies are made up of billions of microscopic cells.
- On the outside of our body's cells, there are tiny parts that stick out, that are made of proteins.
- These tiny parts act like a lock on a door: if you have the right "key" for the "lock," then you can get into the cell. If you don't, then you can't.
- Some viruses have a little part that sticks out on their outside of the virus that works like a false key that will fit the lock to at least one type of our cells.
- The virus's false key isn't an exact match to our cell's lock, but it's close enough that the virus can hack in and invade that type of cell.
- When the virus can get inside, it hijacks the cell's machinery and uses it to make more copies of itself.
- Those new virus copies, with their false keys on the outside, then break out of the infected cell and move on to infect new cells.
- In many cases, the cell that's been hijacked and infected is destroyed in the process.
- Our bodies don't mean for this to happen. The locks on our cells are for other things that our bodies naturally do.

- When enough viruses have been able to use their false keys to get into our cells and make copies of themselves, the body recognizes that there's an infection, and our immune system revs up to fight off the virus.
- Sometimes we know that our immune system is fighting something, because we feel sick – but sometimes we don't know it's happening at all.
- When someone who is infected with a respiratory virus, whether they feel sick or not, breathes out or talks, their respiratory droplets, with virus in them, are carried out.
- Those droplets with virus could reach other people, getting into their nose, throat, lungs, and eyes, and letting the virus use its key on their cells to start the process all over again.
- To keep this from happening, many of the things we do for infection control focus on keeping respiratory droplets out of the air and away from other people.

## Notes

# What's a Respiratory Droplet? Why Does It Matter?

## Overview

**Topic Three:** How Respiratory Droplets Spread COVID-19

**Content summary:** How does SARS-CoV-2 get from one person to another: what is a respiratory droplet?

**Inside Infection Control Video:** *What's a Respiratory Droplet? Why Does It Matter?*

## Learning Objectives

By the end of this episode, participants will be able to:

- Describe one characteristic (1) of respiratory droplets
- Understand one (1) primary way that SARS-CoV-2 moves between people
- Explain one (1) reason why infection control actions focus on keeping respiratory droplets out of the air and away from other people

## Key Educational Takeaways

- Our breath contains a lot of water that you can't usually see.
  - ▶ When we see our breath in cold air or see our glasses fog up when we're wearing a mask, what we're seeing is all the water in our breath.
  - ▶ Those are our respiratory droplets.
- The main way that SARS-CoV-2, the virus that causes the disease COVID-19, travels between people is through respiratory droplets.
  - ▶ When someone is infected with SARS-CoV-2, the droplets that they breathe out have virus particles in them.
  - ▶ People who are close by can breathe the droplets in, or the droplets can land on their eyes, and they can get infected.

## Content Outline

- Different viruses spread from person to person in different ways.
- The main way that SARS-CoV-2, the virus that causes the disease COVID-19, travels between people is through respiratory droplets.
- These droplets aren't large, like you would see from a splash in a sink. They're very tiny.
- The droplets have different sizes, but most of them are so small that we can't see them most of the time.
- We usually can't see the water in our breath, but when we do things like breathe on a mirror and fog it up, we're seeing our respiratory droplets.

- We're also seeing our respiratory droplets when we're outside in cold weather and can see our breath, or when our eyeglasses fog up when we're wearing a mask.
- Every time we let breath out of our nose or mouth, we're letting out respiratory droplets – when we're talking, singing, coughing, or even just breathing normally.
- The droplets not only have different sizes, they also travel in the air for different distances.
- The droplets are small and light enough that they can reach other people who are close by.
- When someone is infected with SARS-CoV-2, the droplets that they breathe out have virus particles in them.
- If people who are close by aren't wearing masks or aren't behind a barrier, then they can breathe the droplets in, or the droplets can land on their eyes.
- When droplets carrying virus get into someone's nose, mouth, or eyes, or travels to their lungs, the virus lands on cells.
- Like many other respiratory viruses, SARS-CoV-2 is able to get into a lot of cells in the nose, throat, eyes, and lungs. The virus can then hijack those cells and make the person sick with COVID-19.
- Since respiratory droplets are the main way that SARS-CoV-2 moves between people, many of the infection control actions we need to take in healthcare are things to keep people, including our patients, our coworkers, and ourselves, from breathing in each other's respiratory droplets.

## Notes

# How Do Viruses Spread from Surfaces to People?

## Overview

**Topic Four:** How Viruses Spread from Surfaces to People

**Content summary:** How can the virus be transmitted on surfaces?

**Inside Infection Control Video:** *How Do Viruses Spread from Surfaces to People?*

## Learning Objectives

By the end of this episode, participants will be able to:

- Describe two (2) ways viruses can spread from surfaces to people
- Explain one (1) reason why good hand hygiene and environmental cleaning are important to keep germs from spreading in healthcare

## Key Educational Takeaways

- Although COVID-19 is mainly spread through respiratory droplets, another way you can get sick is if you touch something that has live virus on it and then touch your face without cleaning your hands first.
- Virus can get on surfaces when respiratory droplets land on those surfaces.
- Virus can also get on surfaces when body fluids from an infected person – like spit and snot – get onto things nearby.

## Content Outline

- We get sick with COVID-19 when the virus SARS-CoV-2 gets to our nose, mouth, or eyes, mainly by breathing it in, or when respiratory droplets from someone who's infected with the virus get on our eyes.
- The virus can also be carried to our mouth, nose, and eyes if we touch something that has live virus on it, and then you touch our face without cleaning our hands first.
- Respiratory droplets are all very small, but they are different sizes.
- When they're breathed out, some of the droplets will be carried away by the air and travel wherever the air currents are flowing.
- Many of those droplets are big enough – still tiny, but big enough – that they won't travel very far in the air, but will instead start falling downwards.
- When the droplets fall, they don't just fall on the ground. Some of them will fall things that are nearby, like patient beds, tables, waiting room chairs, desks, our clothes, and more.
- Once the droplets land on something, the virus in them can survive for a little while – it's not long for most surfaces, but it's enough for someone to touch the surface and get the virus onto their hands.
- From the hands, the virus can get into the body if you touch your face without cleaning your hands first, and it happens a lot.

- Virus can also get onto surfaces when an infected person touches their eyes, nose, or mouth and gets virus on their hands, and then touches another surface. This leaves virus on that surface that someone else can pick up on their hands and transfer to their face.
- In healthcare, body fluids – including spit and snot – can get onto things near a patient. If anyone touches those surfaces and doesn't clean their hands, they can spread virus around that way, to themselves, to other surfaces, and to other people.
- Understanding how viruses spread on surfaces helps show the importance of good hand hygiene and good cleaning of the environment for infection control, so viruses and other germs don't spread.

## Notes

# How Does COVID-19 Spread? A Review.

## Overview

**Topic Five:** How COVID-19 Spreads: A Review

**Content summary:** Brief review of how viruses spread by respiratory droplets and on surfaces.

**Inside Infection Control Video:** *How Does COVID-19 Spread? A Review.*

## Learning Objectives

After viewing this video, learners will be able to:

Describe two (2) ways that SARS-CoV-2 spreads

## Key Educational Takeaways

- The main way that SARS-CoV-2, the virus that causes the disease COVID-19, travels between people is through respiratory droplets in our breath.
- Another way you can get sick with COVID-19 is if you touch something that has live SARS-CoV-2 virus on it, and then touch your face without cleaning your hands first.

## Content Outline

- The main way SARS-CoV-2 spreads is by respiratory droplets.
- When someone who's infected with the virus breathes out, coughs, or talks, the tiny droplets of water that are carrying virus particles that are in their breath can reach a person who's close by.
- Then those droplets are breathed in, or land on the other person's eyes.
- This can happen whether the infected person knows they have the virus or not.
- The virus can also get around when the droplets carrying them get on surfaces, and then from surfaces onto your hands.
- Droplets can fall onto things from a cough or sneeze, or just from just being breathed out.
- Droplets can also be spread around through someone's hands, if they're infected and touch their nose and mouth and then touch something else, like a door handle or an IV pole, without cleaning their hands first.
- Then the virus can get picked up by someone else on their hands, and make its way to their eyes, nose, or mouth, eventually infecting them and making them sick.
- The next series of videos from Project Firstline will focus on the infection control actions that are recommended to stop germs, including SARS-CoV-2, the virus that causes COVID-19, from spreading in healthcare.



## Notes



**PROJECT  
FIRSTLINE**

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