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COVID-19: Transmission & Precautions

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RNnext.com
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A self-study guide: *All references are active hyperlinks.*

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Don't be scared.
Be informed.



**You can break the
chain of infection.**

Next Sick Person

(Susceptible Host)

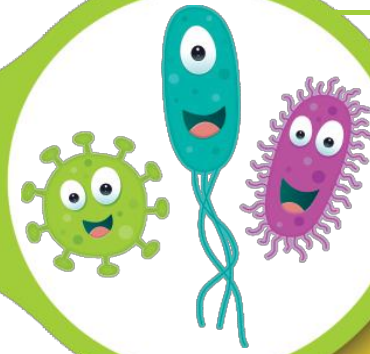
- Babies
- Children
- Elderly
- People with a weakened immune system
- Unimmunized people
- Anyone



Germ

(Agent)

- Bacteria
- Viruses
- Parasites



How Germs Get In

(Portal of Entry)

- Mouth
- Cuts in the skin
- Eyes



Chain of Infection

[Ottawa Public Health, 2020](#)

Where Germs Live

(Reservoir)

- People
- Animals/Pets (dogs, cats, reptiles)
- Wild animals
- Food
- Soil
- Water



Germ Get Around

(Mode of Transmission)

- Contact (hands, toys, sand)
- Droplets (when you speak, sneeze or cough)



How Germ Get Out

(Portal of Exit)

- Mouth (vomit, saliva)
- Cuts in the skin (blood)
- During diapering and toileting stool)



CDC isolation precautions

REVIEW

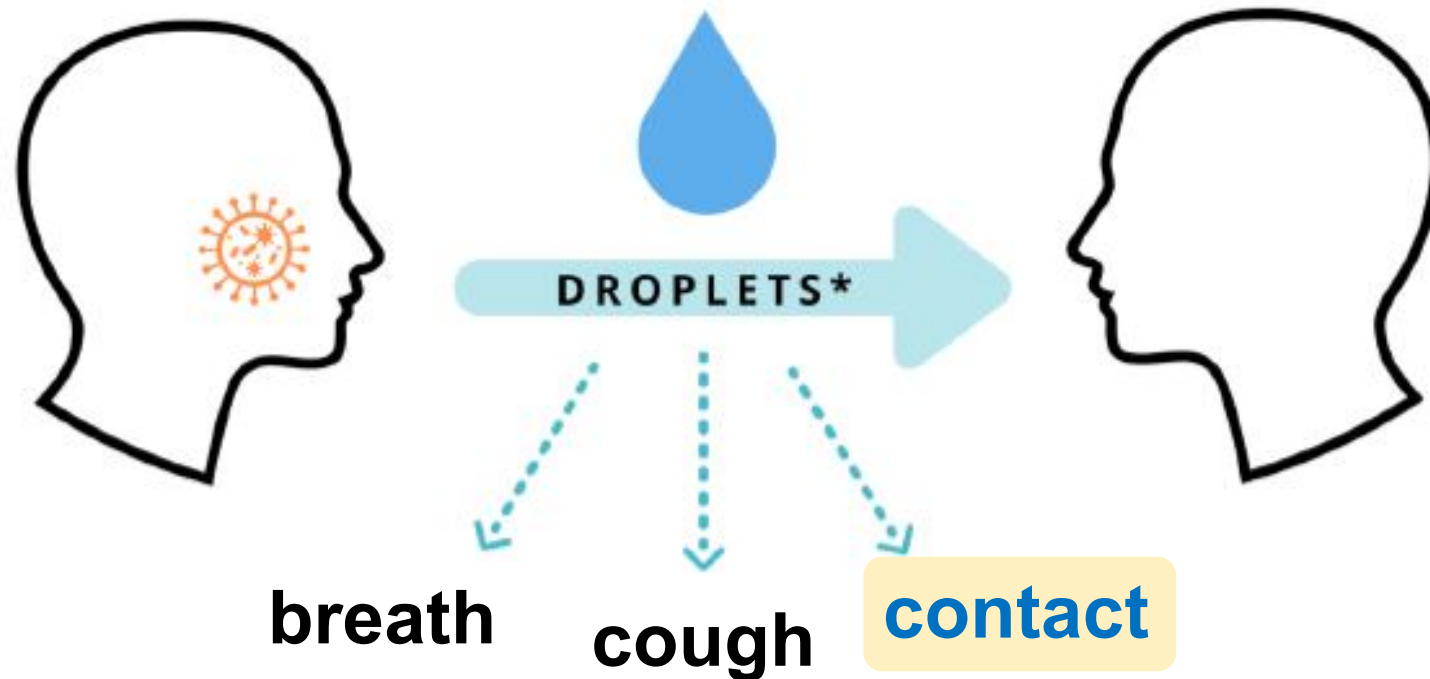
Standard	"Tier One" – infection control for all patients, all settings	
Contact <i>(c. diff, draining wounds)</i>	To prevent direct or indirect contact w/ contaminated body fluids, equipment or environment.	standard + gloves & gowns <ul style="list-style-type: none"> • <i>private room (or roommate w/ same infection)</i>
Droplet <i>>5 microns (influenza, pertussis)</i>	Within 3 feet of patient who is coughing or sneezing or during procedures that dispel droplets into air.	standard + mask or respirator* <i>(see notes**)</i> <ul style="list-style-type: none"> • <i>private room (or roommate w/ same infection)</i> • <i>patient wears mask outside room/home</i>
Airborne <i><5 microns (measles, TB, varicella)</i>	To prevent exposure via airborne route – including procedures such as nebulizing, suctioning, intubation.	standard + respirator* <i>(see notes**)</i> <ul style="list-style-type: none"> • <i>private room</i> • <i>negative pressure (air flows into) room</i> • <i>patient wears mask outside room/home</i>

*Respirators filter air you breathe (e.g., N95 mask). Respirator may be used in droplet w/ certain infections, like TB.

****Gown & gloves** if contact w/ secretions likely. If splashing/spraying possible, wear **full face (eyes, nose, mouth) protection**.

Spread by **respiratory droplets**

- from infected person coughing, talking, singing, etc.
 - between people in close contact
- droplets (larger than 5 microns) travel up to 6 feet



Contact precautions...

Do not touch
your eyes, nose,
and mouth.



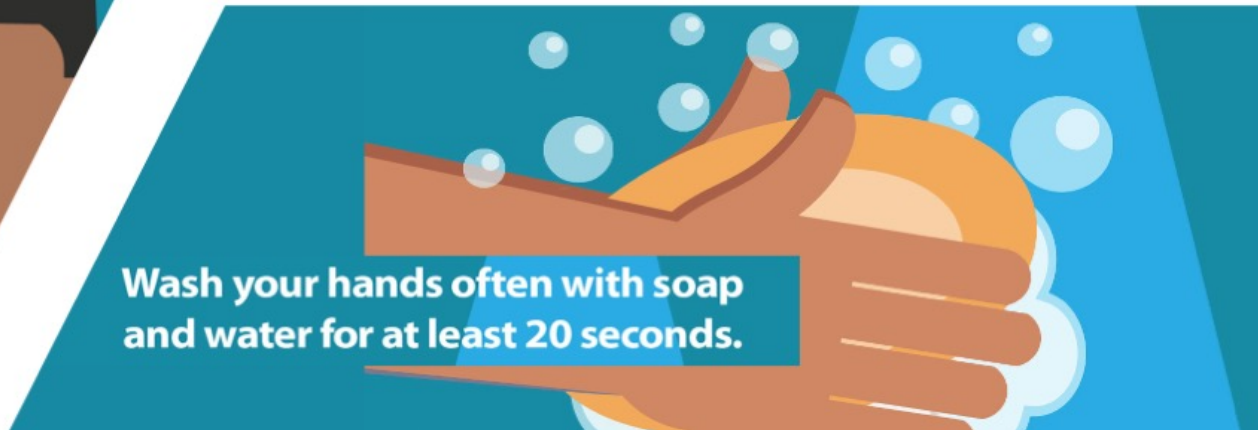
Clean and disinfect frequently
touched objects and surfaces.



Cover your cough
or sneeze with
a tissue, then
throw the tissue
in the trash and
wash your hands.



Wash your hands often with soap
and water for at least 20 seconds.



Fomite:
contaminated
surface or object

**Indirect virus
transmission**
can occur by
touching a fomite
then touching own
mouth/nose/eyes

REDUCE THE SPREAD OF COVID-19.

WASH YOUR HANDS.

REVIEW



1

Wet hands with
warm water



2

Apply soap



3

For at least 20
seconds, make
sure to wash:



4

Rinse well



5

Dry hands well
with paper towel



6

Turn off tap using
paper towel



palm and back
of each hand



between fingers



under nails



thumbs

Washing hands: purple paint demo

https://youtu.be/nEzJ_QKjT14



Droplet vs. Airborne

DROPLET

larger than
5 microns

spread
up to 6 ft

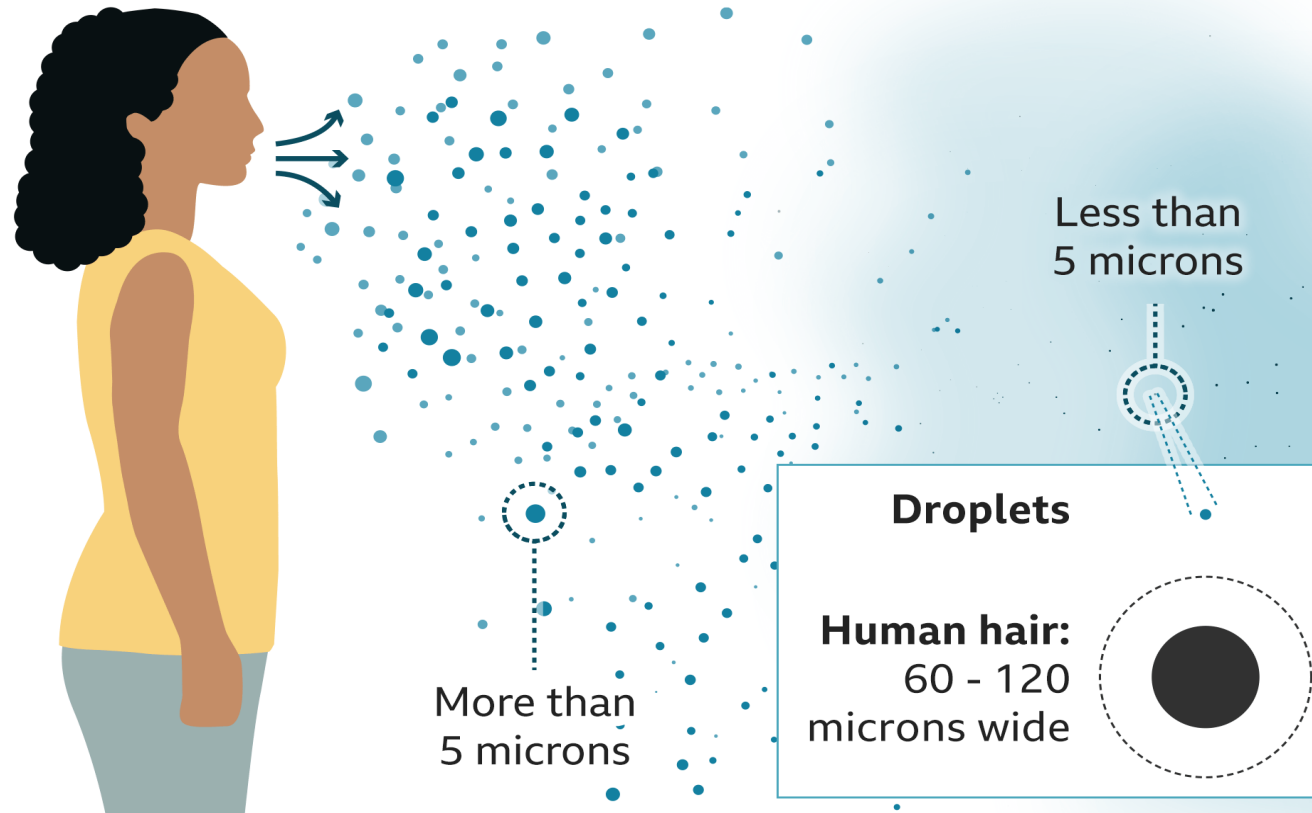
examples:
influenza or pertussis
(whooping cough)

Droplet transmission

Coughs and sneezes
can spread droplets of saliva
and mucus

Airborne transmission

Tiny particles, possibly produced
by talking, are suspended in the
air for longer and travel further



AIRBORNE

smaller than
5 microns

spread
beyond 6 ft
& stay in air
longer

examples:
measles, TB, or
varicella (chickenpox)

Airborne Transmission

IN HEALTHCARE FACILITIES

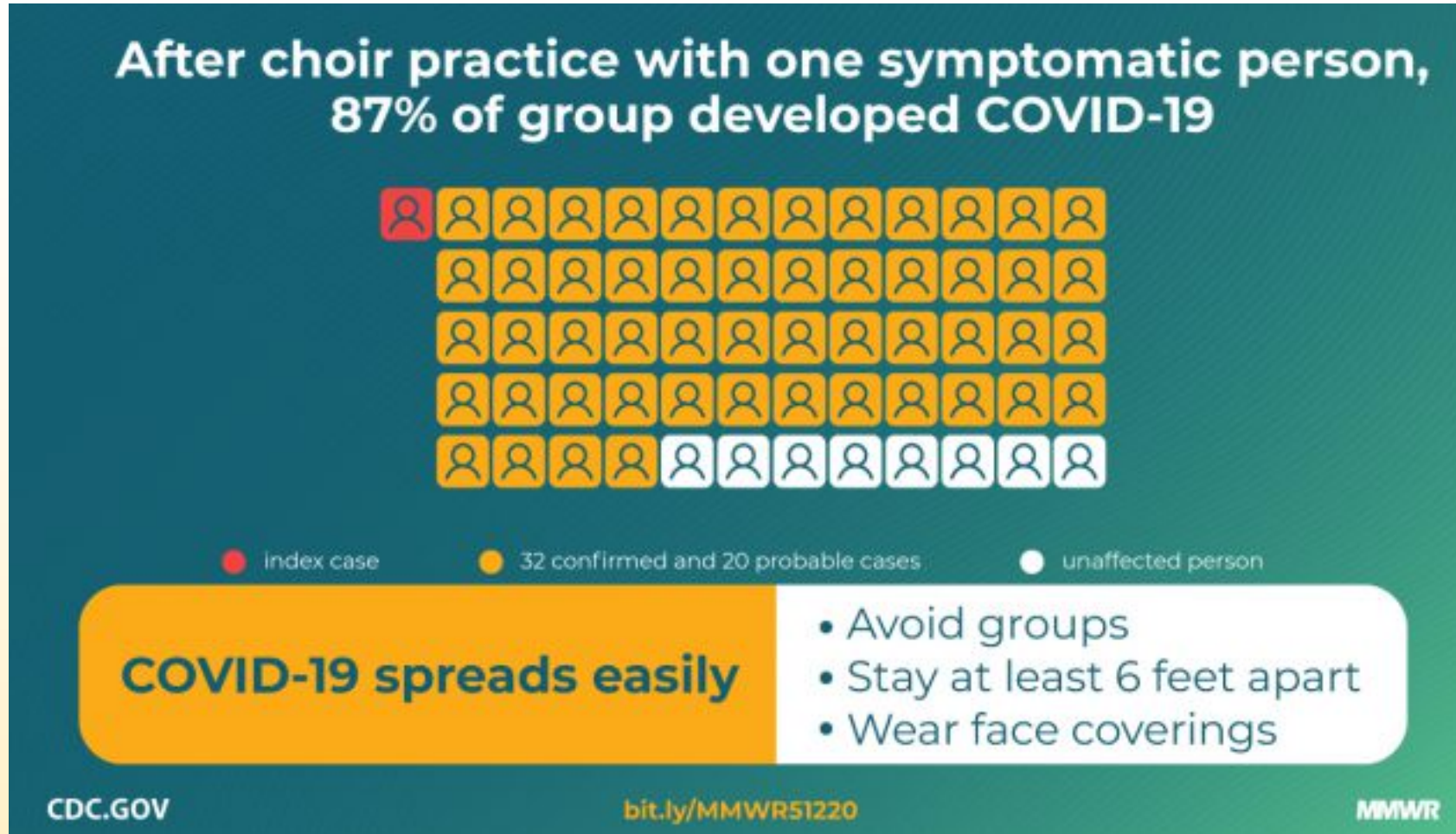
Aerosol-generating procedures:

- CPR
 - Intubation / extubation
 - Care of intubated patient
(if inadvertent disruption of closed vent. circuit)
- High-flow oxygen treatment
(warmed, humidified O₂ up to 60L/min)
- Noninvasive ventilation
(BiPAP, CPAP)
 - Nebulizer treatment
- Open airway suctioning



Units where these procedures occur maintain strict airborne precautions and often restrict visitors.

Beyond healthcare facilities: evidence SARS-CoV-2 becomes airborne in crowded, closed or poorly ventilated settings.

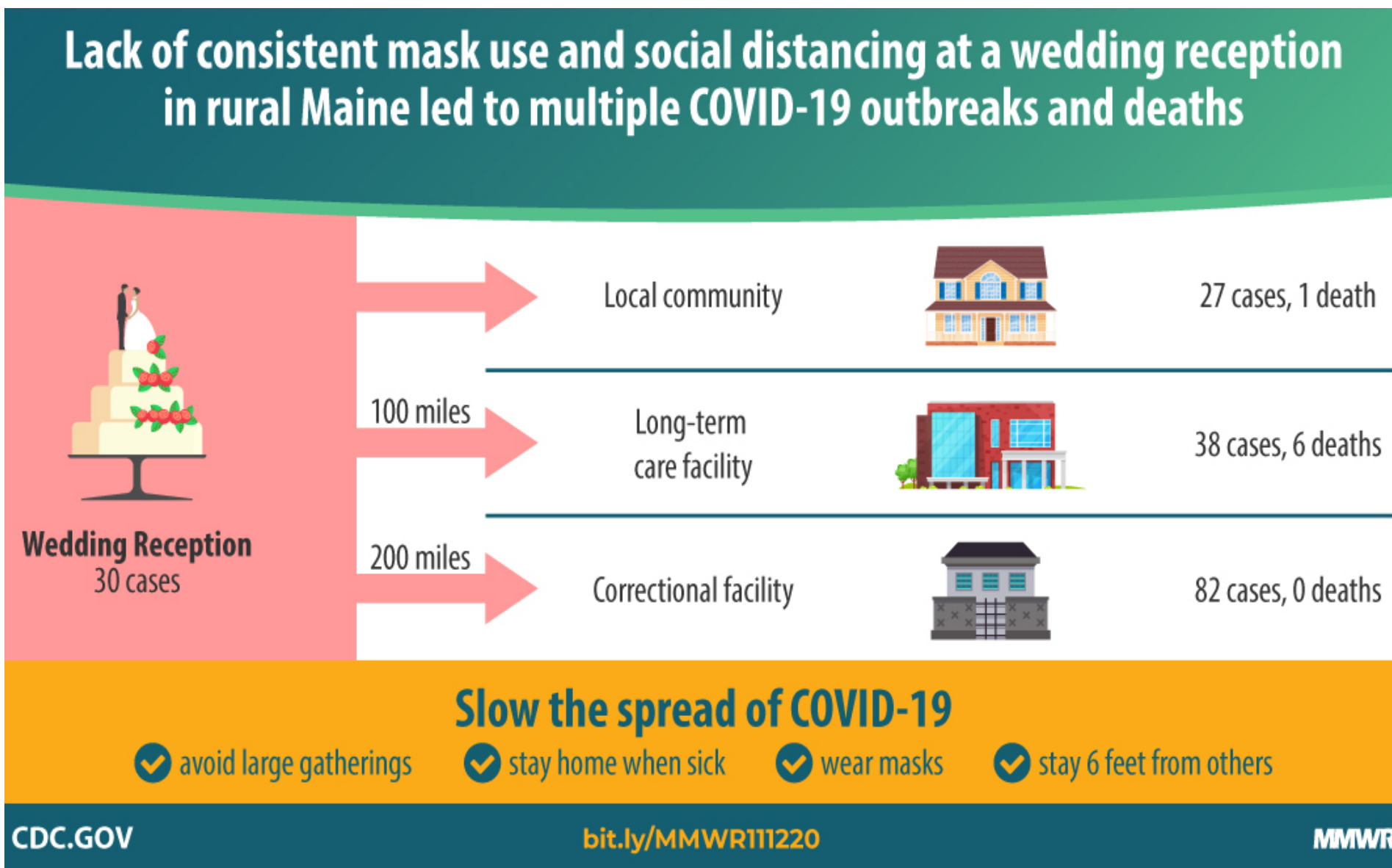


***Single-floor
call center
in S. Korea:
43.5%
transmission***

Due to airborne transmission in closed settings:

large indoor gatherings pose high risk for spread.

A wedding reception (55 people in rural Maine) had consequences hundreds of miles away...



3 types of masks	1. RESPIRATOR (N95)	2. SURGICAL MASK	3. CLOTH MASK
			
Fit	tight to face: <i>needs an initial fit test to determine size</i>	loose-fitting: <i>no fit testing required</i>	
Protection	2-way: filters 95% of air entering & exiting wearer	mainly 1-way: captures particles & droplets from wearer	mainly 1-way: but routine use ↓ transmission by people without symptoms ↓ amt. of airborne particles in closed environments
Use	reserve for healthcare workers & caregivers (<i>single-use design</i>)		public (<i>multiple-use design</i>)

Tight-fitting respirators need hairless skin to form seal.

- ***NO beards***
- ***NO stubble***



Respirator Re-Use

N95 creator Peter Tsai:

Hang in isolated spot, wait 7 days before reuse *(ideal: own several masks)*

- *Dry heat: hang in oven 160° F. for 30 min.*

[\(Andrew, 2020\)](#)



Common practices:

- **Keep at facility in bag labelled w/ name**
 - *writing on mask compromises integrity*
 - *taking home ↗ contamination risk*
- **UV light:** *used by hospitals and home health* ([Healthline, 2020](#), [M Health, 2020](#))



Continuously updated guide to N95 reuse:
[CDC, 2020e](#)



**CLOTH MASK
MALFUNCTION:**
completely ineffective

DON'T give up
6-foot distance

HOW TO WEAR A MEDICAL MASK SAFELY

[who.int/epi-win](https://www.who.int/epi-win)

Do's →

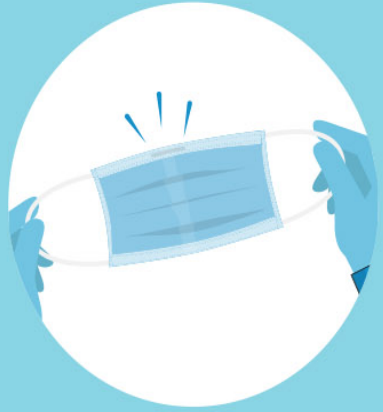


Wash your hands before touching the mask



Inspect the mask for tears or holes

<https://www.paho.org/en/documents/infographic-how-wear-mask-safely>



Find the top side,
where the metal piece
or stiff edge is



Ensure the
colored-side faces
outwards



Place the metal
piece or stiff edge
over your nose



Cover your
mouth, nose,
and chin



Adjust the mask to your
face without leaving
gaps on the sides



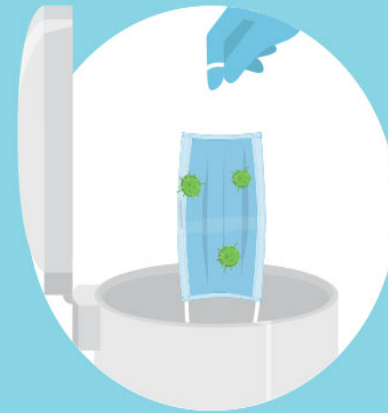
Avoid touching the
mask



Remove the mask from
behind the ears or
head



Keep the mask away
from yourself and from
surfaces while removing it



Discard the mask
immediately after use,
preferably into a closed bin



Wash your hands
after discarding
the mask

Don'ts



Do not Use a ripped or damp mask



Do not wear the mask only over mouth or nose



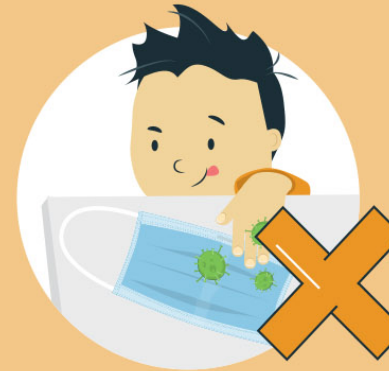
Do not wear a loose mask



Do not touch the front of the mask



Do not remove the mask to talk to someone or do other things that would require touching the mask



Do not leave your used mask within the reach of others

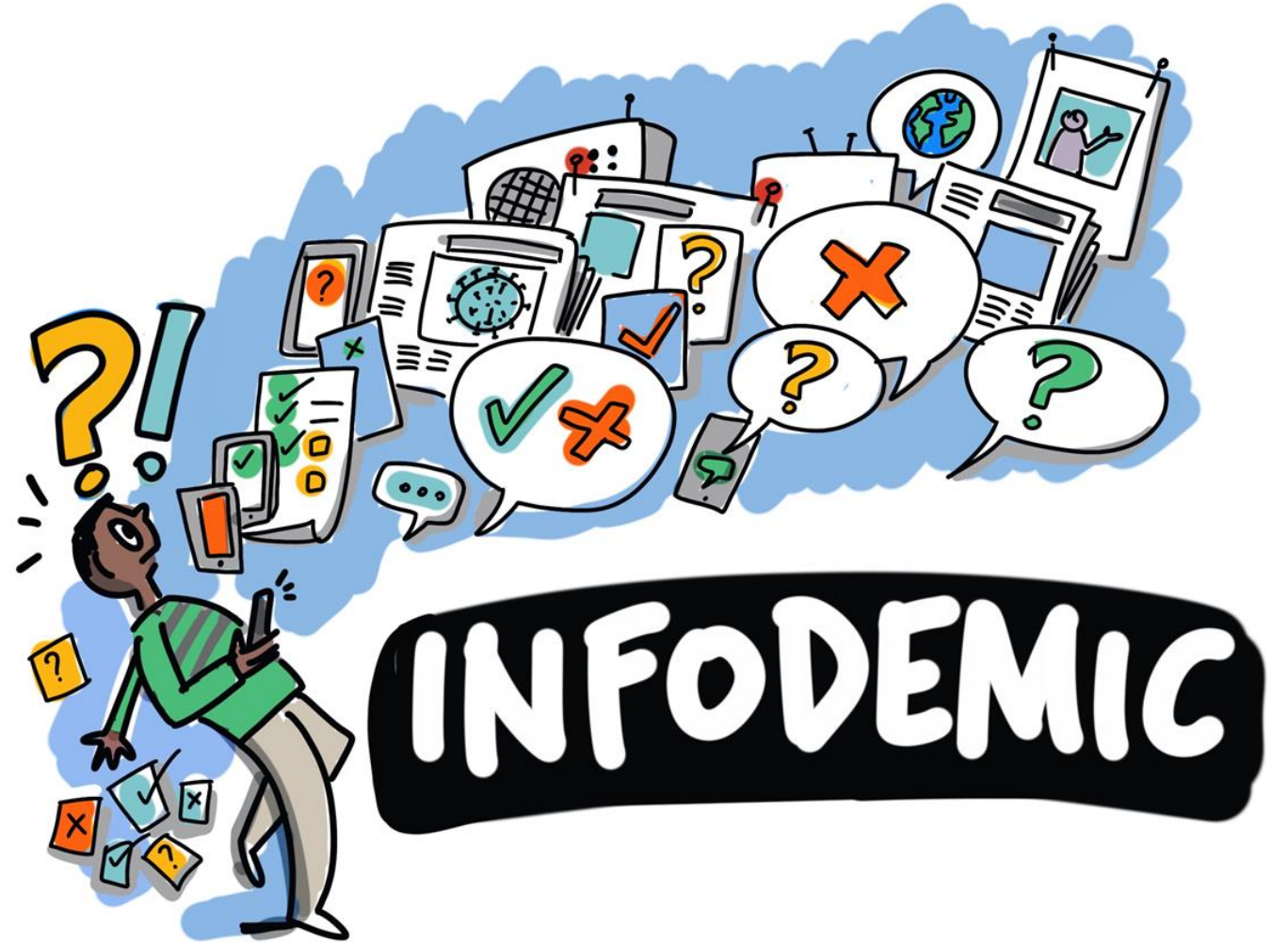


Do not re-use the mask

Remember that masks alone cannot protect you from COVID-19. Stay at least 1 meter away from others and wash your hands frequently and thoroughly, even while wearing a mask.

Please use your knowledge:
**Help manage the
“*infodemic*”**

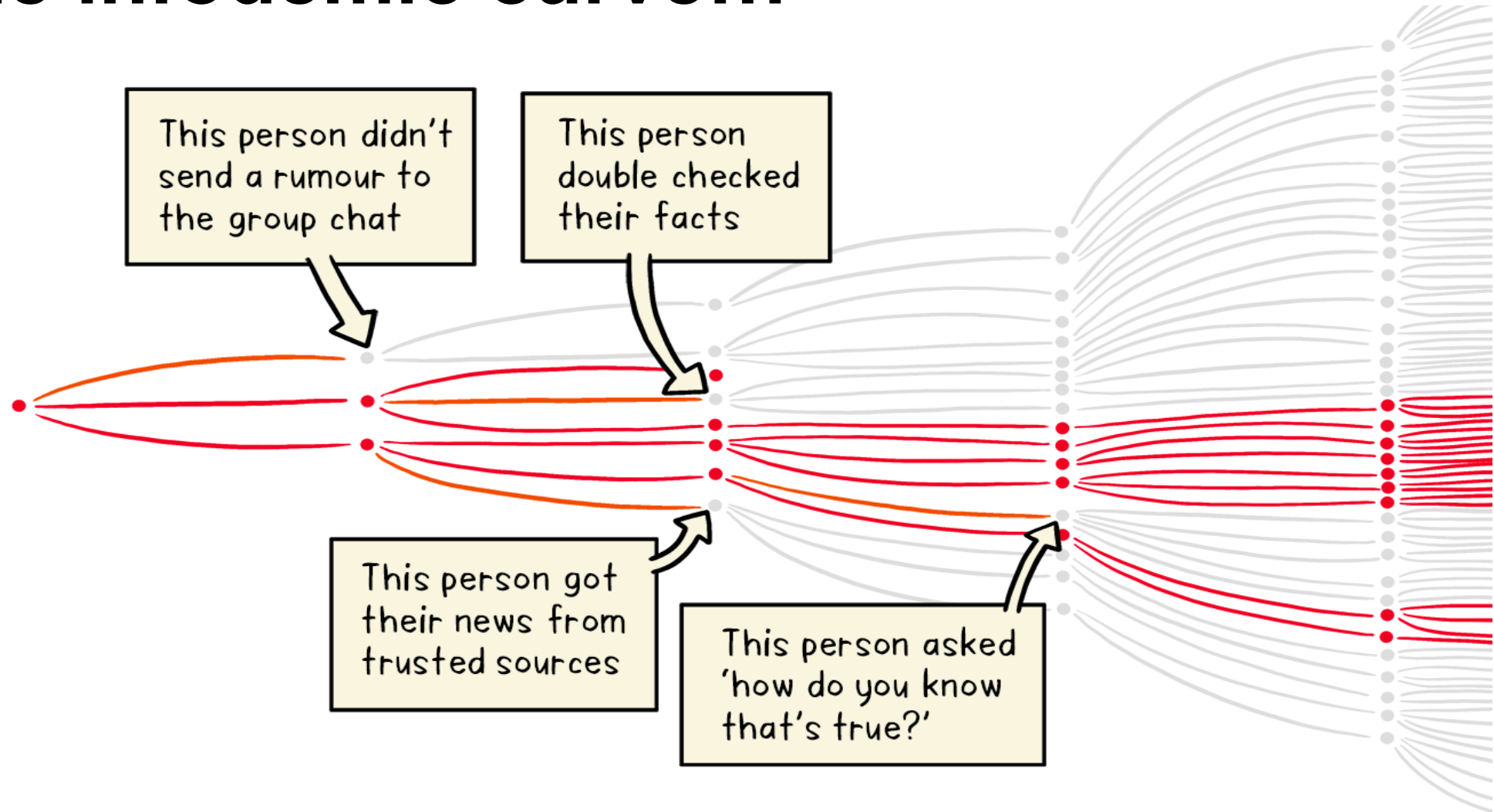
**Overabundance of
information – some
accurate and some not –
occurring during a
pandemic, which can
undermine public safety.**



WHO’s virtual global conference on Infodemic Management:

<https://www.who.int/teams/risk-communication/infodemic-management/3rd-virtual-global-who-infodemic-management-conference>

Misinformation is like a virus: do your part to
Flatten the infodemic curve...



IF YOU SEE COVID-19 MISINFORMATION

1 DON'T ENGAGE

If you reply, share, or quote misinformation, you help to spread it.

2 BLOCK THEM

If someone you don't know is sharing misinformation, block them.

3 MESSAGE PRIVATELY

If someone you know is sharing misinformation, message them privately and ask them not to.

4 REPORT

Report misinformation to platforms or group admins asking them to remove that content.

5 INSTEAD, SPREAD OFFICIAL ADVICE

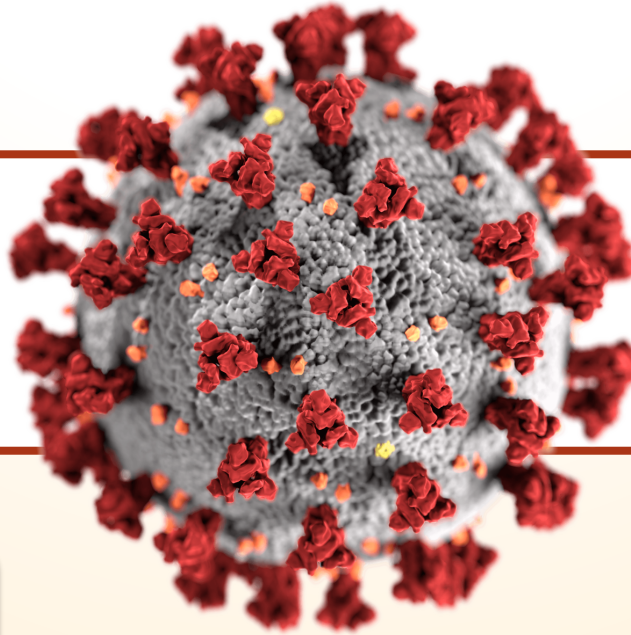
Drown out fake news by sharing official scientific advice, as well as posts promoting good causes in tough times.

www.counterhate.co.uk

Twitter @ccd hate | Insta @counterhate | FB @ccd hate

CCDH

COVID-19



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COVID-19
Overview

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Patho-
physiology

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Transmission &
Precautions

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Virus Testing
& Vaccines

5

Epidemiology
& Tracing

+

Ethics, Peds/OB
Mental Health

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