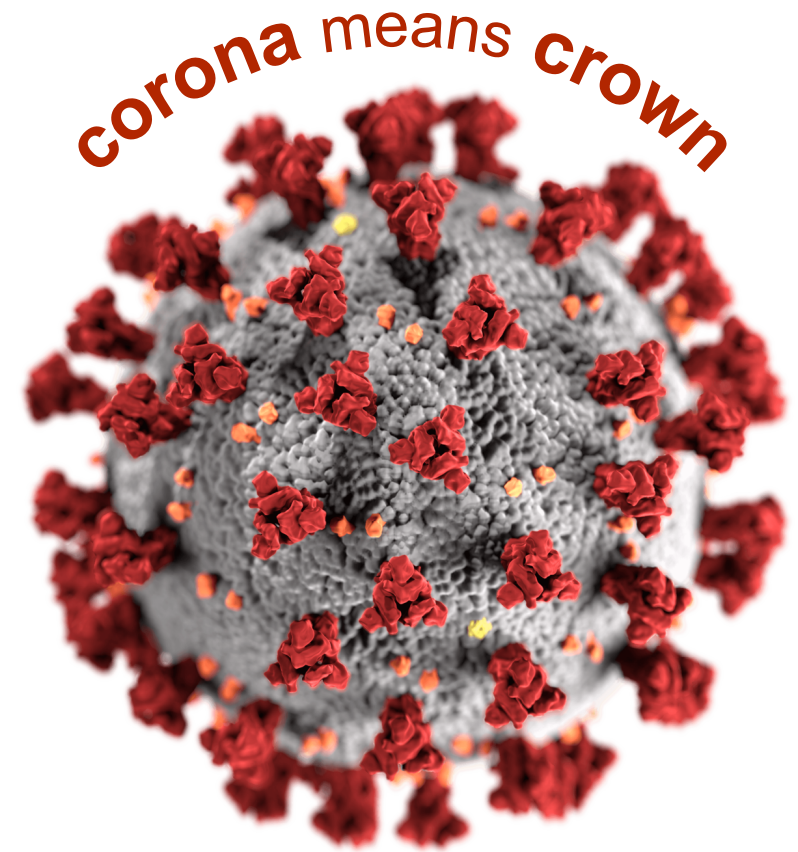


# 1 COVID-19 OVERVIEW



1 Feb 2021

**RN**next.com

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

**Raney Linck**  
DNP, RN



# What We Know... **So Far**

as of Feb. 1, 2021

This is our *current* understanding,  
which will *evolve and grow* over time  
as we gather more data.

*Trees that can **bend**,  
don't break.*



# Virus

*causes*

# Disease

VIRUS NAME		DISEASE NAME
<b>HIV</b> <i>human immunodeficiency virus</i>	<i>causes</i>	<b>AIDS</b> <i>acquired immunodeficiency syndrome</i>
<b>rubella</b> <i>also spelled rubeola</i>	<i>causes</i>	<b>measles</b>
<b>SARS-CoV-2</b> <b><u>s</u>evere <u>a</u>cute <u>r</u>espiratory <u>s</u>yndrome <u>c</u>orona<u>v</u>irus <u>2</u></b> <i>For general public, WHO often calls it “the COVID-19 virus”</i>	<i>causes</i>	<b>COVID-19</b> <b><u>c</u>orona<u>v</u>irus <u>d</u>isease <u>2019</u></b> <i>Named 2019 for the year it was discovered.</i>

## Know the symptoms of COVID-19, which can include the following:



**Cough**



**Fever**



**Chills**



**Muscle pain  
(myalgias)**



**Short of breath  
(dyspnea)**



**Sore throat**



**New loss of  
taste or smell**

- **Fatigue**
- **↑ mucus production**  
*(congestion or runny nose)*
- **Nausea or Vomiting**
- **Diarrhea**

**Note: people can transmit virus without symptoms...**



# What's the difference?

## **ASYMPTOMATIC:**

*No symptoms ever*

## **PRESYMPTOMATIC:**

*No symptoms yet*

## **OLIGOSYMPTOMATIC:**

*Symptoms so mild a person probably does not realize they're sick.*

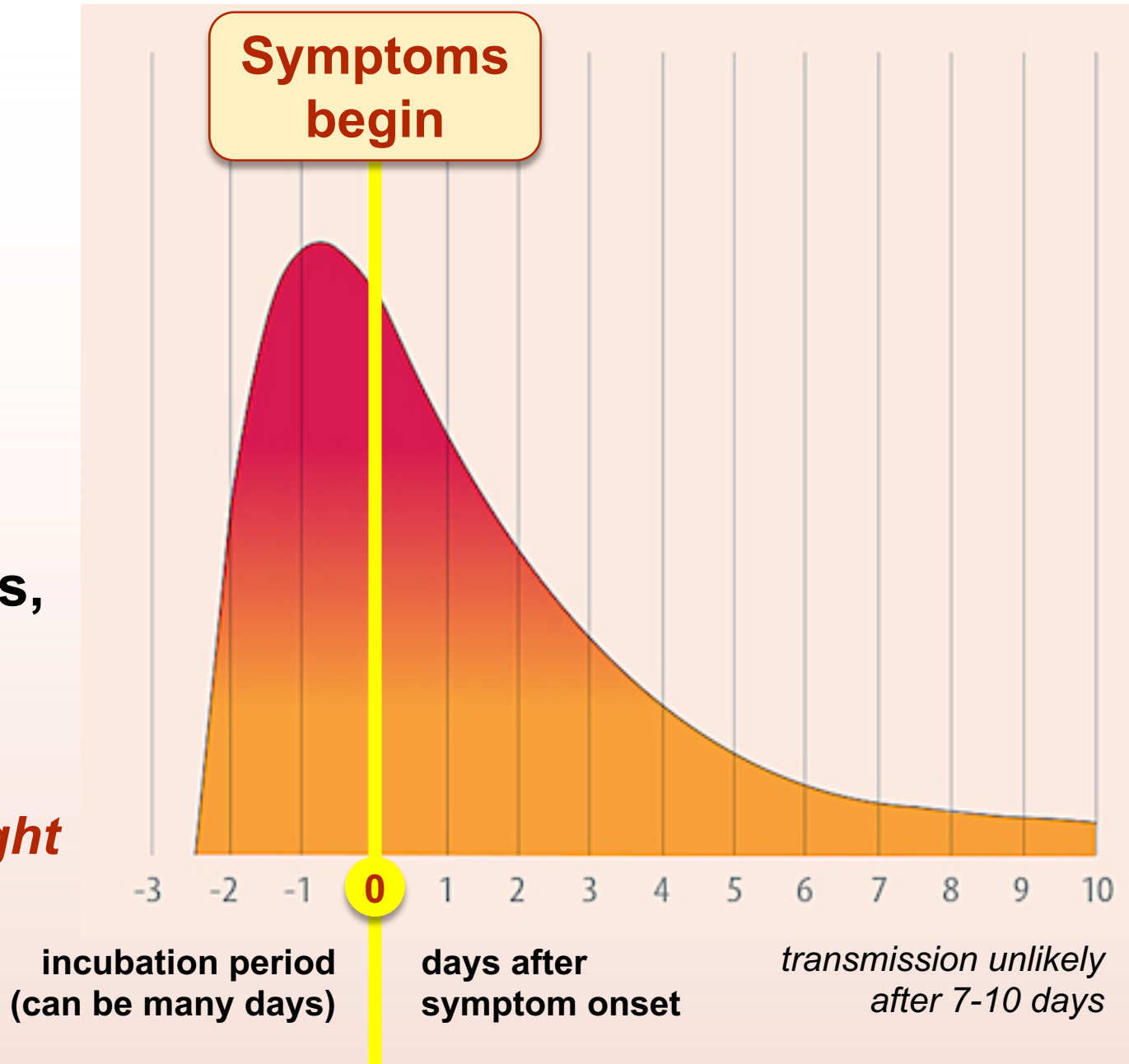
You can  
transmit  
the virus  
**without  
knowing  
you're sick.**

After virus replicates  
inside your body...

## VIRAL SHEDDING

is when virus is released into  
environment (*becomes  
contagious*) via your secretions,  
exhaled breath, cough, etc.

*In COVID-19, shedding peaks right  
BEFORE symptoms begin*



# INCUBATION *(time between infection and first symptoms)*

- *range: 1 to 14 days with an average of 5 to 6 days.*



# DISEASE SEVERITY

*in Wuhan, China*

**“mild”**  
usually  
recover  
in 2 wk

**“severe”**  
**1 in 5**  
hospitalized

<b>MILD</b>	<b>40%</b>
<b>MODERATE</b> <i>(including pneumonia)</i>	<b>40%</b>
<b>SEVERE</b> <i>(requiring oxygen)</i>	<b>15%</b>
<b>CRITICAL</b> <i>(intensive care &amp; ventilation)</i>	<b>5%</b>

## What percentage died?

Overall 2.3% (*Varied by region: 5.3% Wuhan; 0.7% rest of China*)

- **Case fatality (mortality) rate is “snapshot of time” – not permanently fixed**
- **As of May 2020: WHO states crude case fatality is 7% worldwide**

# CLINICAL COURSE *(how disease behaves over time)*

## ACUTE PHASE

**80% of cases  
are MILD**

recover at home, usually within 2 weeks

**20% of cases are severe:** require hospital care  
*(Note: 1 in 11 will be rehospitalized within 2 months)*

## LONGER-TERM PHASE

occurs for some people:

**POST VIRAL  
SYNDROME**

*lingering symptoms  
beyond 2 wks*

**USA: 35% of outpatient (“mild”) cases had NOT  
returned to usual state of health**

**2-3 wks after testing COVID+**

*(1 in 5 were ages 18-34 with no chronic conditions)*



# #LongCOVID

**Post Viral Syndrome** (lingering symptoms beyond 2 weeks):

- **any COVID-19 symptom** (*short of breath, coughing, diarrhea, etc.*)
- **“brain fog” (difficulty concentrating)**
  - *Note: reports of symptoms that increase or decrease unpredictably*

## Long-term effects of COVID-19 unclear:

- *May be serious neuro, cardiac, GI, other impacts*
- *May trigger chronic disease (?)  
chronic fatigue syndrome, heart failure*



**'LONG-HAULERS' ON LIVING WITH CORONAVIRUS FOR NEARLY 100 DAYS**

**“Long-haulers”  
still experience  
symptoms  
months later...**

*watch video:*  
[CNN, 2020](#)

# Acute **MILD**: Outpatient Management

80% cases **DO NOT** require medical intervention / hospitalization

Remote care: ↓ *risk of exposing others & burden on healthcare system*

Provider  
Tips



**Telephone  
Triage**

## TELEHEALTH

COMPUTER



SMART PHONE



TABLET






EASY TO USE

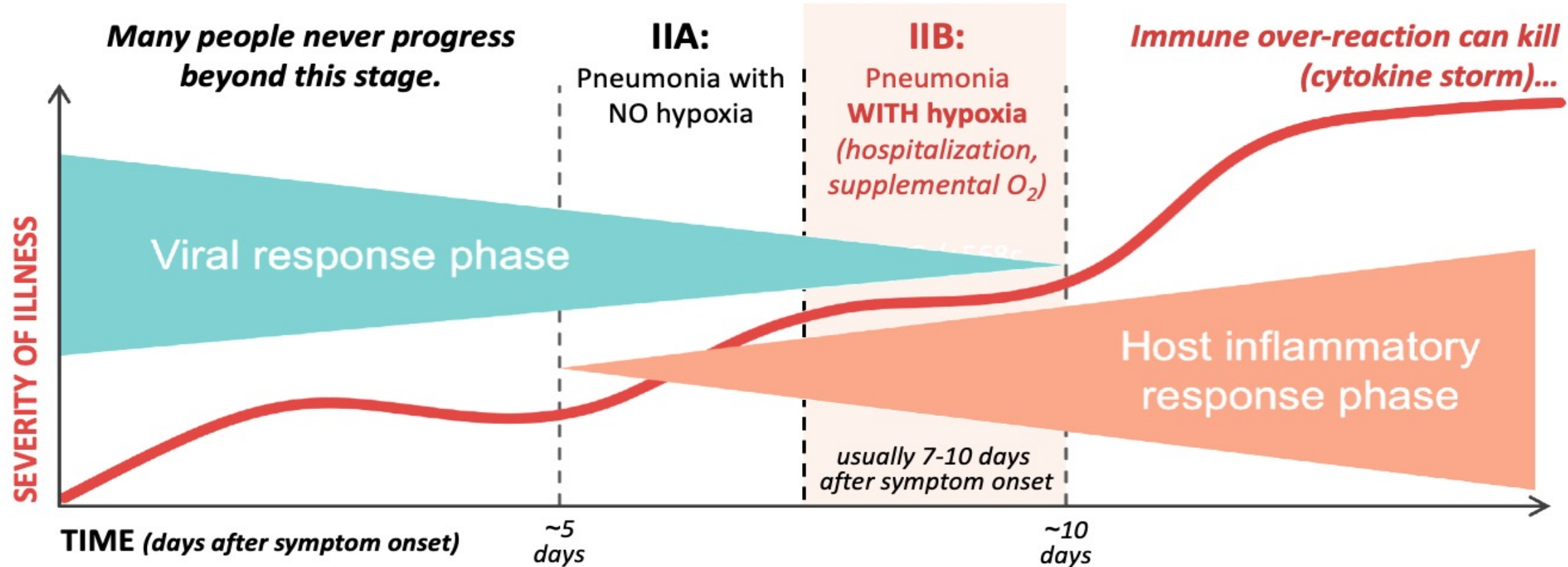


# Assess risk factors for severe disease...

<b>age 65 or older</b>	<b>obesity</b>	<b>hypertension</b>
<b>resides in long-term care facility</b>	<b>diabetes</b>	<b>cardiovascular disease</b>
<b>chronic <i>lung</i> disease</b> (COPD, asthma, CF)	<b>chronic <i>kidney</i> disease</b>	<b>chronic <i>liver</i> disease</b>
<b>cancer</b>	<b>pregnancy</b>	<b>hematologic disorders</b>
<b>immunocompromised</b> (HIV, steroids, organ transplant)	<b>neurological disorders</b> (dementia, cerebrovascular dz)	<b>heavy tobacco use</b>

# STAGES OF COVID-19

	 <b>Stage I</b> <b>(Early infection)</b>	 <b>Stage II</b> <b>(Pulmonary phase)</b>	 <b>Stage III</b> <b>(Hyperinflammation)</b>
symptoms:	<i>mild: fever, fatigue, cough</i>	<i>pneumonia</i>	<i>ARDS, shock, cardiac injury</i>
test results:	<i>low WBC in Stage I = poorer outcome</i>	<i>abnormal chest imaging</i>	<i>↑ inflam. &amp; cardiac biomarkers</i>





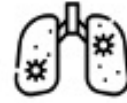
# STAGES OF COVID-19



## Stage I (Early infection)

symptoms: mild: fever, fatigue, cough

test results: low WBC in Stage I = poorer outcome



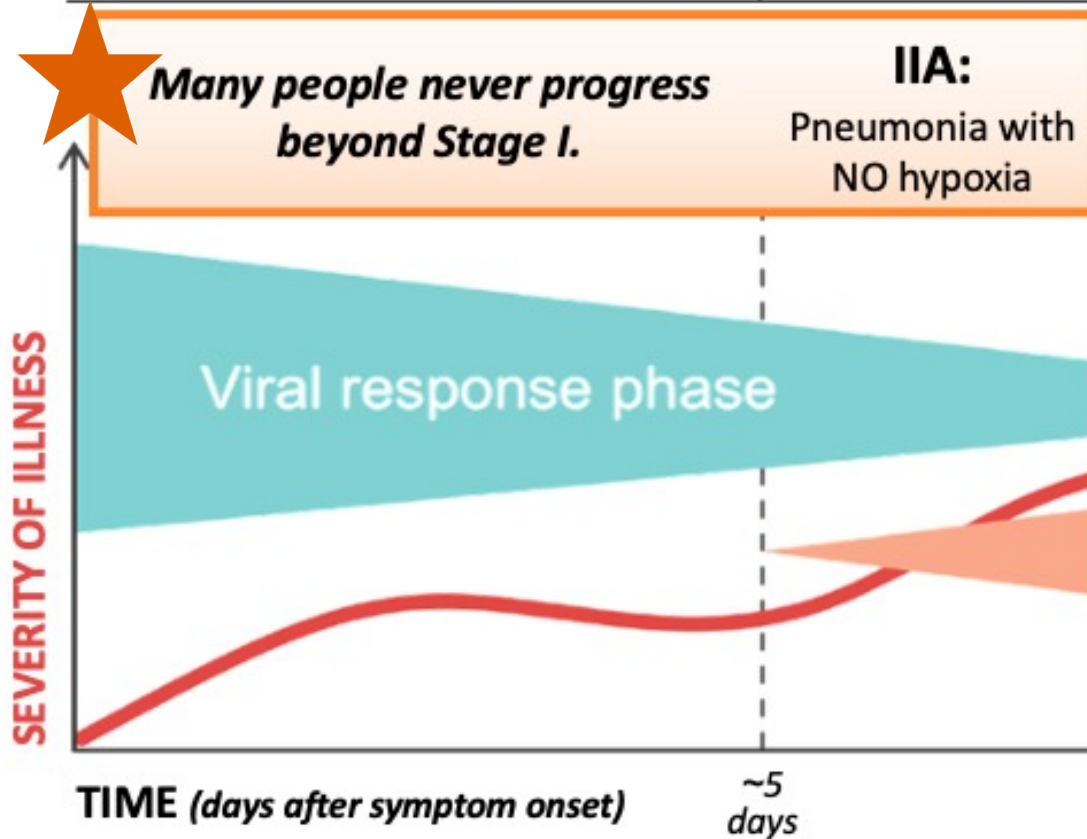
## Stage II (Pulmonary phase)

pneumonia

abnormal chest imaging

# MILD

**80% of cases:**  
**HOME**  
(outpatient)  
care





Manage at home: no medical intervention may be needed.  
If hypoxia ( $O_2$  sat below 90%, severe dyspnea) then admit to hospital... *stage IIB next slide*

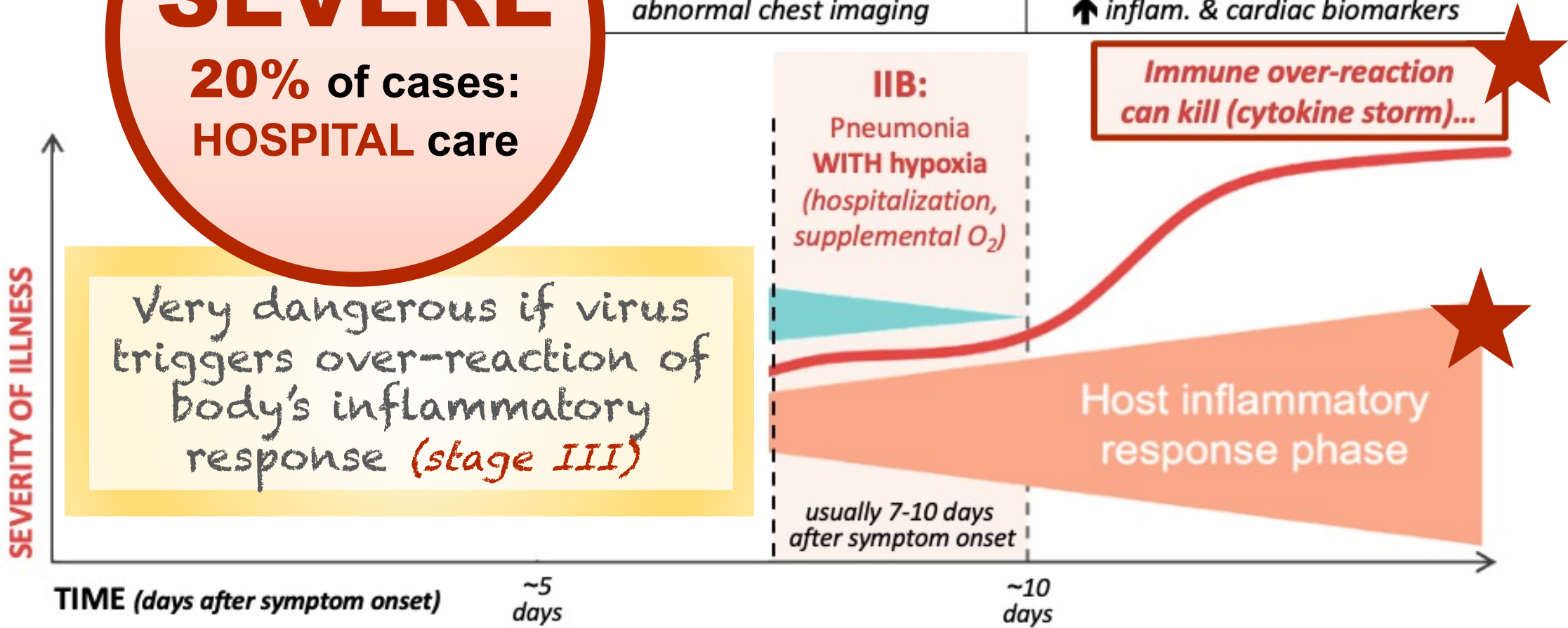


STAGES OF COVID-19

**SEVERE**  
20% of cases:  
HOSPITAL care

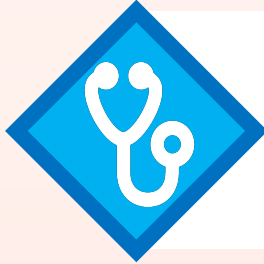
Very dangerous if virus triggers over-reaction of body's inflammatory response (stage III)

 Stage II (Pulmonary phase)	 Stage III (Hyperinflammation)
pneumonia	ARDS, shock, cardiac injury
abnormal chest imaging	↑ inflam. & cardiac biomarkers



# Acute **SEVERE**: Management

Some people  
**rapidly**  
**deteriorate**  
**1 week after**  
symptom onset



Teach home patients & family to watch for changes at 7-10 days

**Hospitalized patients:**

- median length of stay: **10-13 days**
- **26-32% admitted to ICU**

**dyspnea → acute resp. distress syndrome → ICU admission**

*At this time,*  
there is no cure  
for the **virus...**

**we treat symptoms.**

## Early clinical trials ultimately showed **no benefit**

for most of these drug therapies –

but public may fixate on early hopes & misinformation.

Example:  
hydrochloroquine

WHO is coordinating the large multi-country **Solidarity Trial** to evaluate four candidate drugs/regimens:

01 Remdesivir

hastened recovery from **COVID** in ACTT-1 clinical trial ([Beigel et al., 2020](#))

**X** Lopinavir / Ritonavir

**X** Lopinavir / Ritonavir + Interferon Beta

**X** Chloroquine

**NO BENEFIT**

Dozens of potentially re-purposable drugs are in various trial stages.





## Antimalarial drugs: *early investigation as antiviral*

Early in two pandemics, antimalarials captured the public imagination,  
**but ultimately were ineffective:**

**1918: H1N1 influenza pandemic**  
("Spanish flu"), it was **quinine**...



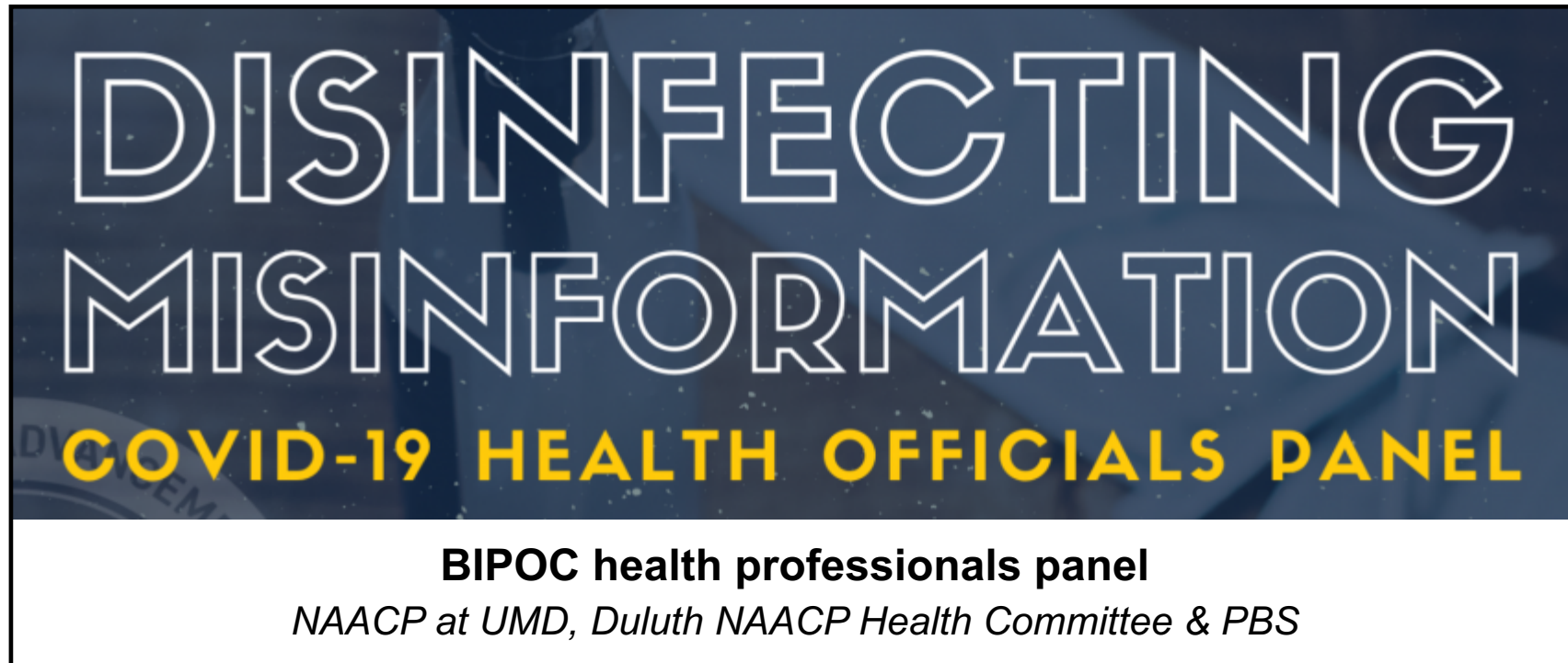
**2020: SARS-CoV-2 pandemic**  
(COVID-19), it was **chloroquine**  
& **hydroxychloroquine**...

*June 15, 2020:* **FDA revoked its  
emergency use authorization  
to treat COVID-19.**

See [Tran \(2020\)](#) for list of studies  
with summaries & links.



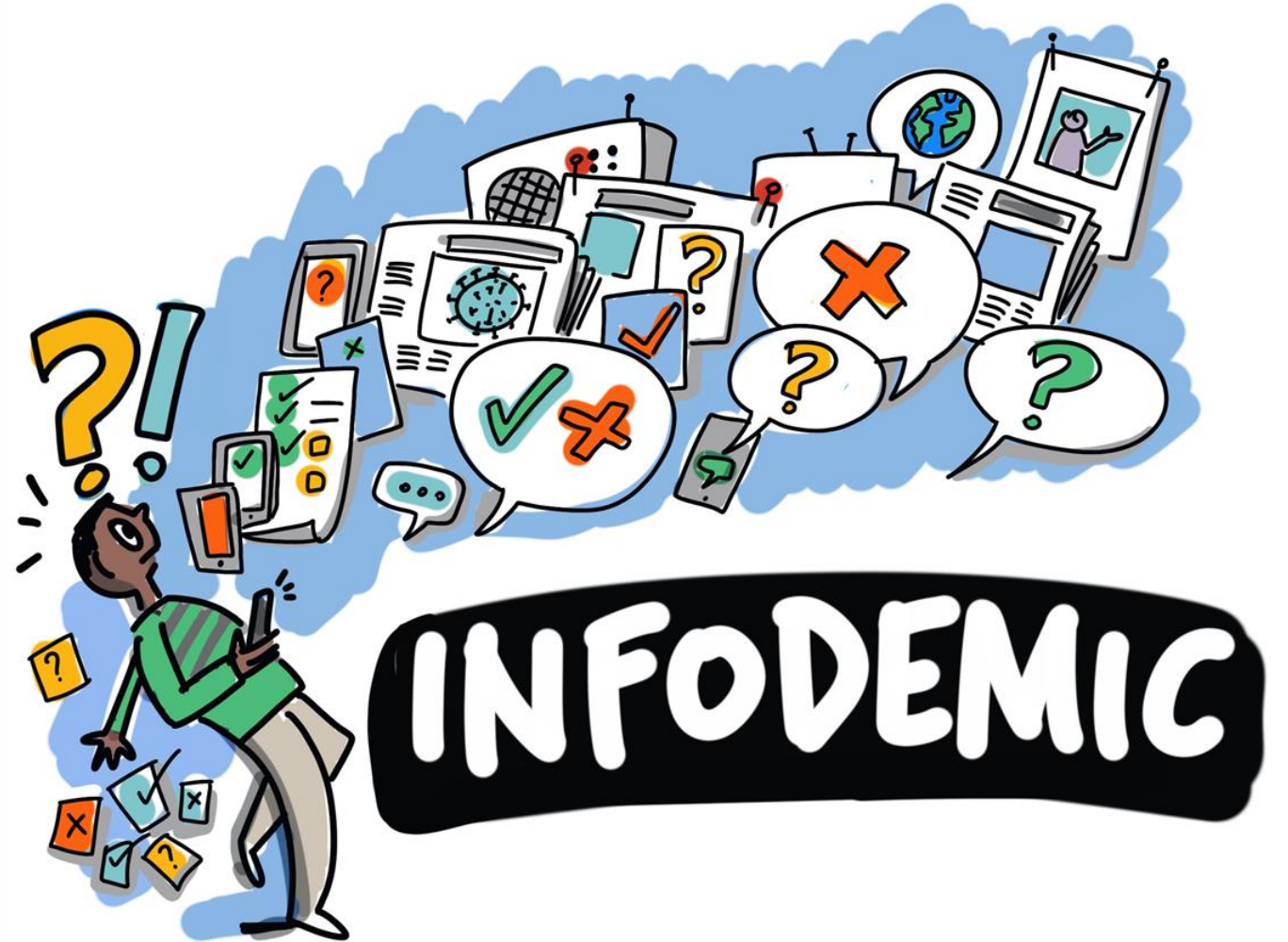
***“Each one: reach one, teach one”***



**All of us must do our part to correct misinformation.  
Be a resource to people in your life.**

# Help manage the “*infodemic*”

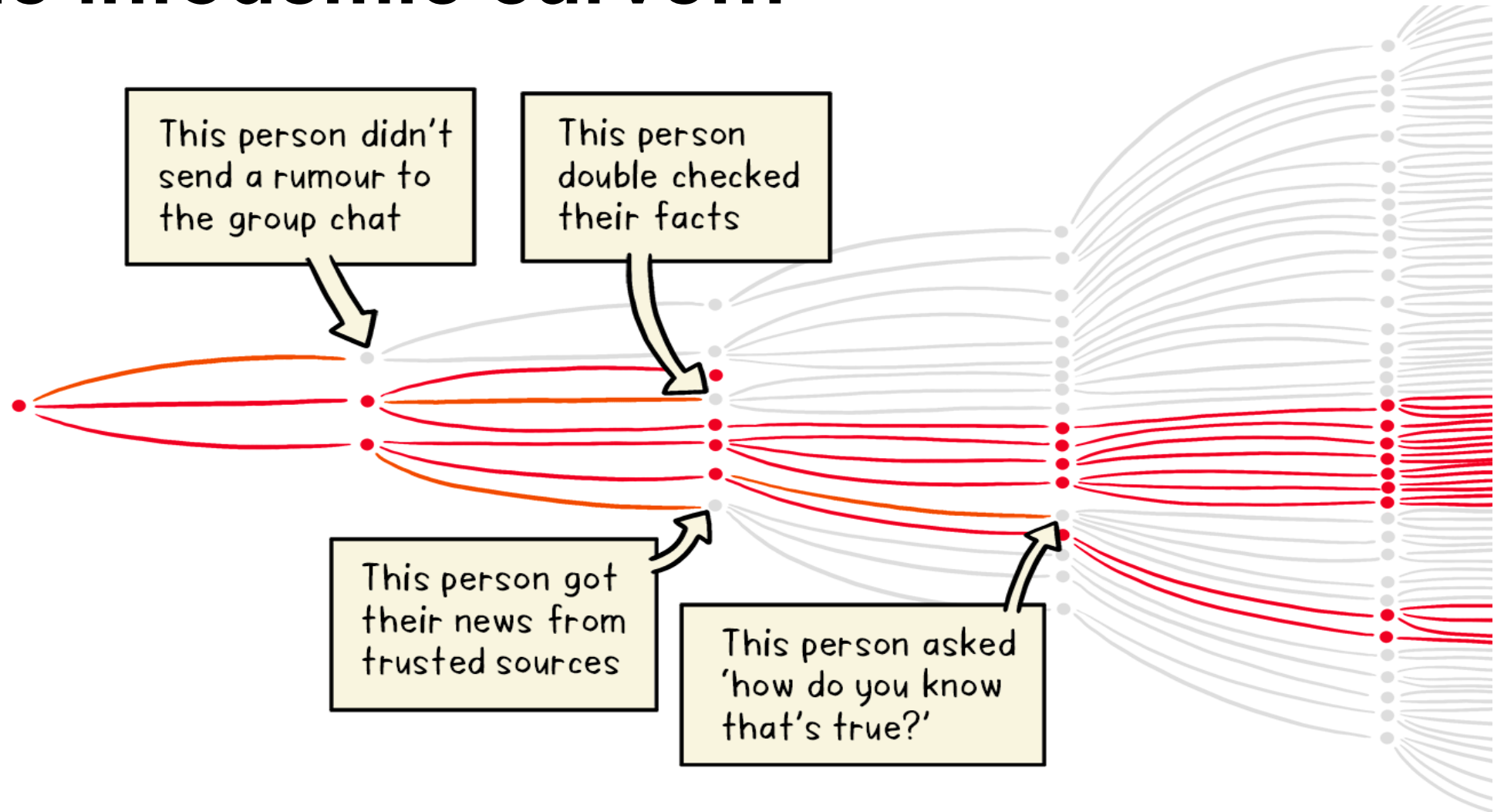
Overabundance of information – some accurate and some not – occurring during a pandemic, which can undermine public safety.



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

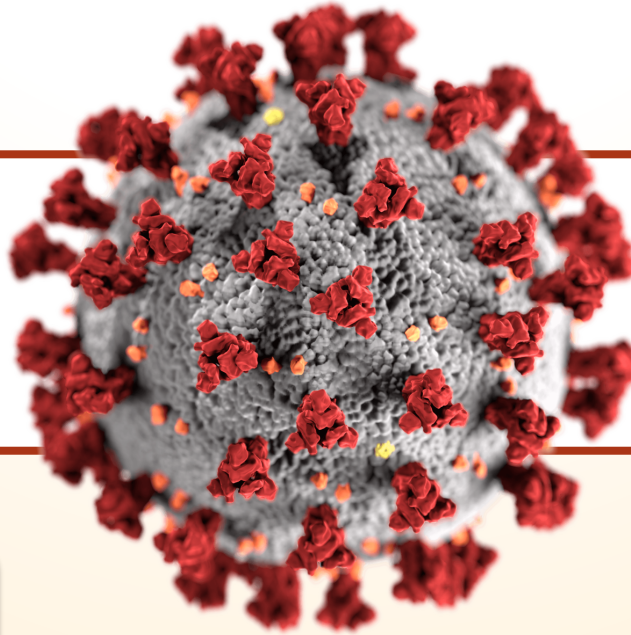
Drown out fake news by sharing official scientific advice, as well as posts promoting good causes in tough times.

[www.counterhate.co.uk](http://www.counterhate.co.uk)

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

**CCDH**

# COVID-19



Raney Linck DNP, RN  
**RN**<sub>next</sub>

1

COVID-19  
Overview

2

Patho-  
physiology

3

Transmission &  
Precautions

4

Virus Testing  
& Vaccines

5

Epidemiology  
& Tracing

+

Ethics, Peds/OB  
Mental Health



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