

TOPIC 14: ASYMPTOMATIC SPREAD OF COVID-19



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Division of Infectious Diseases and Epidemiology

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AGENDA

- Learning Objectives
- Introductions
- How Do Viruses Work?
- How Can Viruses Spread From Someone Who Doesn't Feel Sick?
- Next Steps

LEARNING OBJECTIVES

- Explain how a person can be infected with SARS-CoV-2 and not feel sick but can **still spread the virus to others**.
- Discuss reasons **why infection control recommendations** for COVID-19, such as masking for source control, **are in place in healthcare settings**.

ACKNOWLEDGMENT

This Project Firstline Presentation is brought to you by the North Dakota Department of Health (NDDoH), Division of Infectious Diseases and Epidemiology, and presented by NDDoH COVID-19 Nurse Consultants. All presenters have been trained on Project Firstline materials in correlation with the Centers for Disease Control (CDC).



INTRODUCTIONS



Eric Akosah Appiah, BSN

- Bismarck, ND
- COVID-19 Nurse Consultant
- Project First Line Facilitator

INTRODUCTIONS



Sherry Walters RN BSN

- Devils Lake Area
- COVID-19 Nurse Consultant
- Project Firstline Facilitator

POLL

**Answer the question considering your experiences in your work life.
Select all that apply:**

During the COVID-19 pandemic, I have cared for:

- People with COVID-19 who were very sick (e.g., fever, fatigue, difficulty breathing),
- People with COVID-19 who had mild symptoms (e.g., cold symptoms), or
- People with COVID-19 who had no symptoms.

RECAP/HOW DO VIRUSES WORK?

- **Viruses are able to use cells of living things, including people, to make copies of themselves.**
- **When enough virus gets into a person's cells and starts making copies of itself, the immune system revs up to fight the virus.**
- **SARS-CoV-2, the virus that causes COVID-19, is spread by respiratory droplets that are released into the air when an infected person talks, breaths, coughs, or sings.**

INSIDE INFECTION CONTROL

HOW CAN COVID-19 SPREAD WHEN YOU DON'T FEEL SICK?

EPISODE 24



QUIZ TIME

Let's do a quick review on the type of infections that Dr. Carlson mentioned.



DEFINITIONS

Pre-symptomatic Infection

When a person has been infected with a virus and hasn't started feeling sick yet but will develop symptoms.

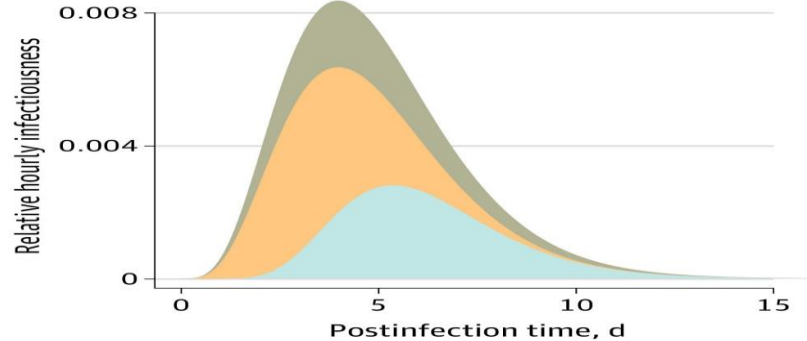
Asymptomatic Infection

When a person is infected with a virus and will never feel any symptoms at all.

SARS-COV-2 TRANSMISSION FROM PEOPLE WITHOUT COVID-19 SYMPTOMS-JOHANSSON ET AL 2021

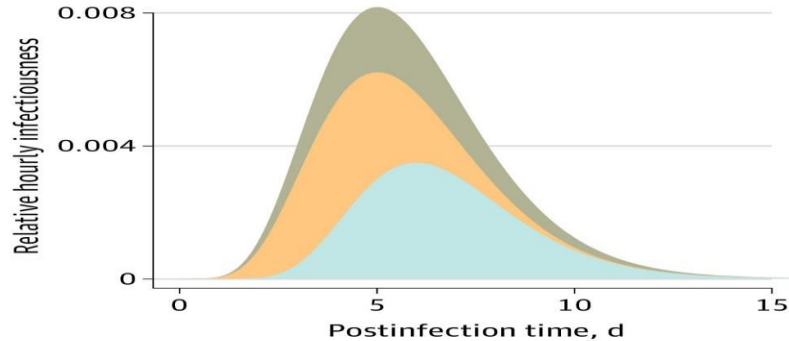
Peak infectiousness: day 4
 Presymptomatic: 43%
 Never symptomatic: 24%
 Symptomatic: 33%

A Presymptomatic transmission with peak infectiousness at day 4



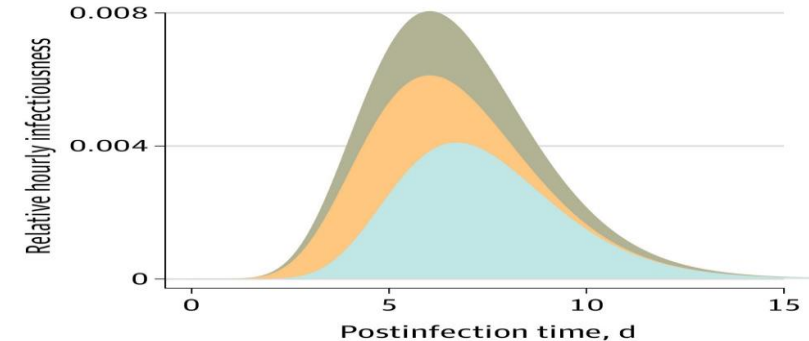
Peak infectiousness: day 5
 Presymptomatic: 35%
 Never symptomatic: 24%
 Symptomatic: 41%

B Presymptomatic transmission with peak infectiousness at day 5



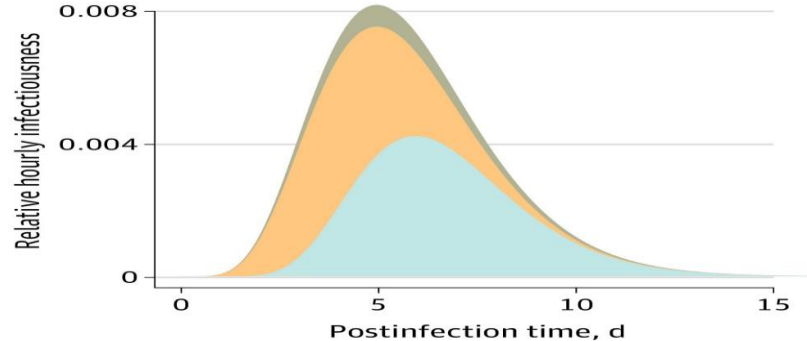
Peak infectiousness: day 6
 Presymptomatic: 27%
 Never symptomatic: 24%
 Symptomatic: 49%

C Presymptomatic transmission with peak infectiousness at day 6



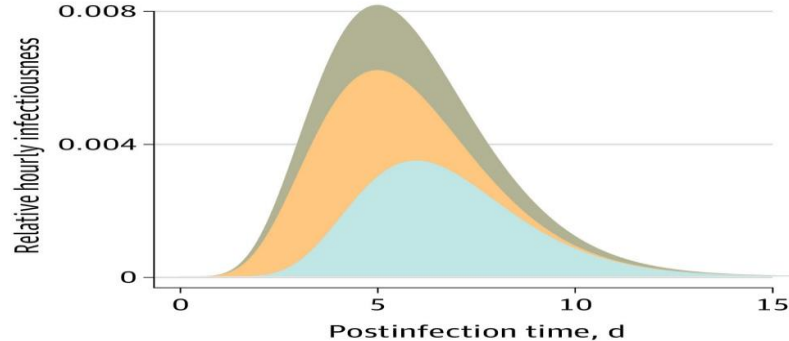
Peak infectiousness: day 5
 Presymptomatic: 42%
 Never symptomatic: 8%
 Symptomatic: 50%

D Transmission from individuals who are never symptomatic (8%)



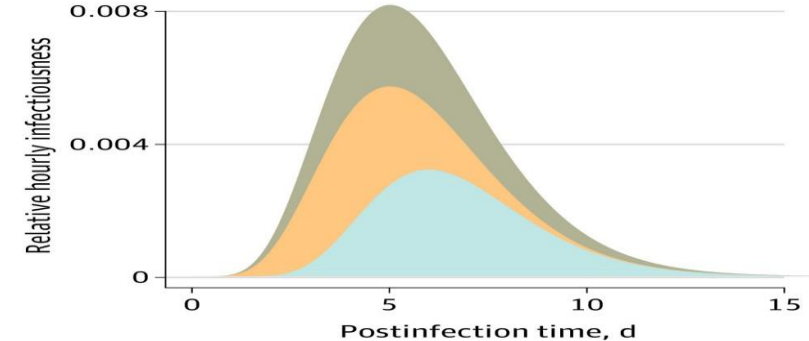
Peak infectiousness: day 5
 Presymptomatic: 35%
 Never symptomatic: 24%
 Symptomatic: 41%

E Transmission from individuals who are never symptomatic (24%)



Peak infectiousness: day 5
 Presymptomatic: 32%
 Never symptomatic: 30%
 Symptomatic: 38%

F Transmission from individuals who are never symptomatic (30%)



“If 17.9% of infections are asymptomatic, we found that the pre-symptomatic stage and asymptomatic infections account for **48%** and **3.4%** of transmission, respectively”

Moghadas et al 2020



RECOGNIZING PEOPLE WHO ARE CONTAGIOUS

POLL

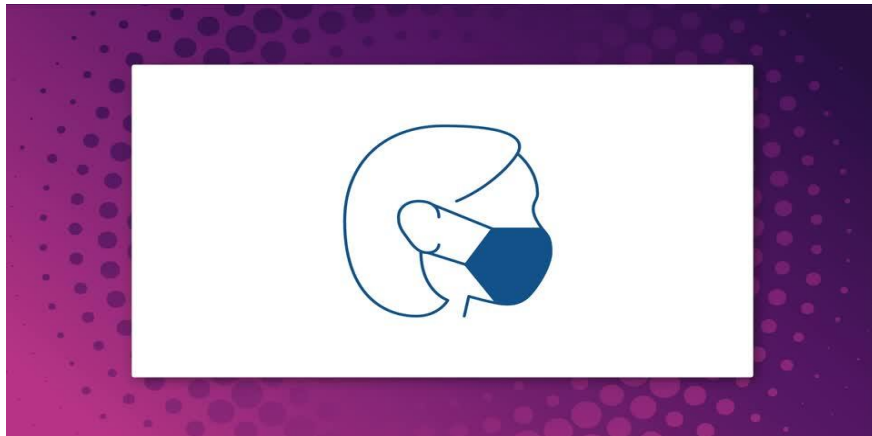
Can you
tell who has
COVID-19?



No, even people who appear healthy and show no symptoms may have COVID-19 and may be able to spread the SARS-CoV-2 virus.

INTERESTING FACTS...

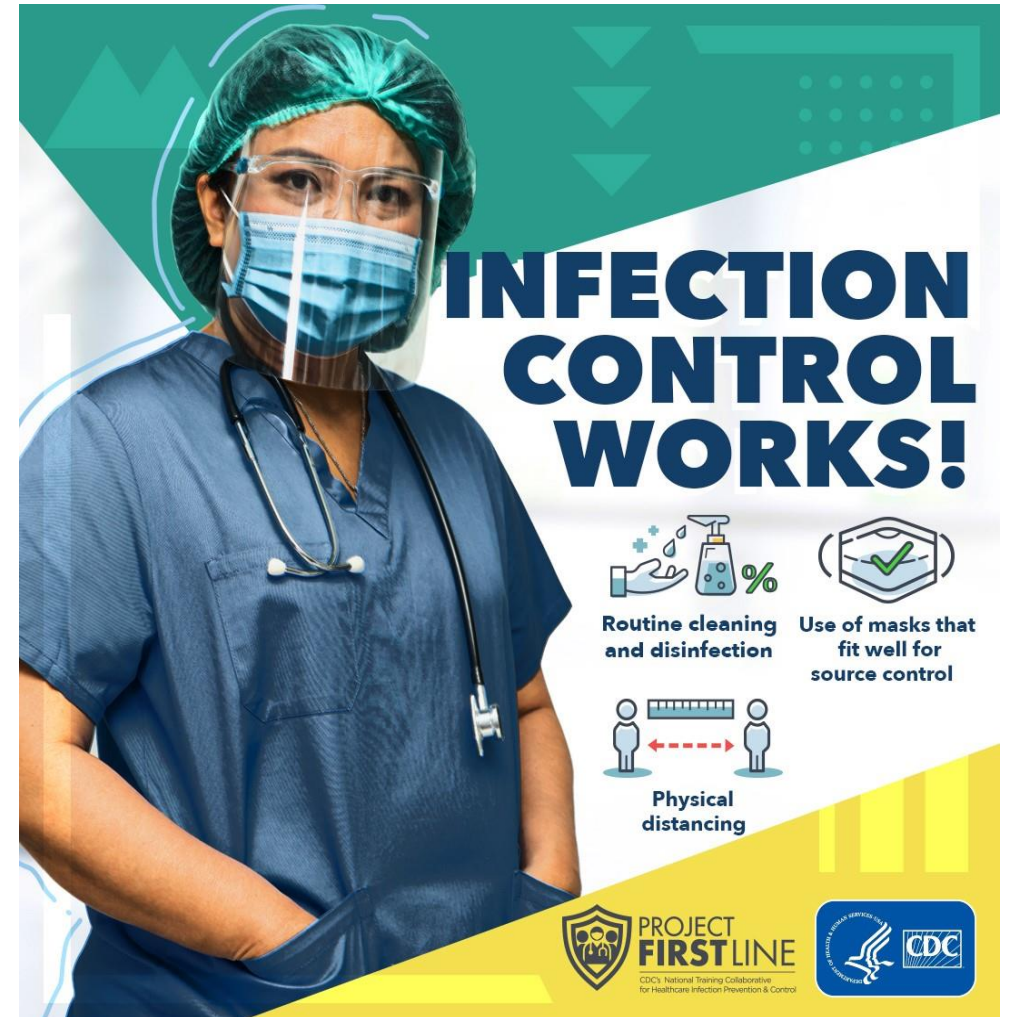
The flu can also be spread by people who are **pre-symptomatic** or **asymptomatic**.



- People with flu are most contagious 3-4 days after their illness begins.
- Some otherwise healthy adults may be able to infect others beginning 1 day before symptoms develop and up to 5-7 days after becoming sick.
- Some people, especially young children and people with weakened immune systems, might be able to infect others with flu viruses for an even longer time.

WHY?

- People can be infected with a virus and their immune system can be working – **and they might not feel sick.**
- People who may not feel sick or show symptoms can still **spread viruses.**
- That's why **infection control recommendations** for COVID-19, such as masking for source control, are in place in healthcare settings.



RESOURCES

Moghadas, S. M., Fitzpatrick, M. C., Sah, P., Pandey, A., Shoukat, A., Singer, B. H., & Galvani, A. P. (2020, July 28). The implications of silent transmission for the control of COVID-19 outbreaks..

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7395516/>

Johansson, M. A., Quandelacy, T. M., Kada, S., Prasad, P. V., Steele, M., Brooks, J. T., Slayton, R. B., Biggerstaff, M., & Butler, J. C. (2021, January 4). SARS-COV-2 *transmission from people without COVID-19 symptoms.*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7791354/>

RESOURCES

Project Firstline on CDC:

www.cdc.gov/ProjectFirstline

CDC's Project Firstline on Facebook:

<https://www.facebook.com/CDCProjectFirstline>

CDC's Project Firstline on Twitter:

https://twitter.com/CDC_Firstline

Project Firstline *Inside Infection Control* on YouTube:

<https://www.youtube.com/playlist?list=PLvrp9iOILTQZQGtDnSDGViKDdRtlc13VX>

To sign up for Project Firstline e-mails, click here:

https://tools.cdc.gov/campaignproxyservice/subscriptions.aspx?topic_id=USCDC_2104

EVALUATION & QUESTIONS

Take the end of course evaluation for CEU certificate:

https://ndhealth.co1.qualtrics.com/jfe/form/SV_dburyXO3xpdPatw

If you are a room moderator for a group in attendance, fill out the Group Attendance Form. EACH attendee will need to complete the evaluation form.

Submit all forms to dohpfl@nd.gov for certificates.

Recordings can be found on:

www.health.nd.gov/projectfirstline



Questions? Email NDDoH Project Firstline at: dohpfl@nd.gov

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