



# CDC/IDSA COVID-19 Clinician Call

October 31, 2020

## Welcome & Introductions

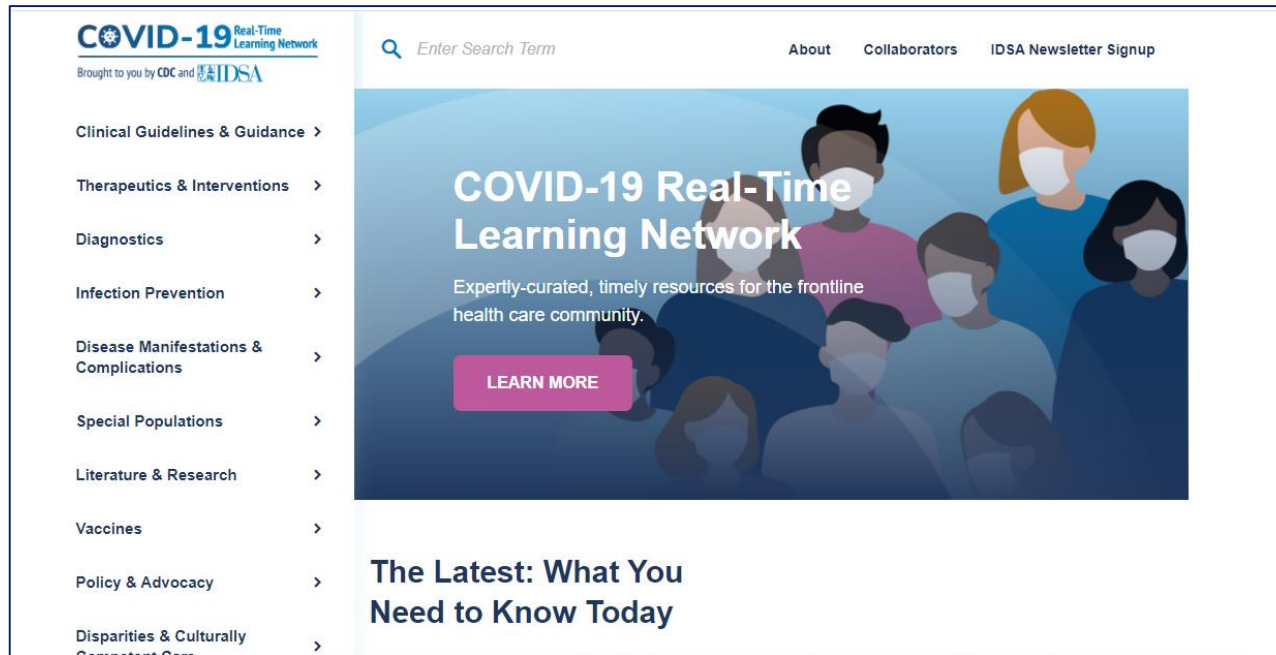
Dana Wollins, DrPH, MGC

Vice President, Clinical Affairs & Guidelines

IDSA

- 42<sup>nd</sup> in a series of weekly calls, initiated in January by CDC as a forum for information and sharing among frontline clinicians caring for patients with COVID-19
- The views and opinions expressed here are those of the presenters and do not necessarily reflect the official policy or position of the CDC or IDSA. Involvement of CDC and IDSA should not be viewed as endorsement of any entity or individual involved.
- This webinar is being recorded and can be found online at [www.idsociety.org/podcasts](http://www.idsociety.org/podcasts).

# COVID-19 Real-Time Learning Network



With funding from the Centers for Disease Control and Prevention, IDSA has launched the COVID-19 Real Time Learning Network, an online community that brings together information and opportunities for discussion on latest research, guidelines, tools and resources from a variety of medical subspecialties around the world.

## Specialty Society Collaborators:

- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Emergency Physicians
- American College of Physicians
- American Geriatrics Society
- American Thoracic Society
- Pediatric Infectious Diseases Society
- Society for Critical Care Medicine
- Society for Healthcare Epidemiology of America
- Society of Hospital Medicine
- Society of Infectious Diseases Pharmacists

[www.COVID19LearningNetwork.org](http://www.COVID19LearningNetwork.org)

@RealTimeCOVID19

#RealTimeCOVID19

# CDC-IDSA Partnership: Clinical Management Call Support

*Announcing a new service for clinicians:*

## FOR WHOM?

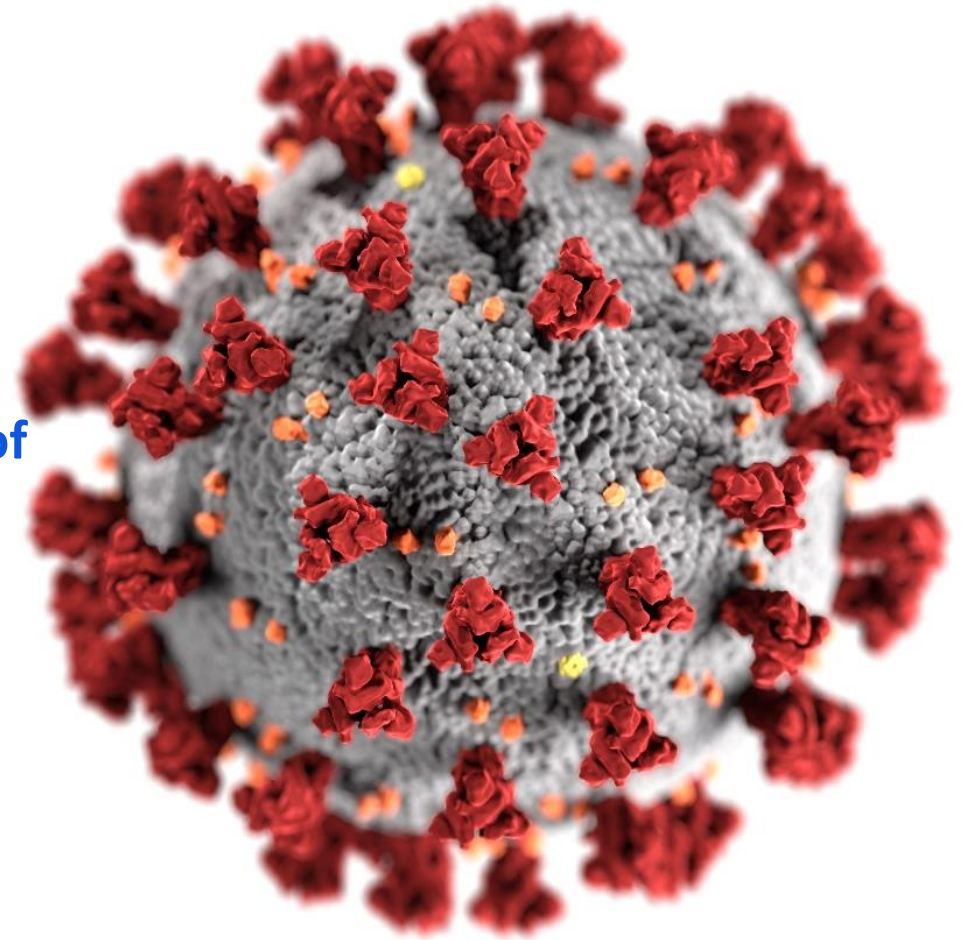
- Clinicians who have questions about the clinical management of COVID-19

## WHAT?

- Calls from clinicians will be triaged by CDC to a group of IDSA volunteer clinicians for peer-to-peer support

## HOW?

- Clinicians may call the main CDC information line at 800-CDC-INFO (800-232-4636)
- To submit your question in writing, go to [www.cdc.gov/cdc-info](http://www.cdc.gov/cdc-info) and click on Contact Form



**IDSA**  
Infectious Diseases Society of America

[cdc.gov/coronavirus](http://cdc.gov/coronavirus)

Today's Topic:  
**Beyond Acute SARS-CoV-2 Infection: Clinical  
Definitions and Considerations**



**A Framework and Timeline of the Clinical Spectrum  
of Disease due to SARS CoV-2 Infection**

**S. Deblina Datta, M.D., FIDSA**

Lead, Clinical Team

Health Systems and Worker Safety Task Force  
COVID-19 Emergency Operations Center  
Centers for Disease Control and Prevention



**Experiences from a Dedicated Post COVID Care Clinic,  
Mount Sinai Hospital, NY**

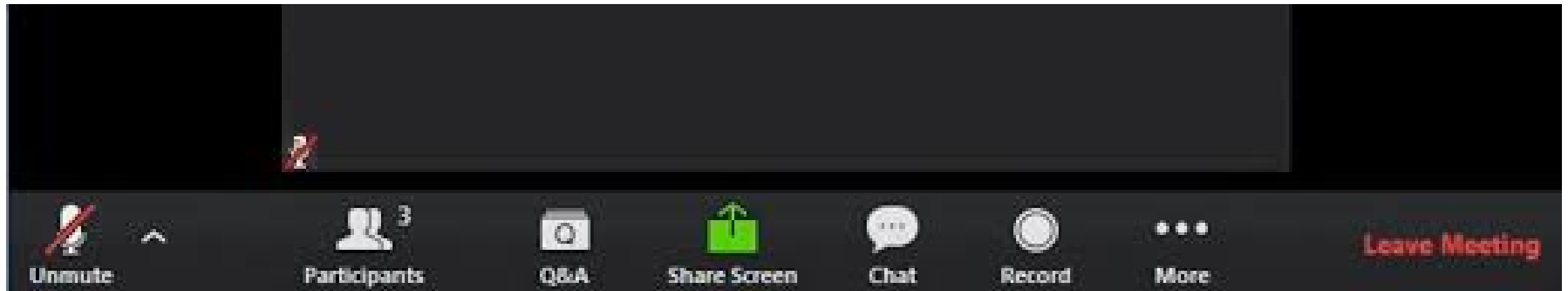
**Juan Wisnivesky, M.D., DrPH**

Drs. Richard and Mortimer Bader Professor of Medicine  
Chief, Division of General Internal Medicine  
Icahn School of Medicine at Mount Sinai

Question?  
Use the "Q&A" Button

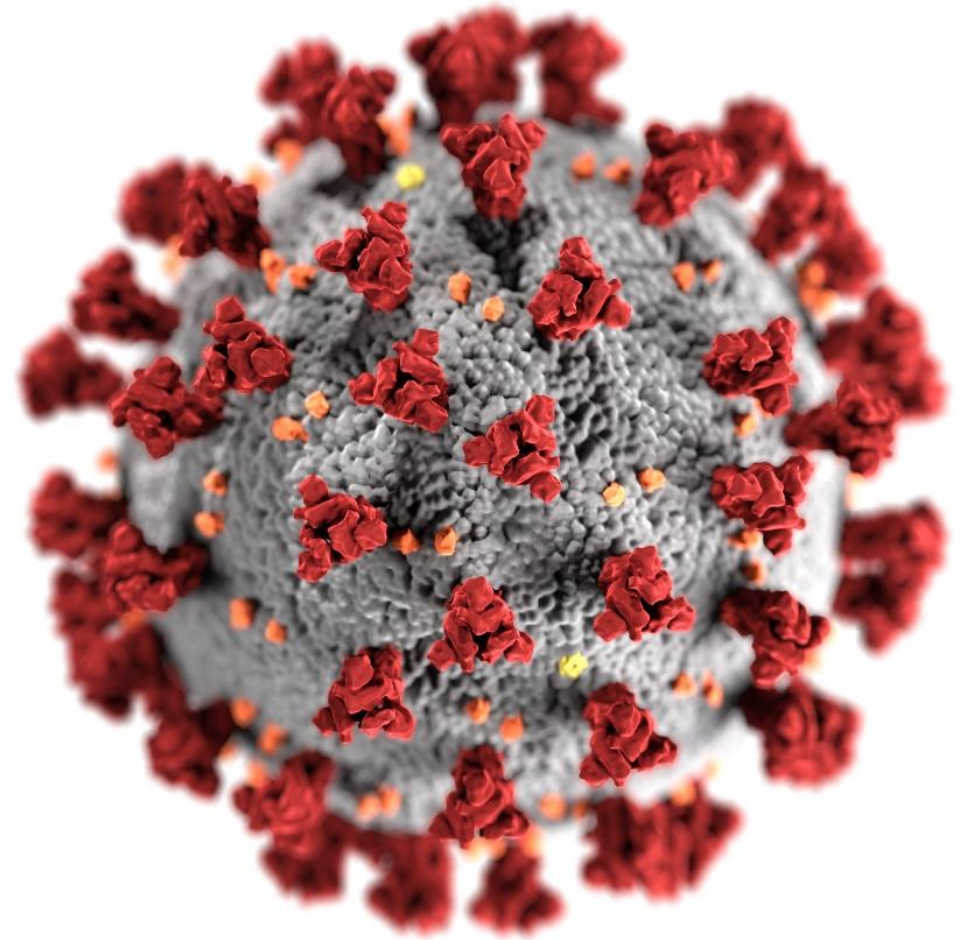


Comment?  
Use the "Chat" Button



# A Framework and Timeline of the Clinical Spectrum of Disease Due to SARS-CoV-2 Infection: Illness beyond Acute Infection and Public Health Implications

S. Deblina Datta, MD, FIDSA, CAPT USPHS  
Clinical Team Lead | CDC COVID 19 Response  
Saturday, 31 October 2020—Happy Halloween!

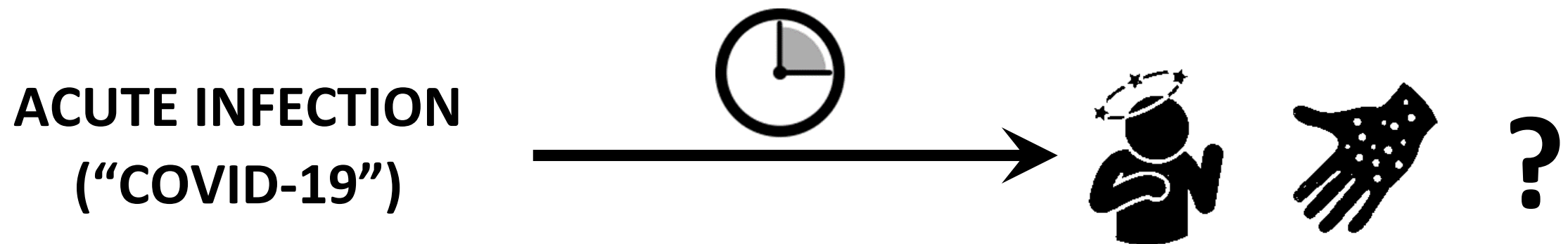


[cdc.gov/coronavirus](https://cdc.gov/coronavirus)

# Need for comprehensive SARS-CoV-2 framework

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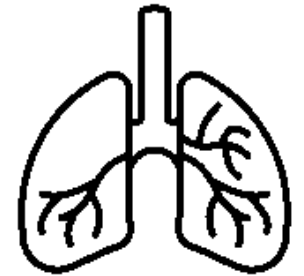
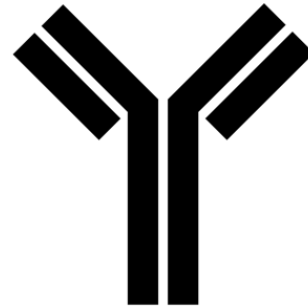
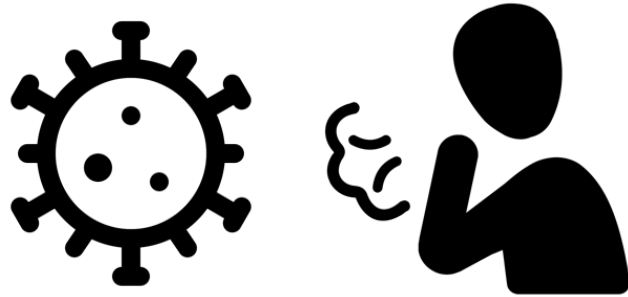
- “...call each thing by its right name” – Boris Pasternak
- Increasing evidence that other illnesses occur after **acute infection** with SARS-CoV-2
  - Post-acute hyperinflammatory illness
  - Late inflammatory and virologic sequelae



# ACUTE INFECTION (COVID-19)

# POST-ACUTE HYPERINFLAMMATORY ILLNESS

# LATE SEQUELAE



Immunologic characteristics

Immunologic characteristics

Immunologic characteristics

Clinical signs and symptoms

Clinical signs and symptoms

Clinical signs and symptoms

Laboratory testing profile

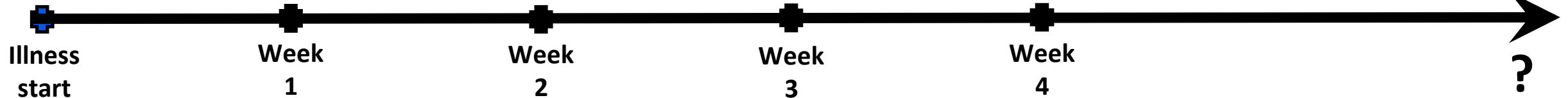
Laboratory testing profile

Laboratory testing profile

Approx. 8.5mil cases in US  
Approx. 225,000 deaths

In children, national reporting approx.  
1000 cases (20 deaths)  
In adults, unknown






Not yet quantified





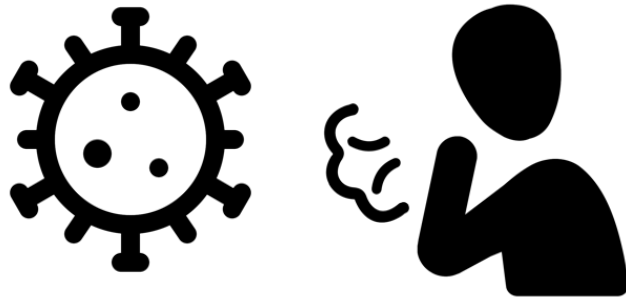
# A population-based framework: Examples of potential courses in individuals



- Acute COVID-19 alone 
- Acute COVID-19 + late sequelae  
- Hyperinflammation alone 
- Late sequelae alone 
- Asymptomatic infection
- *And others...*

# ACUTE INFECTION (COVID-19)

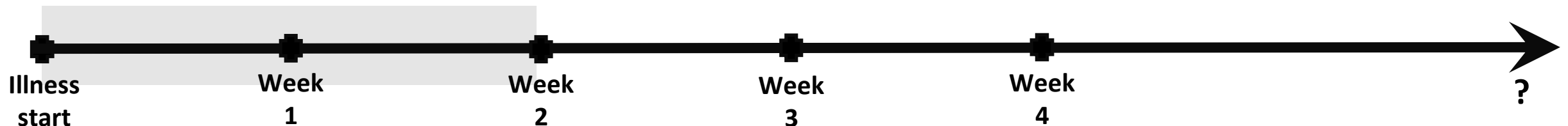
Characterized by active viral replication  
and initial host immune response<sup>1</sup>



Fever, cough, dyspnea, myalgia, headache,  
sore throat, diarrhea, nausea, vomiting,  
anosmia, dysgeusia, and abdominal pain  
Can have no clinical signs/symptoms<sup>2</sup>

Laboratory tests<sup>3,4</sup>:

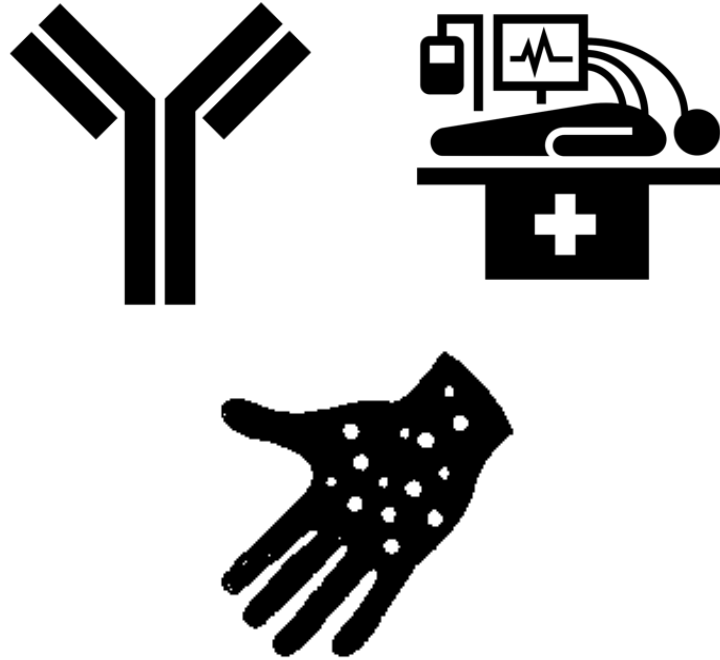
- Antigen or RT-PCR (+)
- Antibody (+) after 2 weeks



# POST-ACUTE HYPERINFLAMMATORY ILLNESS

Characterized by  
dysregulated  
host immune  
response<sup>5,6</sup>

May be difficult to  
distinguish from  
hyperinflammatory  
response seen in some  
during acute infection



Gastrointestinal,  
dermatologic, and  
cardiovascular  
manifestations  
common<sup>5,6</sup>

Laboratory tests<sup>5,6</sup>:  
Viral test (+/-)  
**Antibody (+)**



# Post-acute hyperinflammatory illness

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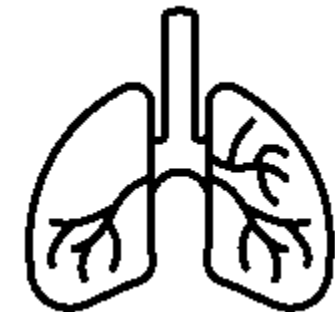
- Encompasses multisystem inflammatory syndrome in children (**MIS-C**) and adults (**MIS-A**)<sup>5,6</sup>
- Both are **hyperinflammatory processes** distinct from localized inflammation resulting immediately from viral replication and cell death<sup>5,6</sup>
- Can occur in areas distant from initial site of active SARS-CoV-2 replication<sup>5,6</sup>

# LATE SEQUELAE

Commonly see cardiovascular,  
pulmonary, and central nervous system  
manifestations<sup>7-12</sup>

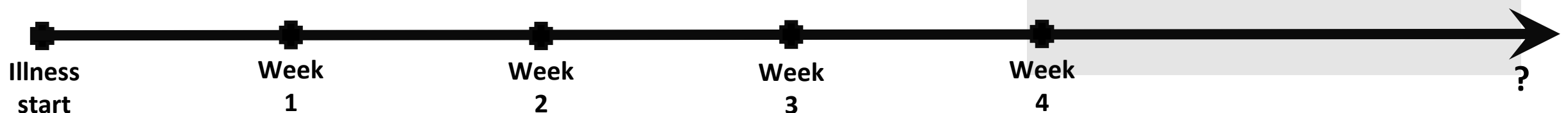


Pathophysiological pathways are  
proposed, but *unproven*



Laboratory tests:

Viral test, Antibody profile  
uncharacterized



# Late inflammatory and virologic sequelae

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- Potential etiologies:
  - Organ damage from acute infection period
  - Manifestations of long-term hyperinflammatory state
  - Ongoing viral activity associated with host viral reservoir
  - Physical or psychological sequelae following long or difficult disease course
    - Mental health effects could be sizable as early reports suggest and include infected and uninfected patients
- Media reports of these patients referred to as **“long haulers”**

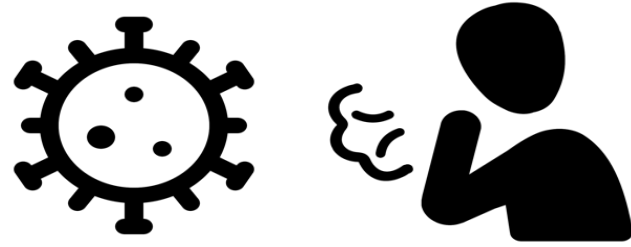
# Late inflammatory and virologic sequelae

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- Disease Burden?
- Underlying pathophysiology?
- Illness duration?
- Long-term prognosis?

**Need further investigation**

# ACUTE INFECTION (COVID-19)



Approx. 8.5mil cases in US  
Approx. 225,000 deaths

Characterized by *active viral replication and initial host response*

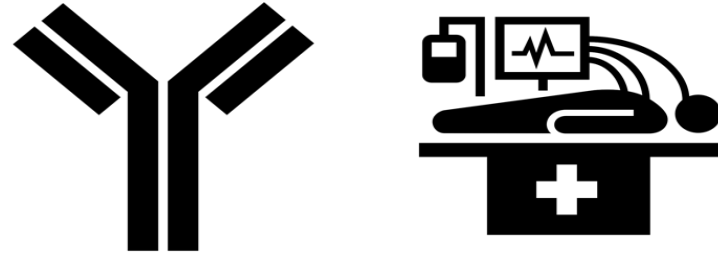
### Clinical presentation:

Fever, cough, dyspnea, myalgia, headache, sore throat, diarrhea, nausea, vomiting, anosmia, dysgeusia, abdominal pain

### Laboratory tests:

Viral test (+); Antibody (+) after 2 weeks

# POST-ACUTE HYPERINFLAMMATORY ILLNESS



MIS C 1000 cases (20 deaths)  
MIS A unknown

Characterized by a *dysregulated host response*

### Clinical presentation:

Gastrointestinal, cardiovascular, dermatologic/mucocutaneous, respiratory, neurological, musculoskeletal symptoms

### Laboratory tests:

Viral test (+/-); Antibody (+)

# LATE SEQUELAE



Not yet quantified

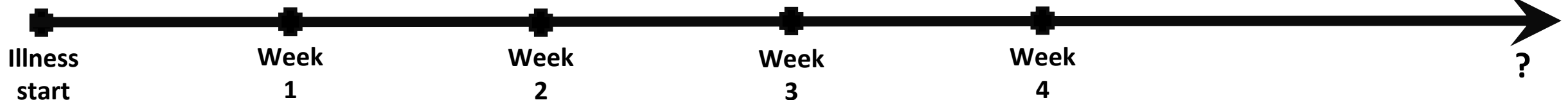
Pathophysiological pathways are *proposed but unproven*

### Clinical presentation:

Cardiovascular, pulmonary, central nervous system, psychological manifestations

### Laboratory tests:

Viral test, antibody profile uncharacterized





# Public health significance

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- Important implications for public health surveillance, clinical research, and health services planning
  - Examples: expanding surveillance definition to include different SARS-CoV-2 illness periods, longitudinal studies for patients with late sequelae (like Framingham Heart Study), providing evidence-based care for persons with late sequelae
- Medical and public health communities will need to understand full spectrum of disease due to SARS-CoV-2 to adequately manage burden of illness as persons experience different associated illnesses

# References

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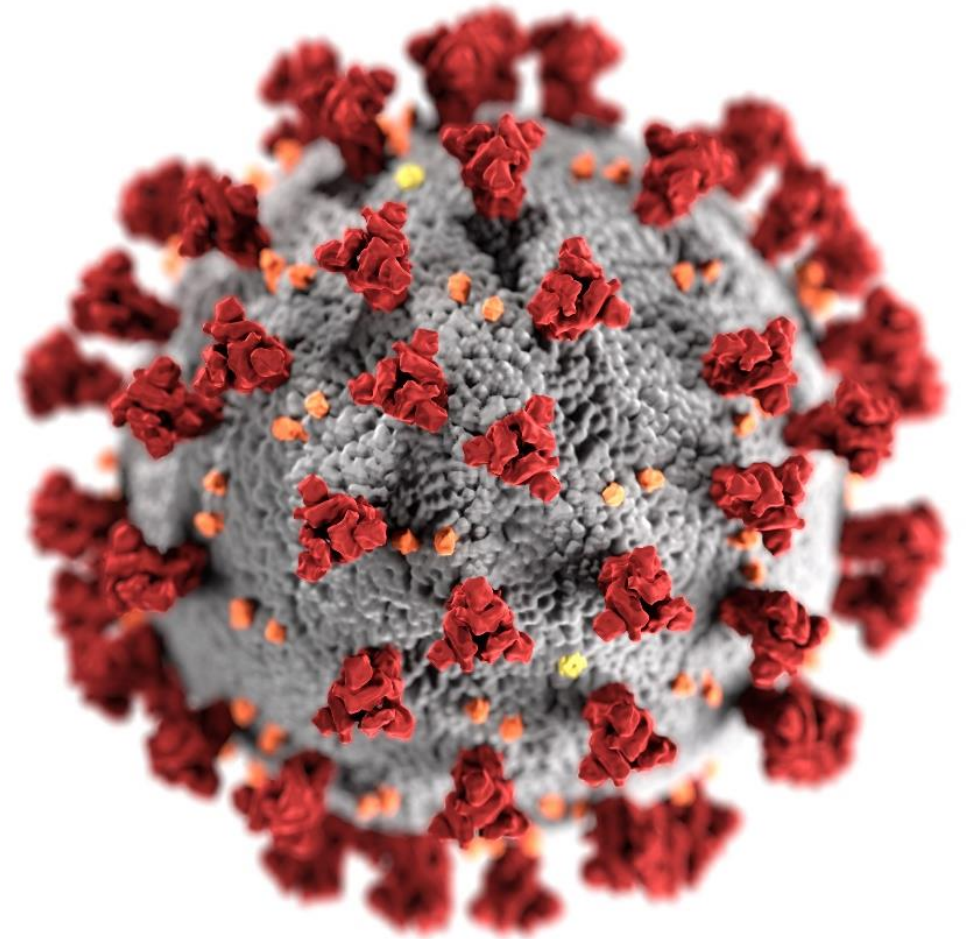
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# Thank you to colleagues in the CDC COVID-19 Response and IDSA

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- **Clinical Team, CDC COVID 19 Response**
  - Amish Talwar
  - James T. Lee
  - John Iskander
  - Ermias Belay
  - Kevin Clarke
- **Chief Medical Office, CDC COVID 19 Response**
  - John Brooks
- **IDSA, early reviewers**
  - Rana Chakraborty
  - Tina Tan
  - Amy MacIntyre
  - Carlos Del Rio

Thank you  
Deblina Datta MD, FIDSA  
ddatta@cdc.gov



For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



# The Mount Sinai COVID-19 Center of Excellence and Research Registry

Juan P. Wisnivesky, MD, DrPH  
Professor of Medicine  
Icahn School of Medicine at Mount Sinai



**Icahn  
School of  
Medicine at  
Mount  
Sinai**

# Disclosures

- ▶ Consulting honorarium: Sanofi and Banook
- ▶ Research grant: Sanofi and Amneal Pharmaceuticals

# Center for Post Covid-19 Care



# Center of Post Covid-19 Care

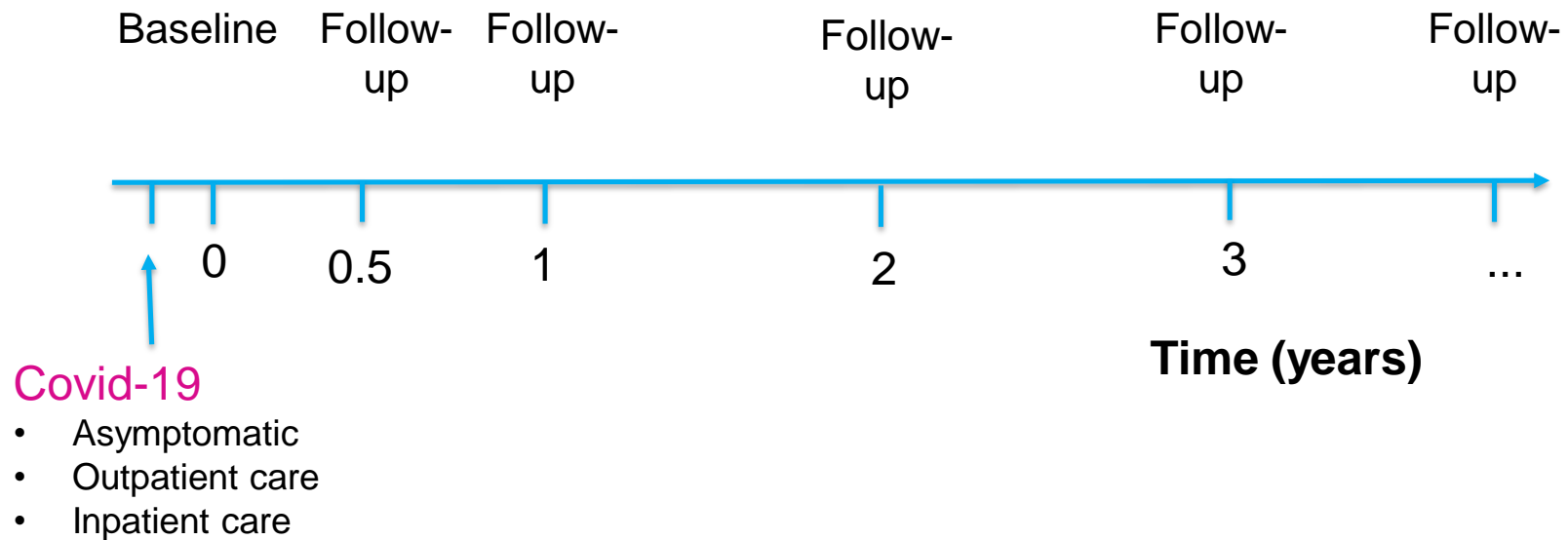
- ▶ Multidisciplinary team
  - Primary Care
  - Pulmonary Medicine
  - Cardiology
  - Infectious Diseases
  - Nephrology
  - Physiatry
  - Physical and Occupational Therapy
  - Radiology
  - Neuropsychiatry
  - Behavioral Health
  - Social Workers
  - Pharmacists
- ▶ Open May 2020
- ▶ Developing standardized protocol to manage patients
- ▶ >500 patients



# Goal of the Covid-19 Research Registry

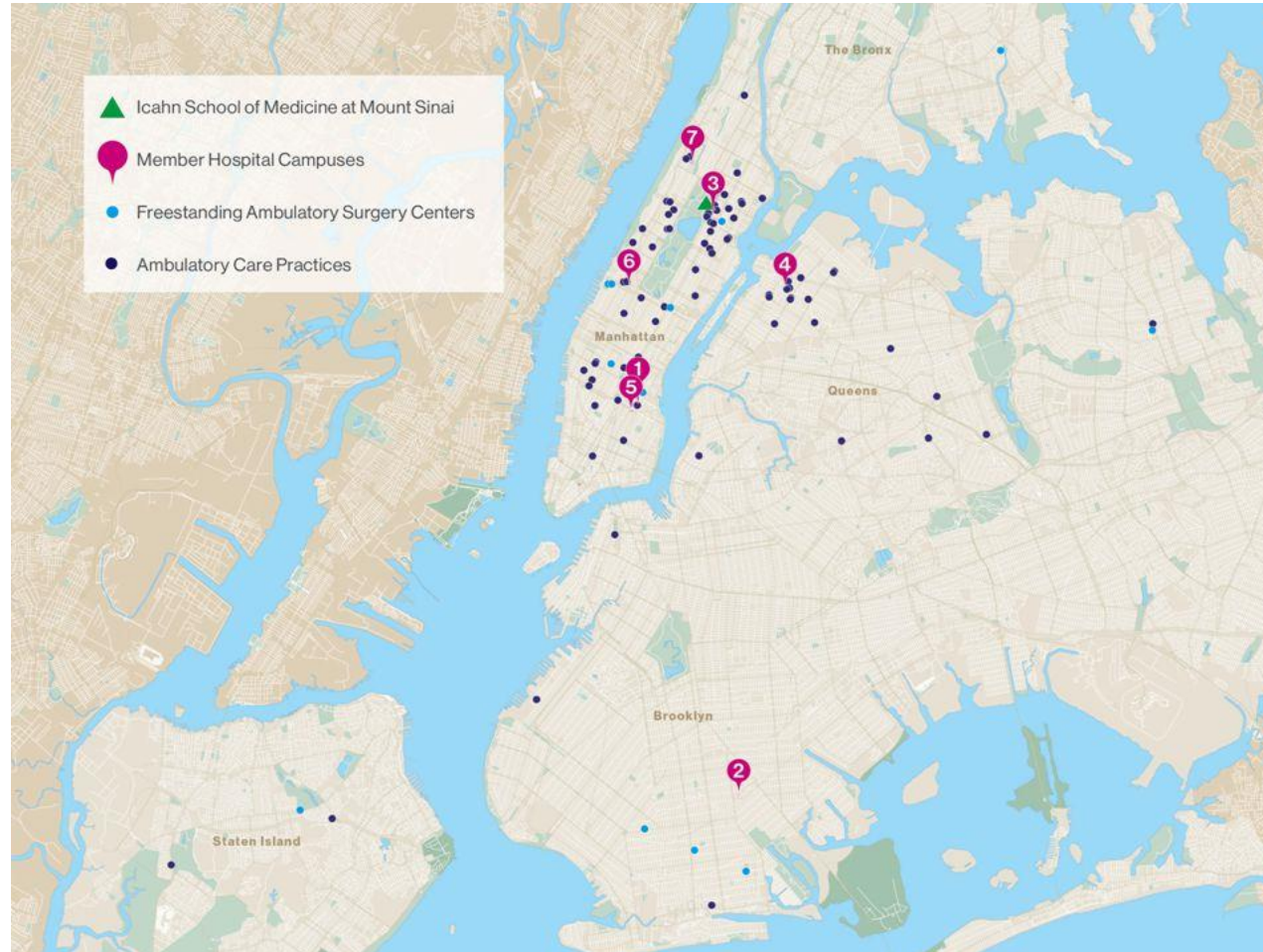
- ▶ Establish a prospective cohort to collect prospective data and biological samples from Covid-19 patients to study the long-term health consequences of infection

# Study Design

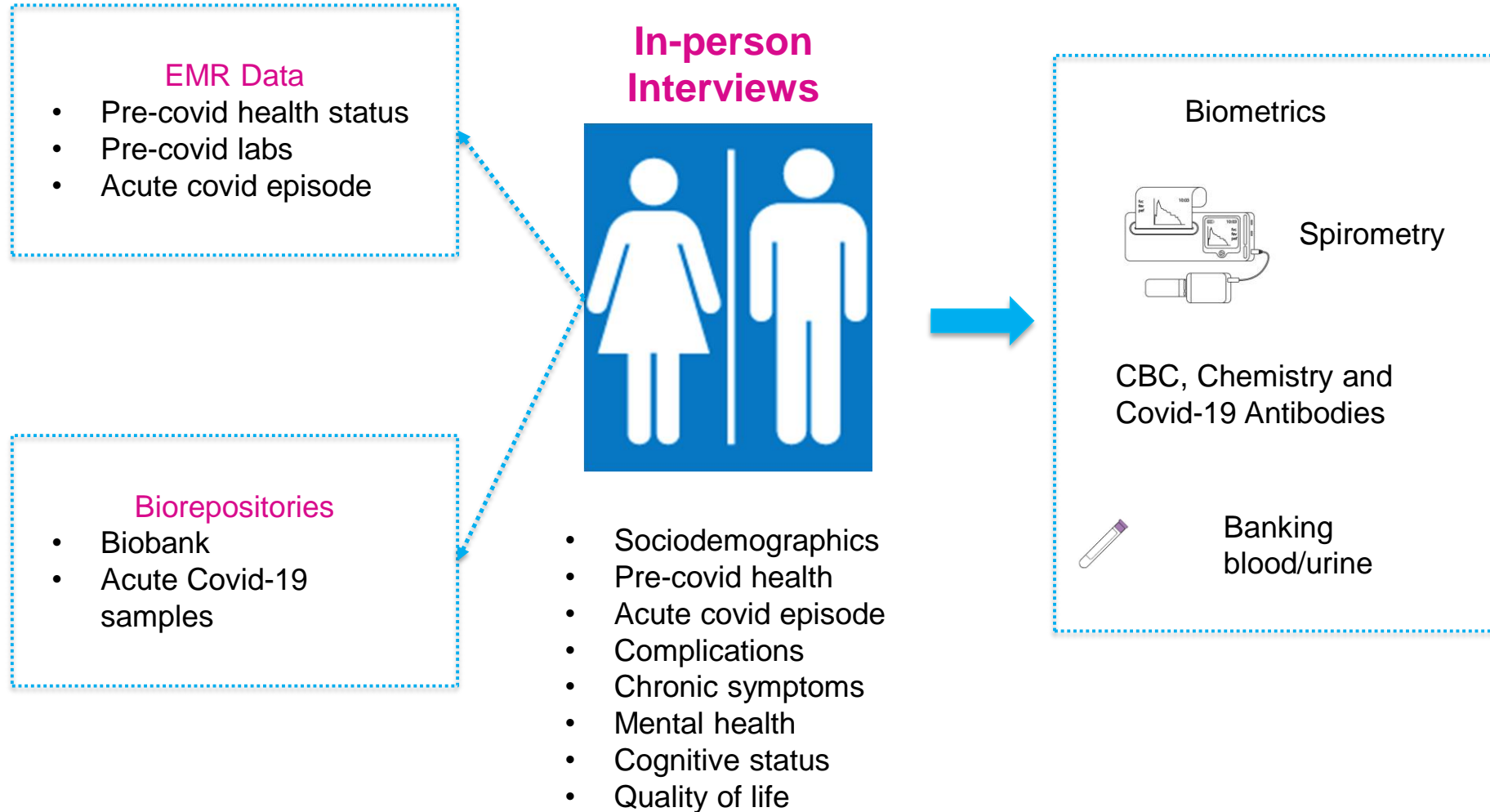


- 2,000 Covid-19 patients
- 500 controls

# Study Site: The Mount Sinai Health System



# Data Collection



# Baseline Characteristics of Participants (N=350)

Characteristic	Value
Age, years, mean (SD)	48.0 (13.8)
Female (%)	63
Race (%)	
White	60
Black	19
Asian	4
Multiracial/Other	17
Latinx (%)	20
Income (%)	
<\$25,000	11
\$25,000-\$60,000	21
\$60,000-\$150,000	39
>\$150,000	29
Smoker (%)	31
Comorbidities (%)	
Hypertension	32
Diabetes	11
Asthma	29
COPD	4
Cancer	8

# Baseline Characteristics of Participants (N=350)

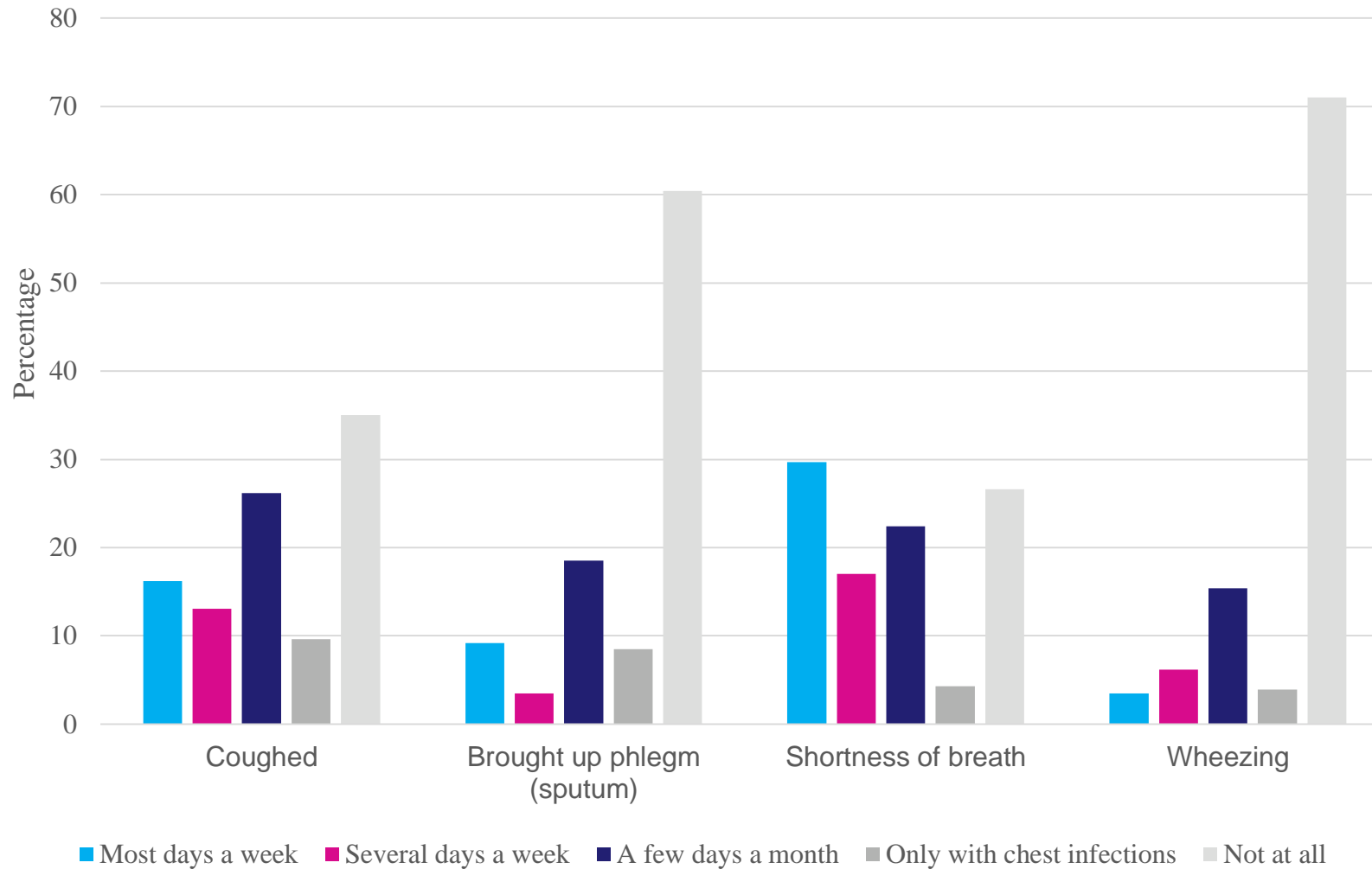
Characteristic	Value
Body Mass Index (%)	
Normal weight	33
Overweight	32
Obese	35
Received Covid-19 Care (%)	
Outpatient	52
Emergency room	36
Hospital	18
Admitted to ICU	13

# Symptoms During Acute Episode

Characteristic	Value
Symptoms at diagnosis of COVID-19 (%)	
Fatigue	64
Fever	60
Muscle or body aches	59
Shortness of breath	55
Headache	53
Cough	53
Lost of taste or smell	50
Sore throat	39
Diarrhea	37
Runny or stuffy nose	36
Feeling confused	32
Sneezing	21
Skin rash	14
No symptoms	1

# Pulmonary Symptoms among Participants

Over the past 3 months, I have...

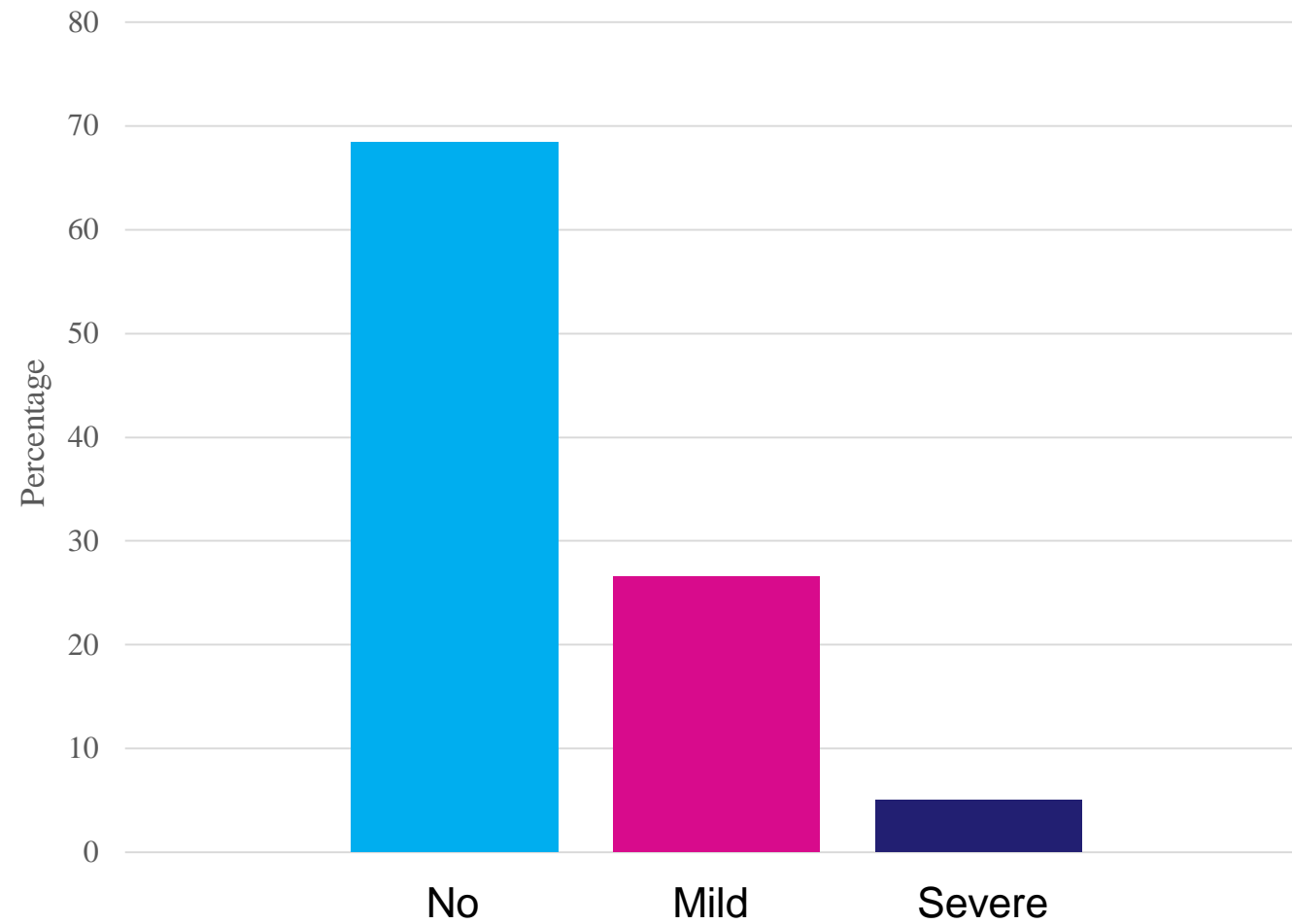




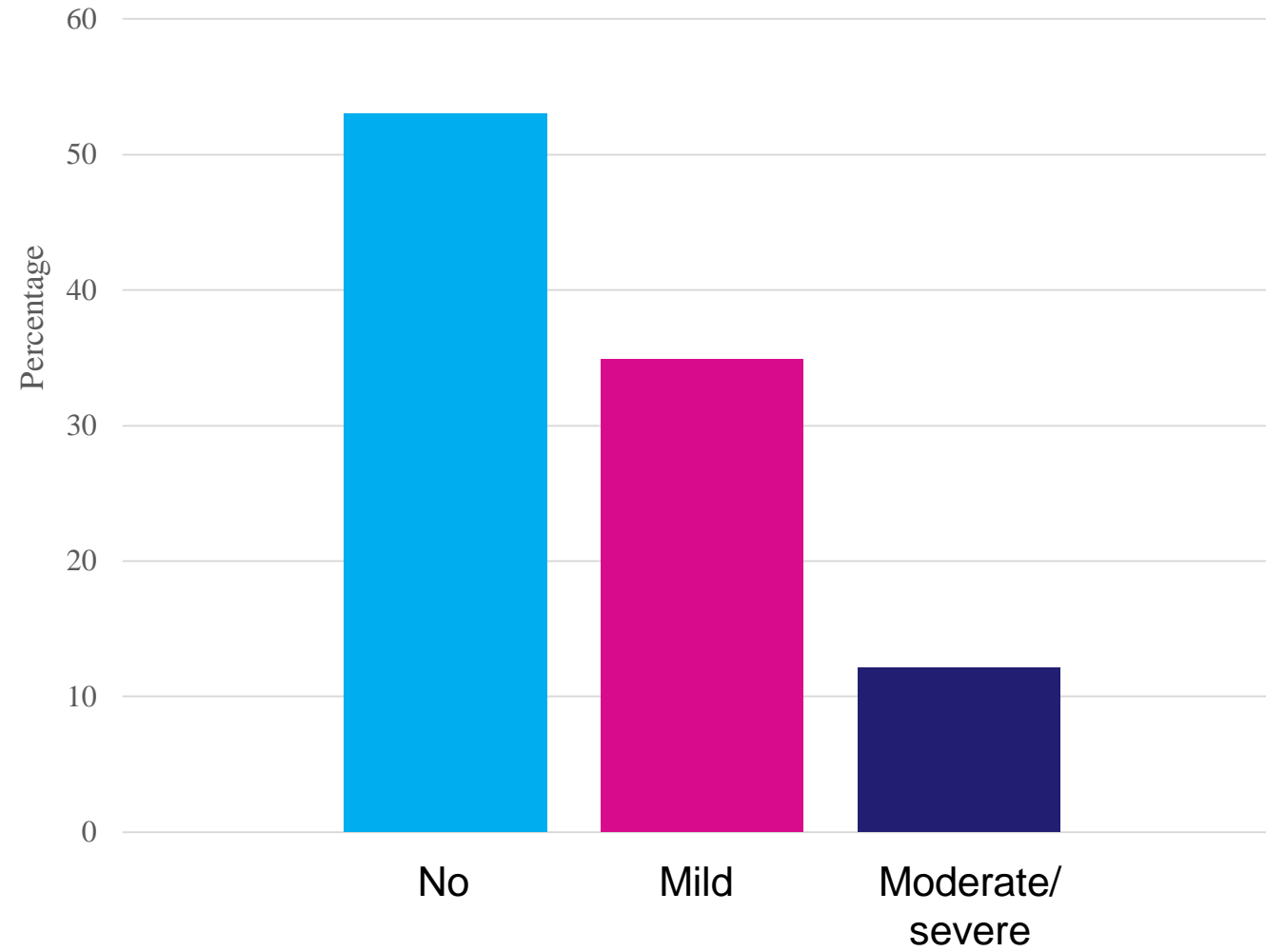
# Dyspnea Scores and Overall Health

Characteristic	Value
Shortness of Breath (%)	
Only with strenuous exercise	31
When hurrying on the level or walking up a slight hill	33
I walk slower or have to stop when walking at my own pace on the level	13
I stop for breath after walking about 100 yards	12
Too breathless to leave the house or breathless when dressing	11
Self-reported Overall Health (%)	
Excellent	4
Very good	14
Good	27
Fair	35
Poor	19

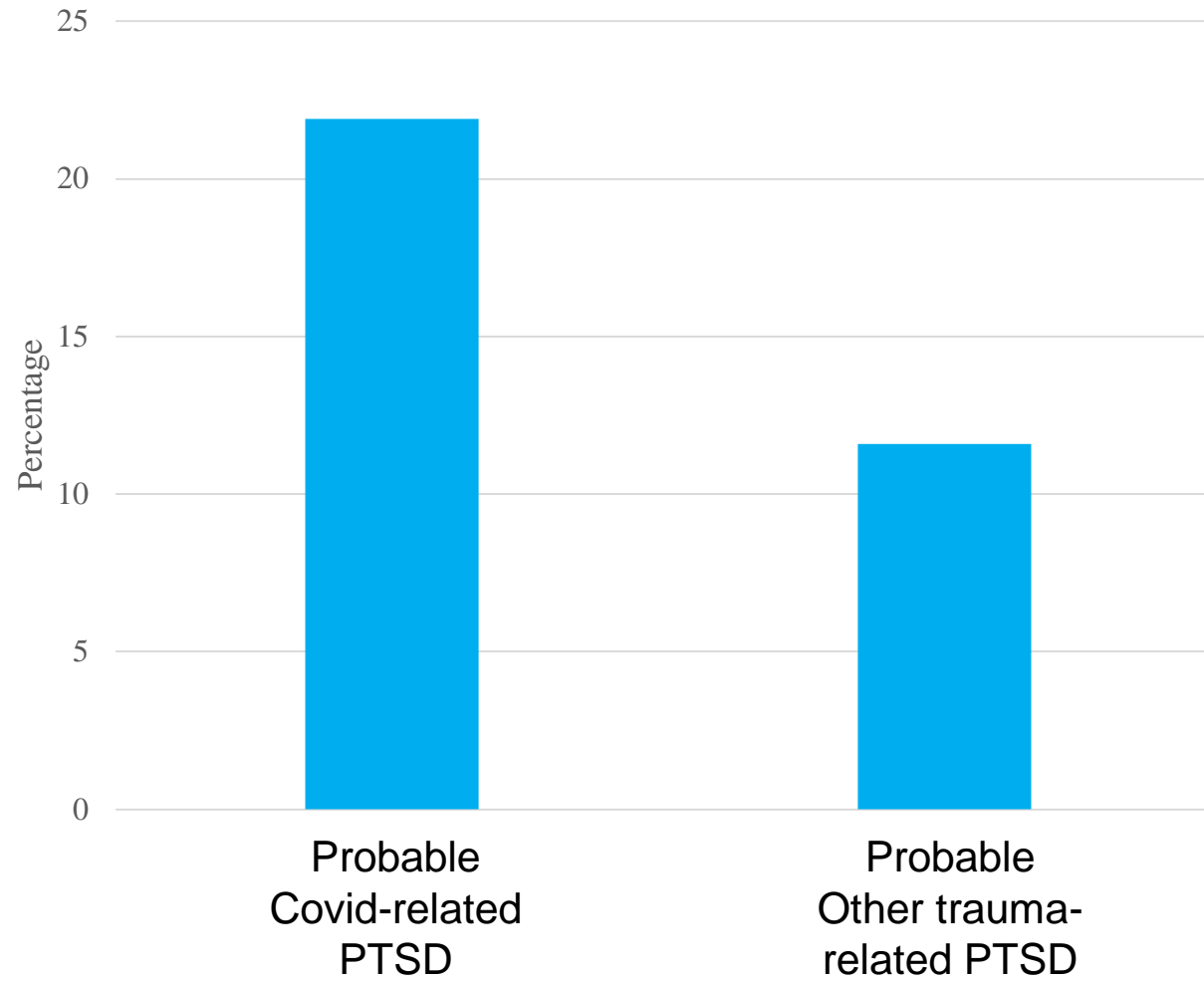
# Prevalence of Depression Symptoms



# Anxiety Symptoms



# PTSD Symptoms



# Post-covid Diagnoses

Condition	Percentage
Asthma	<1
COPD	0
Hypertension	3
Pulmonary embolus/DVT	<1
Kidney problems	<1
Stroke or TIA	<1

# Conclusions

- ▶ Completing the early stages of establishing a prospective cohort
- ▶ Considerable prevalence of pulmonary symptoms
- ▶ Large number of patients reporting symptoms of PTSD
- ▶ Longer follow up is needed to evaluate whether these patients are at increased risk of chronic complications

# Thanks!

- ▶ Patients participating in the study
- ▶ Elisa McBratney, Molly Doenberg, and CRCs, Melissa Martynenko, Minal Kale, Jenny Lin and Alex Federman
- ▶ Executive Committee: Barbara Murphy, Patricia Kovatch, Rosalind Wright, and Annetine Gelinjs
- ▶ Data Management Core: Emilia Bagiella, Usha Govindarajulu, and Hernis
- ▶ Biobank Core: Kirk Campbell and Kristina Meliambro
- ▶ Research IT Core: Girish Nadkarni, Alex Charney and Patricia Kovatch
- ▶ Zijian Chen and CoE staff
- ▶ Carlos Cordon Carlo and Clinical Laboratory staff
- ▶ Working groups chairs and members
  
- ▶ **Funded by ISMMS**

# Q&A and Discussion



Continue the  
conversation on Twitter

@RealTimeCOVID19  
#RealTimeCOVID19



We want to hear from you! Please complete the post-call survey.

Next CDC/IDSA COVID-19 Clinician Call:  
Saturday, November 7<sup>th</sup>

A recording of this call, and past calls,  
are posted on

[www.idsociety.org/podcasts](http://www.idsociety.org/podcasts)

### **Contact Us:**

Dana Wollins ([dwollins@idsociety.org](mailto:dwollins@idsociety.org))

Deirdre Lewis ([dlewis@idsociety.org](mailto:dlewis@idsociety.org))