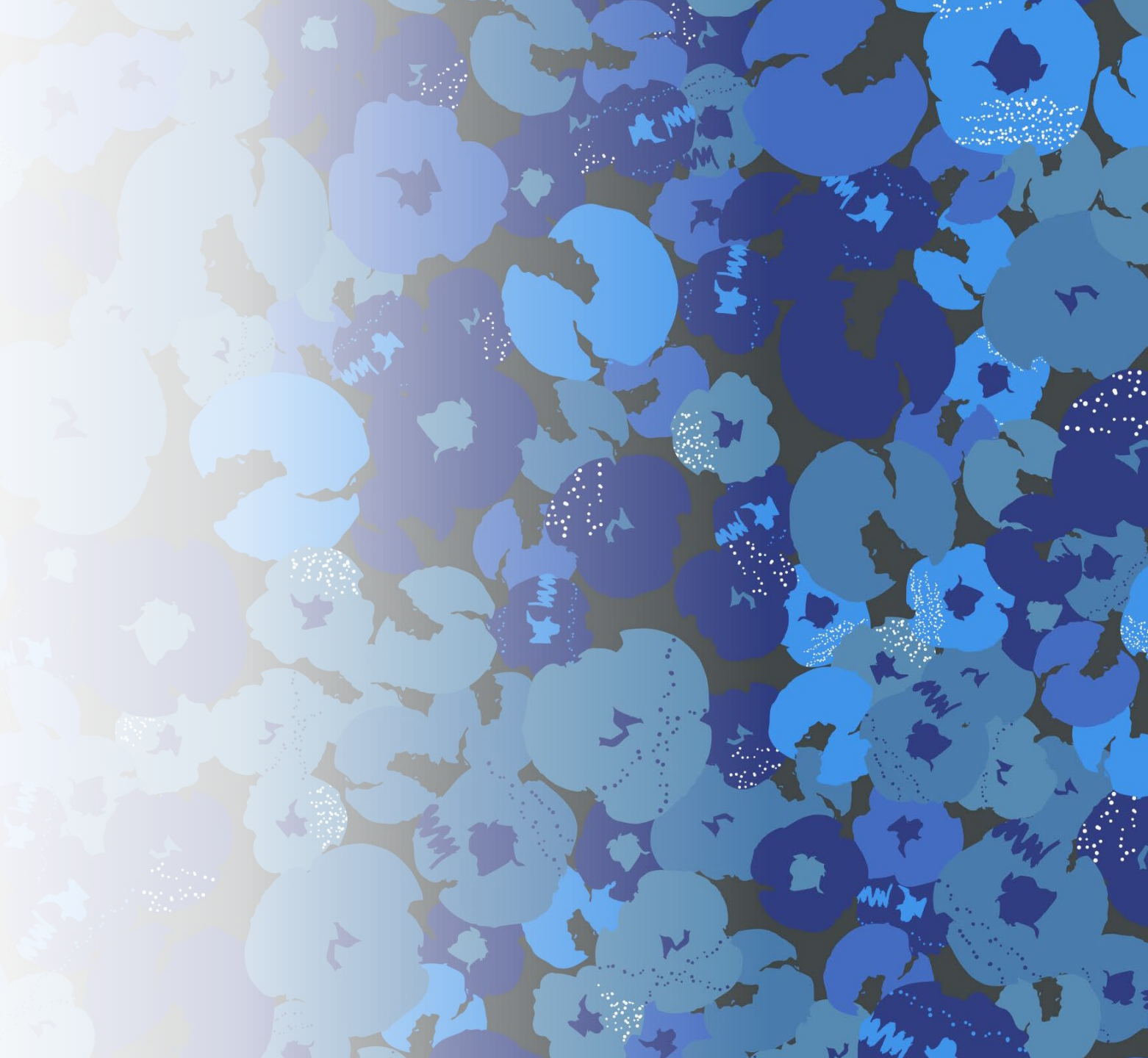
SARS-CORONAVIRUS-2 (COVID 19) Hot Topics

Symposium

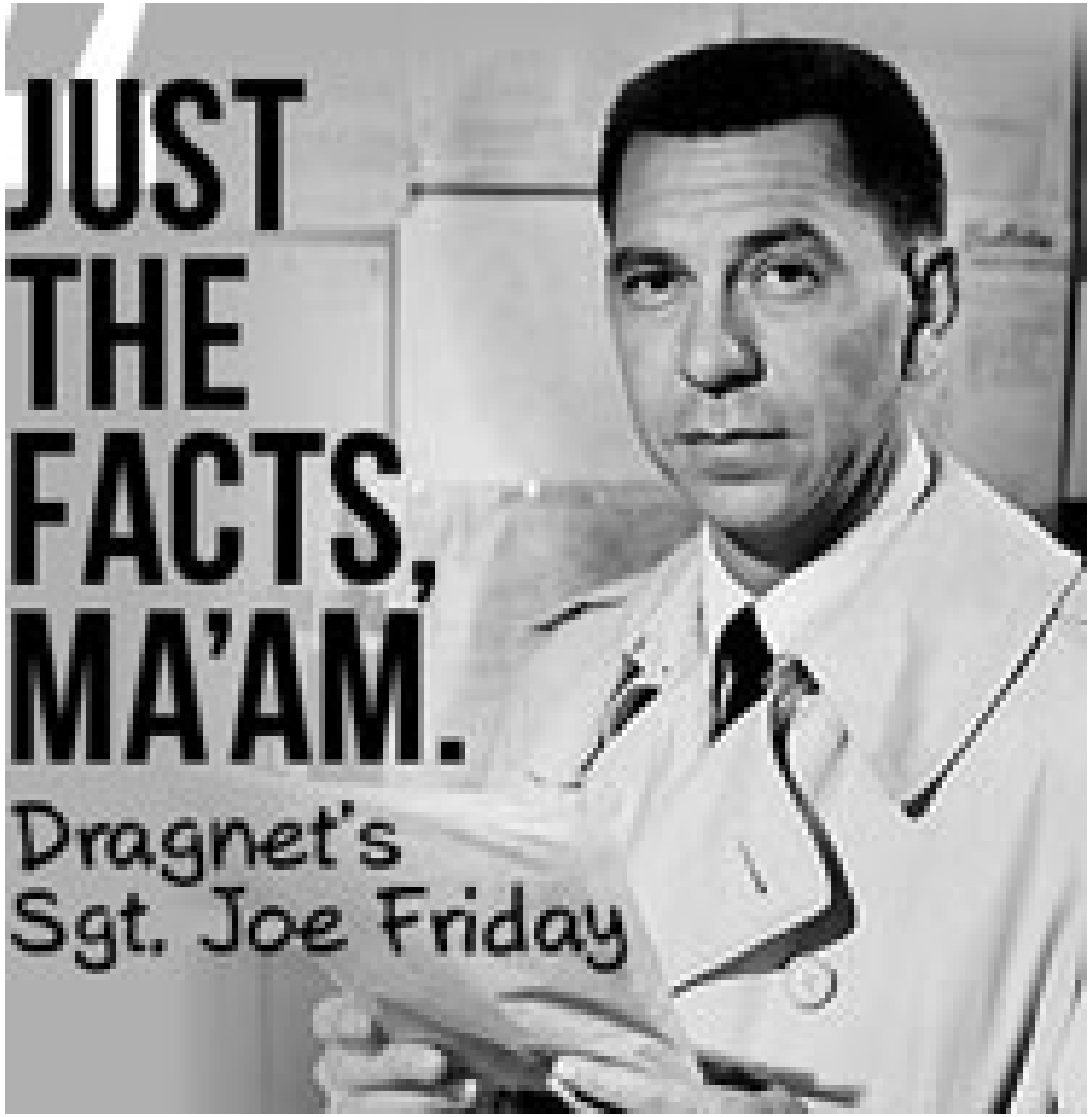
The Association for Healthcare Risk Management of New York , Inc.

January 29, 2021



Dispelling the Myths Around COVID-19

- Fact U.S. has 4% of World's population, 25% of COVID cases and 20% of COVID Deaths
- On average over 4000 people died / day last week from COVID
- New Variant strains are more easily transmissible and may give rise to future surges
- Fact: COVID can be serious in infants and children
- Fact rates of infection and death are significantly higher among African Americans and Latinx populations
- Fact: Despite Stringent precautions, COVID can spread rapidly in Assisted living and Long term care facilities & Congregate Settings
- Fact: Unless we reach herd immunity (70-80%) the pandemic will continue



SYMPOSIUM AGENDA

- Challenges in the Emergency Department or Urgent Care
  - Dr. Kelvin Adjei-Twum
- SARS-Coronavirus 2 (COVID 19) in Children
  - Dr. Patricia Whitley-Williams -
- Clinical Manifestations of COVID 19 among Older Persons
  - Dr. Thomas Cudjoe
- COVID 19 Vaccines
  - Dr. Dial Hewlett Jr

APPROACH TO PATIENTS WITH COVID-19 IN ED & UC SETTINGS

Kelvin Adjei-Twum MD, MBA

January 29th, 2021

Objectives

- To determine screening guidelines and tools used to diagnose COVID-19 patients in the acute care setting
- To understand current management and treatment standards for COVID-19
- Disposition and follow-up considerations for COVID-19 patients



Diagnosis



- Clinical presentation
  - *Fever presents initially in approximately 38-44% of cases*



- Pulse Oximeter
  - *Helps determine disposition and management*
- Labs, imaging
  - *PCR vs antigen*
- Special population
  - *Elderly*
  - *Obesity*
  - *Hx of diabetes, CHF, HTN*
  - *Immunosuppressed*
  - *Pulmonary disease*



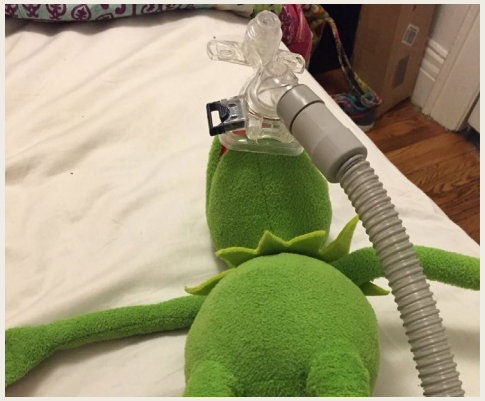
Management & Meds

- Supportive Care
- Remdesivir
- Dexamethasone
- Monoclonal Antibodies
  - *No oxygen requirement*
  - *Supply limitations*
- Convalescent Plasma
  - *Severe cases*





Disposition & Follow-up



- Admit to hospital
  - *Oxygen requirement*
  - *Infectious disease, Pulmonology consultations*



- Discharge home
  - *Strict quarantine and return precautions*

- In-between?
  - *Home oxygen consideration*
  - *Case management and PCP follow-up*



Thank You

- Disclosure Statement
  - *No financial or affiliation concerning materials discussed in this presentation*



RUTGERS
Robert Wood Johnson
Medical School

COVID-19 MIS-C in CHILDREN

Patricia Whitley-Williams, MD, FAAP

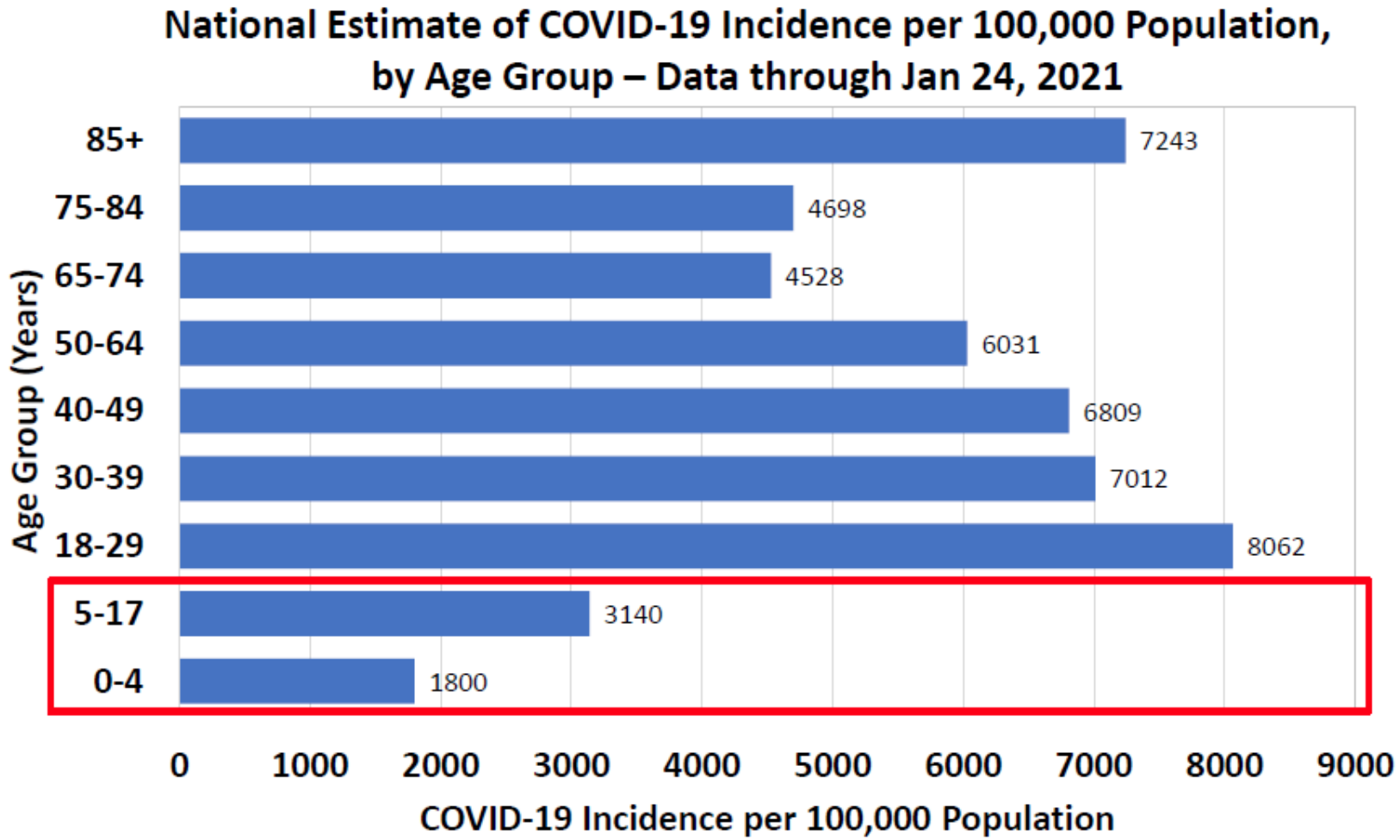
January 29, 2021

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DISCLOSURES

- I currently serve as President of National Foundation of Infectious Diseases
- I have no other disclosures

COVID-19 Reported Incidence by Age Group: Lowest in Children <18 Years



Updated as of 1/24/21. Data are based on COVID-19 case-level data reported by state and territorial jurisdictions to CDC. The numbers are confirmed and probable COVID-19 cases as reported by U.S. states, territories, New York City, and the District of Columbia from the previous day.

https://www.cdc.gov/covid-data-tracker/index.html#demographics

Estimated SARS-CoV-2 Seroprevalence in Children <18 Years, Mississippi, May–Sept 2020

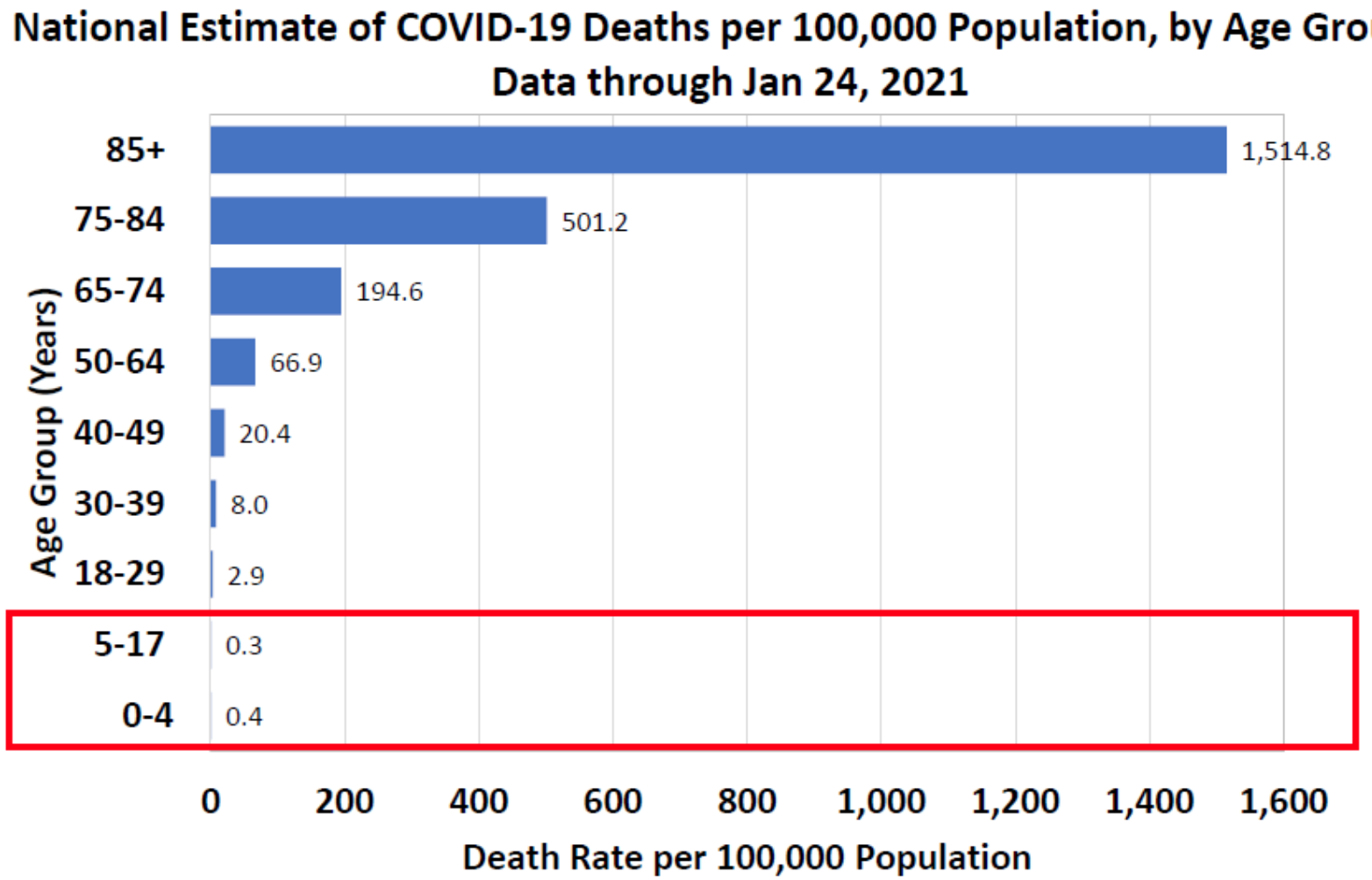
- Residual serum samples from routine laboratory testing
- University of Mississippi Medical Center

SARS-CoV-2 Serology Results

Characteristic	No.	Positive	%
Overall	1,603	175	10.9
Race/Ethnicity			
Black, non-Hispanic	901	117	13.0
Hispanic	69	16	23.2
Other, non-Hispanic	44	7	15.9
White, non-Hispanic	565	30	5.3
Dates of specimen collection			
May 17-31, 2020	174	6	3.5
June 1-30, 2020	447	28	6.3
July 1-31, 2020	339	35	10.3
August 1-31, 2020	368	56	15.2
September 1-19, 2020	275	50	18.2

C. Hobbs, et al. CDC COVID-19 Response Team, *unpublished data*

COVID-19 Mortality Rates Are Lowest Among Children <18 Years



Updated as of 1/24/21. Data are based on COVID-19 case-level data reported by state and territorial jurisdictions to CDC. The numbers are confirmed and probable COVID-19 cases as reported by U.S. states, territories, New York City, and the District of Columbia from the previous day.

https://www.cdc.gov/covid-data-tracker/index.html#demographics

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Background of MIS-C

- April 2020 –Severe inflammatory syndrome noted in 8 children in the UK, with current/recent infection with SARS-CoV-2; 75% Afro-Caribbean; two-thirds were male
- May 2020 –Cases reported in New York City
- May 14 –CDC Advisory requesting healthcare providers to report patients <21 years old meeting MIS-C criteria to local, state, or territorial health department

COVID-19–Associated Multisystem Inflammatory Syndrome in Children — United States, March–July 2020; MMWR; / August 14, 2020 / 69(32);1074–1080

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Multisystem Inflammatory Syndrome in Children (MIS-C) Case Definition - CDC

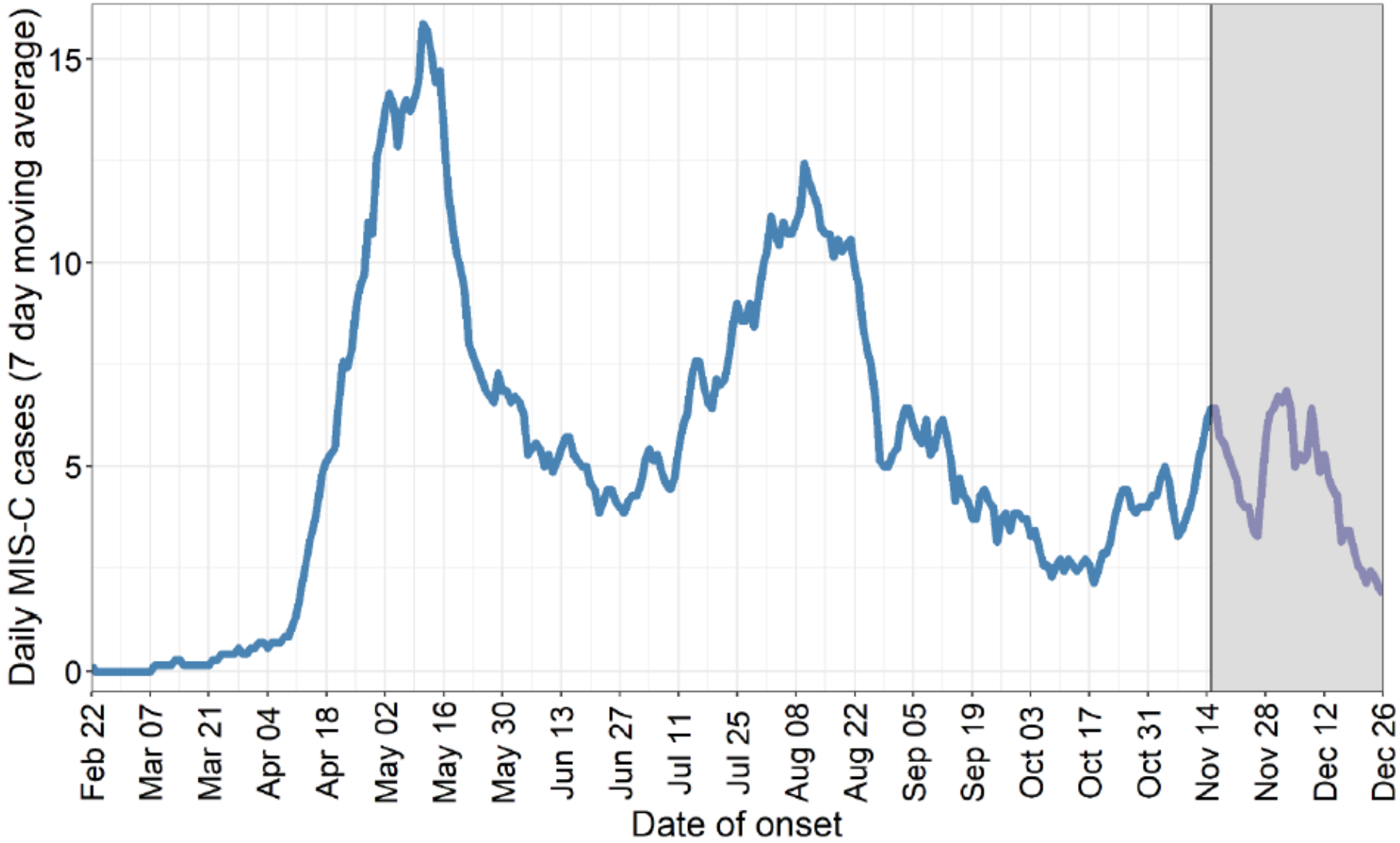
- An individual aged <21 years presenting with fever, laboratory evidence of inflammation, and evidence of clinically severe illness requiring hospitalization, with multisystem (≥2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); **AND**
- No alternative plausible diagnoses; **AND**
- Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or COVID-19 exposure within the 4 weeks prior to the onset of symptoms

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Presentation of COVID-19 MIS-C

- Fever
- Vomiting, Diarrhea
- Rash
- Fatigue, Weakness
- Cough, Difficulty breathing
- Chest pain
- Body aches, joint pains
- Abdominal pain, Appendicitis

Daily MIS-C Cases, March–December 2020



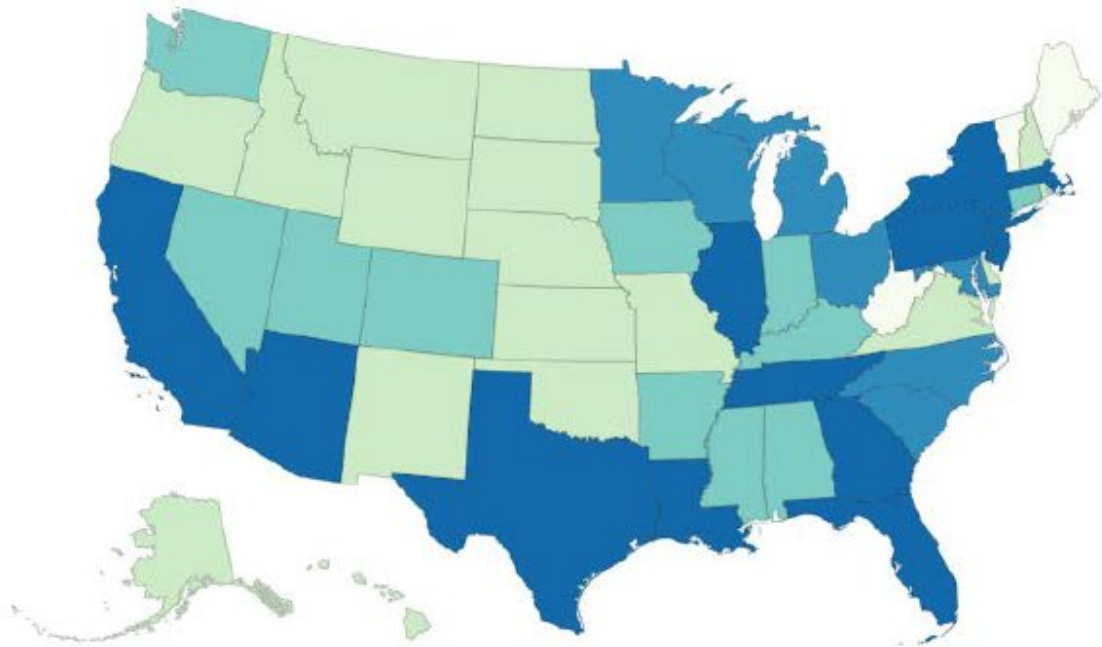
N=1659; Gray area on right represents most recent 6 weeks of data, for which case reports are likely incomplete.

https://www.cdc.gov/mis-c/cases/index.html; last updated January 8, 20

Health Department-Reported Cases of Multisystem Inflammatory Syndrome in Children (MIS-C)

- 1,659 cases
- 26 deaths
- 47 states, New York City, and Washington, DC, have reported ≥1 case
- Average age 8 years
- 57% male
- 33% Hispanic/Latino; 30% Black, non-Hispanic

February 19 – December 29, 2020



Reported MIS-C Cases

- No cases reported
- 1-10
- 11-30
- 31-50
- 51+

Territories AS FM GU MH MP PR PW VI

https://www.cdc.gov/mis-c/cases/index.html; last updated January 8, 2021

Estimated Incidence of MIS-C Cases, 7 Jurisdictions, April–June 2020

- Population-based incidence estimates (denominator was population of persons <21 years):
  - 1 to 8.5 MIS-C cases per million person-months
- Using denominator of estimated SARS-CoV-2 infections, incidence was higher among Black/African American and Hispanic/Latino children compared with White children

	Adjusted Incidence per Million SARS-CoV-2 Infections in Children (95% CI)	Adjusted Incidence Rate Ratio (95% CI)
Race and Ethnicity		
White	110 (77–156)	reference
Black/African American	616 (481–790)	6 (4–9)
Hispanic/Latino	467 (371–588)	4 (3–6)
Asian/Pacific Islander	315 (169–589)	3 (1–6)

A. Payne, et al, CDC COVID-19 Response Team, *unpublished data*

Summary of COVID-19 in Children

- Children <18 years have lower rates of COVID-19 incidence, hospitalization, and mortality than adults.
- Children are susceptible to SARS-CoV-2, though younger children tended to have fewer respiratory symptoms than adults.
- MIS-C is a complication of COVID-19 infection
  - disproportionately affects Black/African American children and Hispanic/Latino children.
- Further studies are needed to fully understand the role of children and teens in SARS-CoV-2 transmission and risk factors for severe illness and complications of COVID
- How do we prevent COVID-19 in children?

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Rationale for COVID-19 Vaccine Trials in Children

- Pediatric burden of disease is significant
- Disproportionate burden among children in communities of color
- Indirect effects to the child and society (school, development, etc.)
- Continued burden if we wait for natural “herd” effects
- Vaccination may prevent asymptomatic carriage, thus reversing pandemic more rapidly
- Clinical trials are starting in children above age 12 years




Hutchins Family







Presentation of COVID-19 MIS-C

- Fever ≥38.0°C for ≥24 hours, or report of subjective fever lasting ≥24 hours
- Including, but not limited to, one or more of the following:
  - elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin
- may present with some of the signs and symptoms of Kawasaki disease
  - but should be reported if they meet the case definition for MIS-C
- Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection

COVID-19–Associated Multisystem Inflammatory Syndrome in Children — United States, March–July 2020

Shana Godfred-Cato, DO[1]; Bobbi Bryant, MPH[1,2]; Jessica Leung, MPH[1]; Matthew E. Oster, MD[1]; Laura Conklin, MD[1]; Joseph Abrams, PhD[1]; Katherine Roguski, MPH[1]; Bailey Wallace, MPH[1,2]; Emily Prezzato, MPH[1]; Emilia H. Koumans, MD[1]; Ellen H. Lee, MD[3]; Anita Geevarughese, MD[3]; Maura K. Lash, MPH[3]; Kathleen H. Reilly, PhD[3]; Wendy P. Pulver, MS[4]; Deepam Thomas, MPH[5]; Kenneth A. Feder, PhD[6]; Katherine K. Hsu, MD[7]; Nottasorn Plipat, MD, PhD[8]; Gillian Richardson, MPH[9]; Heather Reid[10]; Sarah Lim, MBBCh[11]; Ann Schmitz, DVM[12,13]; Timmy Pierce, MPH[1,2]; Susan Hrapcak, MD[1]; Deblina Datta, MD[1]; Sapna Bamrah Morris, MD[1]; Kevin Clarke, MD[1]; Ermias Belay, MD[1]; California MIS-C Response Team

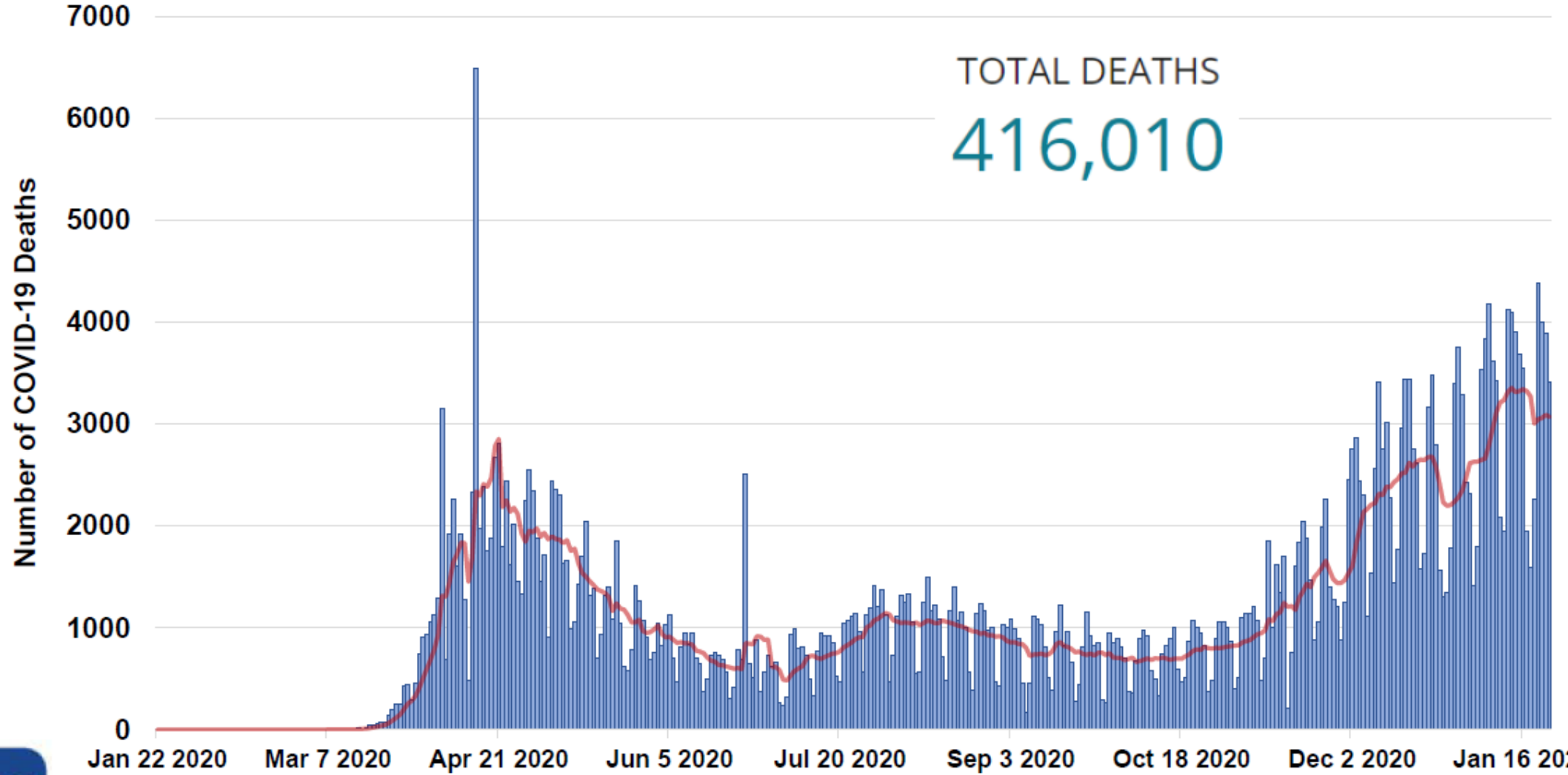
Three classes of patients:

- **Class 1 (n=203), "typical" MIS-C**
  - 98% serology positive
  - 100% cardiovascular and 98% GI manifestations
  - Markedly elevated laboratory markers of inflammation
  - 84% ICU admission
- **Class 2 (n=169), acute COVID-19/MIS-C combo**
  - 100% RT-PCR positive, 16% serology positive
  - More respiratory involvement
  - 62% ICU admission
- **Class 3 (n=198), milder illness**
  - Younger, median age 6 years
  - Higher frequency of rash, mucocutaneous lesions
  - 97% serology positive, 36% RT-PCR; 44% ICU admission

Godfred-Cato, et al. *MMWR* 3030;69:1074-80

Trends in Number of COVID-19 Deaths in the United States

January 22, 2020, to January 24, 2021

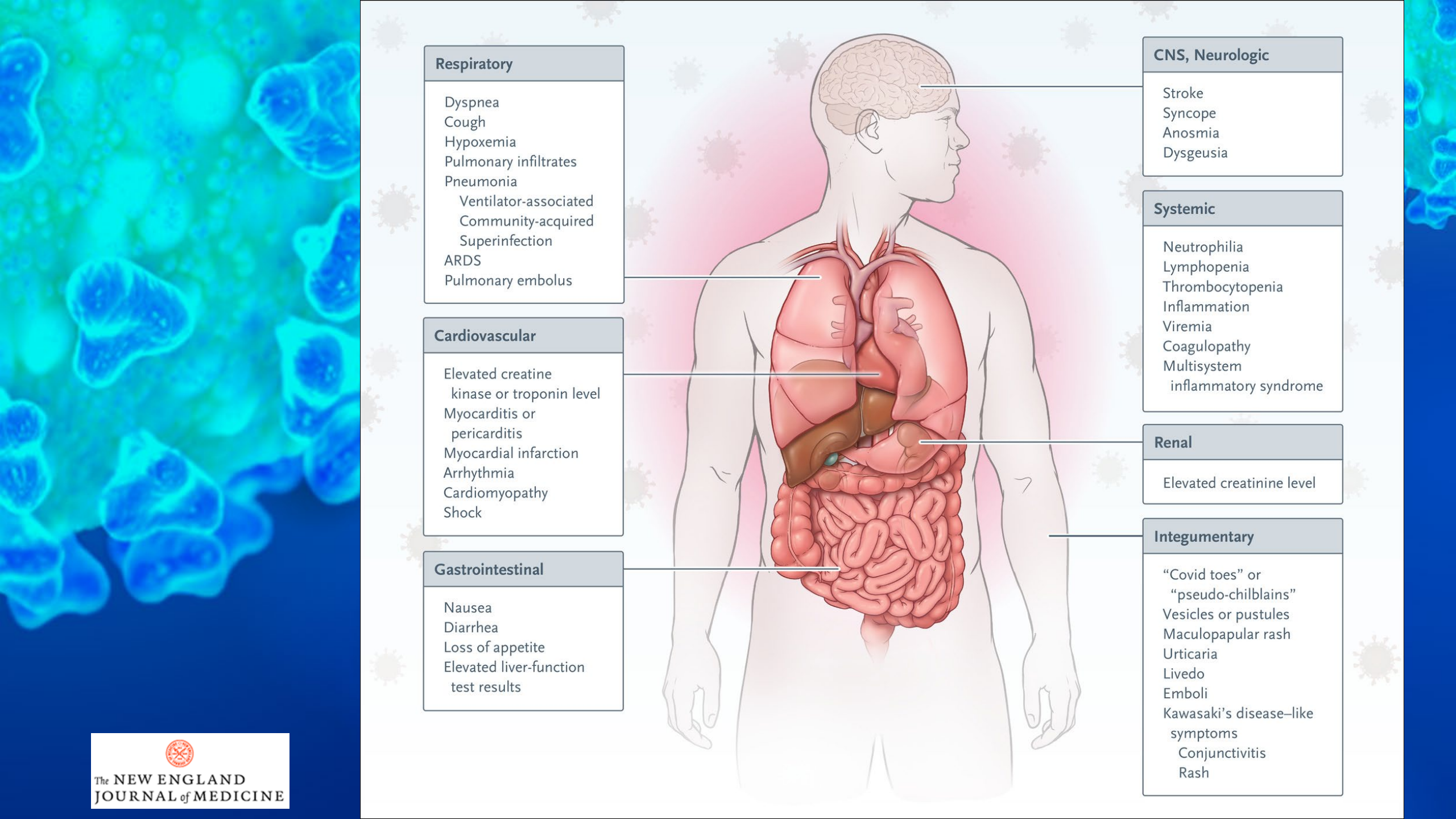


https://www.cdc.gov/covid-data-tracker/index.html#trends

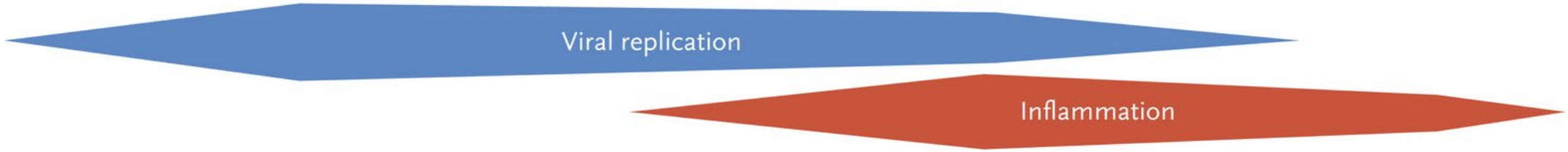
Covid-19: Aging Considerations

Thomas K.M. Cudjoe, MD, MPH
Assistant Professor of Medicine
Johns Hopkins School of Medicine

January 29, 2021



The NEW ENGLAND JOURNAL of MEDICINE

	Asymptomatic or Presymptomatic	Mild Illness	Moderate Illness	Severe Illness	Critical Illness
Features	Positive SARS-CoV-2 test; no symptoms	Mild symptoms (e.g., fever, cough, or change in taste or smell); no dyspnea	Clinical or radiographic evidence of lower respiratory tract disease; oxygen saturation ≥94%	Oxygen saturation <94%; respiratory rate ≥30 breaths/min; lung infiltrates >50%	Respiratory failure, shock, and multiorgan dysfunction or failure
Testing	Screening testing; if patient has known exposure, diagnostic testing	Diagnostic testing	Diagnostic testing	Diagnostic testing	Diagnostic testing
Isolation	Yes	Yes	Yes	Yes	Yes
Proposed Disease Pathogenesis					
Potential Treatment					
Management Considerations	Monitoring for symptoms	Clinical monitoring and supportive care	Clinical monitoring; if patient is hospitalized and at high risk for deterioration, possibly remdesivir	Hospitalization, oxygen therapy, and specific therapy (remdesivir, dexamethasone)	Critical care and specific therapy (dexamethasone, possibly remdesivir)

The NEW ENGLAND JOURNAL of MEDICINE

Risk Factors for Severe COVID-19

Older age

Chronic obstructive pulmonary disease

Cardiovascular disease (e.g., heart failure, coronary artery disease, or cardiomyopathy)

Type 2 diabetes mellitus

Obesity (body-mass index, ≥30)

Sickle cell disease

Chronic kidney disease

Immunocompromised state from solid-organ transplantation

Cancer

March 18, 2020

MMWR
Morbidity and Mortality Weekly Report

Known

-Coronavirus disease (COVID-19) can cause severe illness and death, particularly among older adults with chronic health conditions.

Insights

-Long-term residential care facility in Washington State resulted in cases among 81 residents, 34 staff members, and 14 visitors; 23 persons died.

-Limitations in effective infection control and prevention and staff members working in multiple facilities contributed to intra- and interfacility spread.

March 18, 2020

MMWR
Morbidity and Mortality Weekly Report

Implications

-Long-term care facilities should take proactive steps to protect the health of residents and preserve the health care workforce.

Identify and exclude potentially infected staff members

Restrict visitation except in compassionate care situations

Ensuring early recognition of potentially infected patients

Implementing appropriate infection control measures

April 3, 2020

MMWR
Morbidity and Mortality Weekly Report

Known

-Community transmission associated with rapid spread and high morbidity and mortality among older adults in long-term skilled nursing facilities.

-COVID-19 transmission in other types of senior living communities has not been described.

Insights

-Following identification of two COVID-19 cases in a Seattle independent and assisted living facility, stringent preventive measures were implemented.

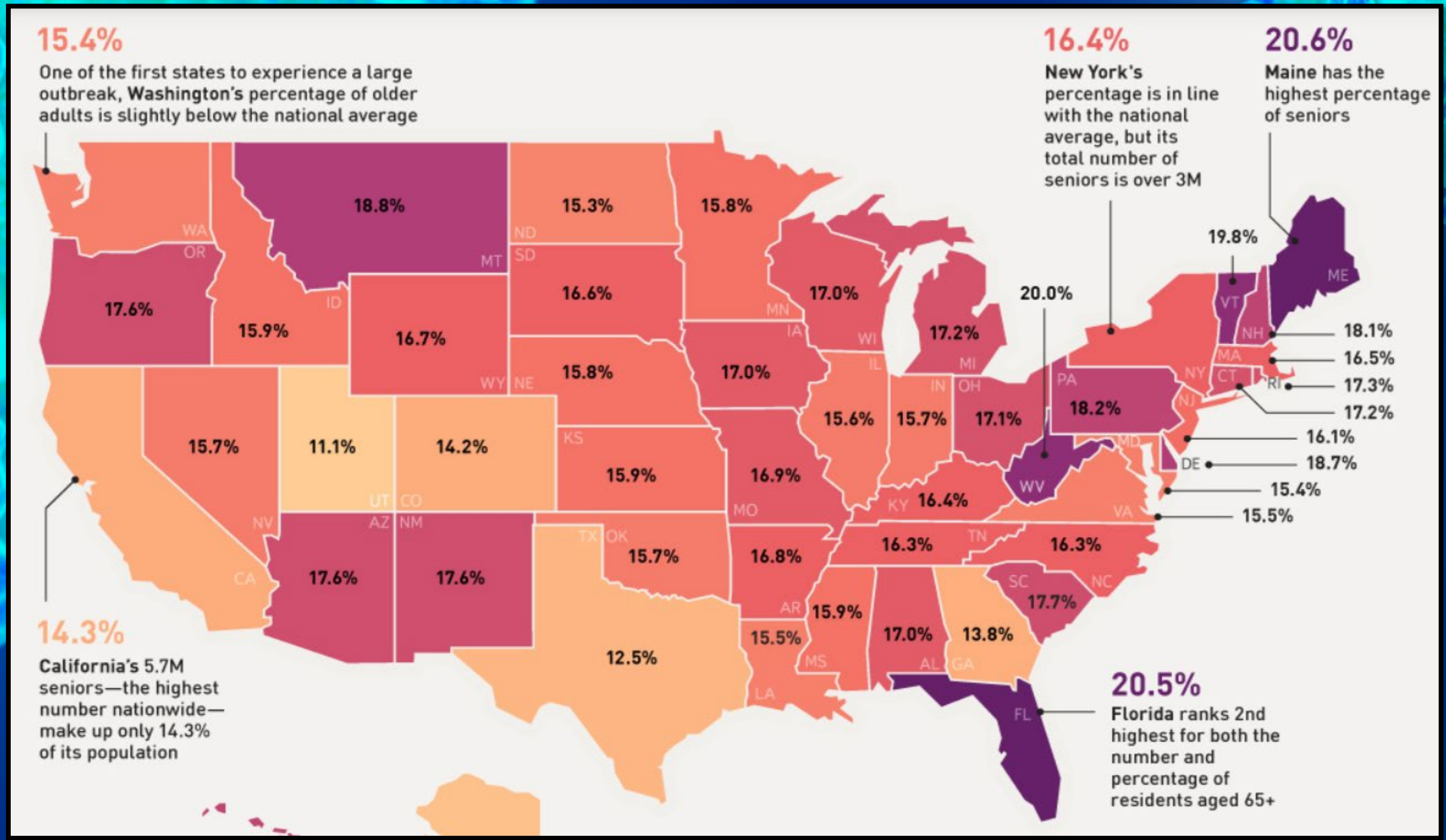
-Testing of all residents and staff members found few cases of COVID-19. Three of four residents who had positive test results were asymptomatic.

April 3, 2020

MMWR
Morbidity and Mortality Weekly Report

Implications

Symptom-based screening might not identify SARS-CoV-2 infections in independent and assisted living facility residents.


15.4%
One of the first states to experience a large outbreak, Washington's percentage of older adults is slightly below the national average
16.4%
New York's percentage is in line with the national average, but its total number of seniors is over 3M
20.6%
Maine has the highest percentage of seniors
WA 15.4%
OR 17.6%
CA
NV 15.7%
ID 15.9%
MT 18.8%
WY 16.7%
UT 11.1%
AZ 17.6%
CO 14.2%
NM 17.6%
ND 15.3%
SD 16.6%
NE 15.8%
KS 15.9%
OK 15.7%
TX 12.5%
MN 15.8%
IA 17.0%
MO 16.9%
AR 16.8%
LA 15.5%
WI 17.0%
IL 15.6%
MS 15.9%
MI 17.2%
IN 15.7%
KY 16.4%
TN 16.3%
AL 17.0%
OH 17.1%
WV 20.0%
VA 15.5%
NC 16.3%
SC 17.7%
GA 13.8%
FL 20.5%
PA 18.2%
NY 16.1%
MD 15.4%
DE 18.7%
NJ 17.2%
CT 17.3%
RI 16.5%
MA 18.1%
VT 19.8%
NH
ME
14.3%
California's 5.7M seniors—the highest number nationwide—make up only 14.3% of its population
20.5%
Florida ranks 2nd highest for both the number and percentage of residents aged 65+

CDC Has Information For Older Adults at Higher Risk

8 out of **10** COVID-19 deaths reported in the U.S. have been in adults 65 years old and older. Visit CDC.gov/coronavirus for steps to reduce your risk of getting sick.



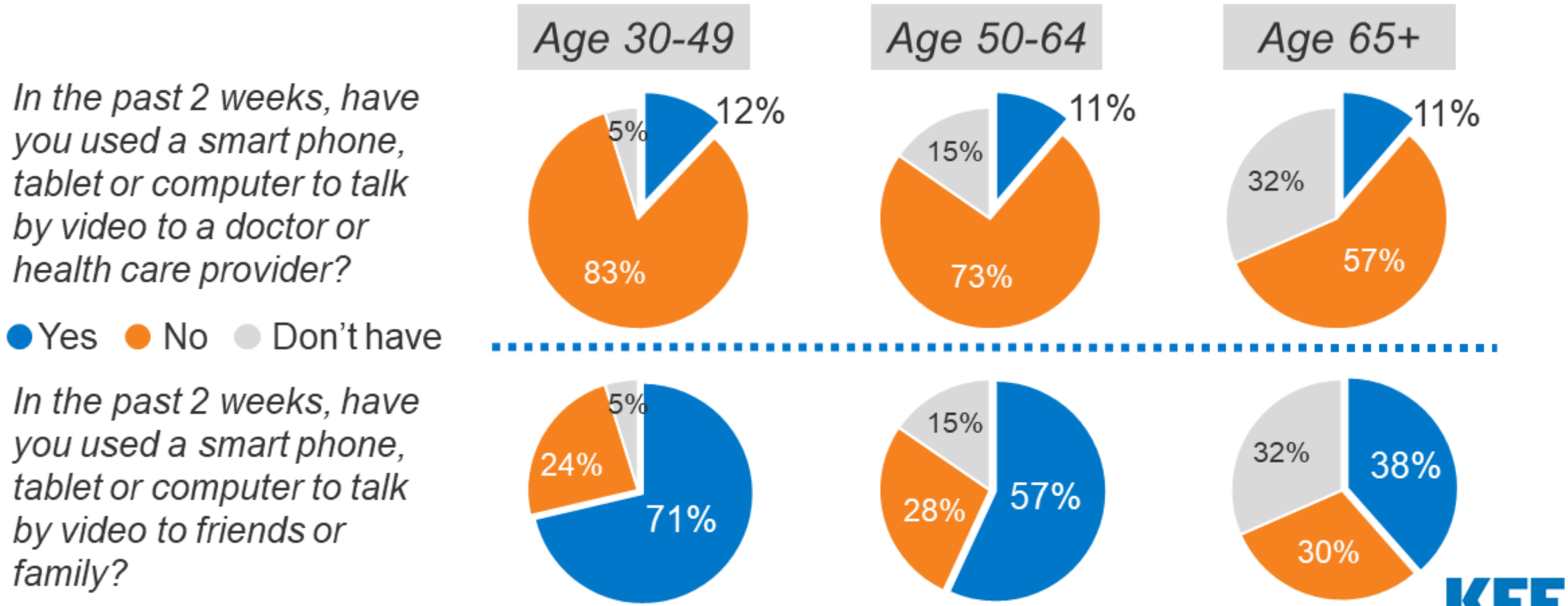
cdc.gov/coronavirus

	Hospitalization[1]	Death[2]
18-29 years	Comparison Group	Comparison Group
30-39 years	2x higher	4x higher
40-49 years	3x higher	10x higher
50-64 years	4x higher	30x higher
65-74 years	5x higher	90x higher
75-84 years	8x higher	220x higher
85+ years	13x higher	630x higher

CDC.gov

Figure 1

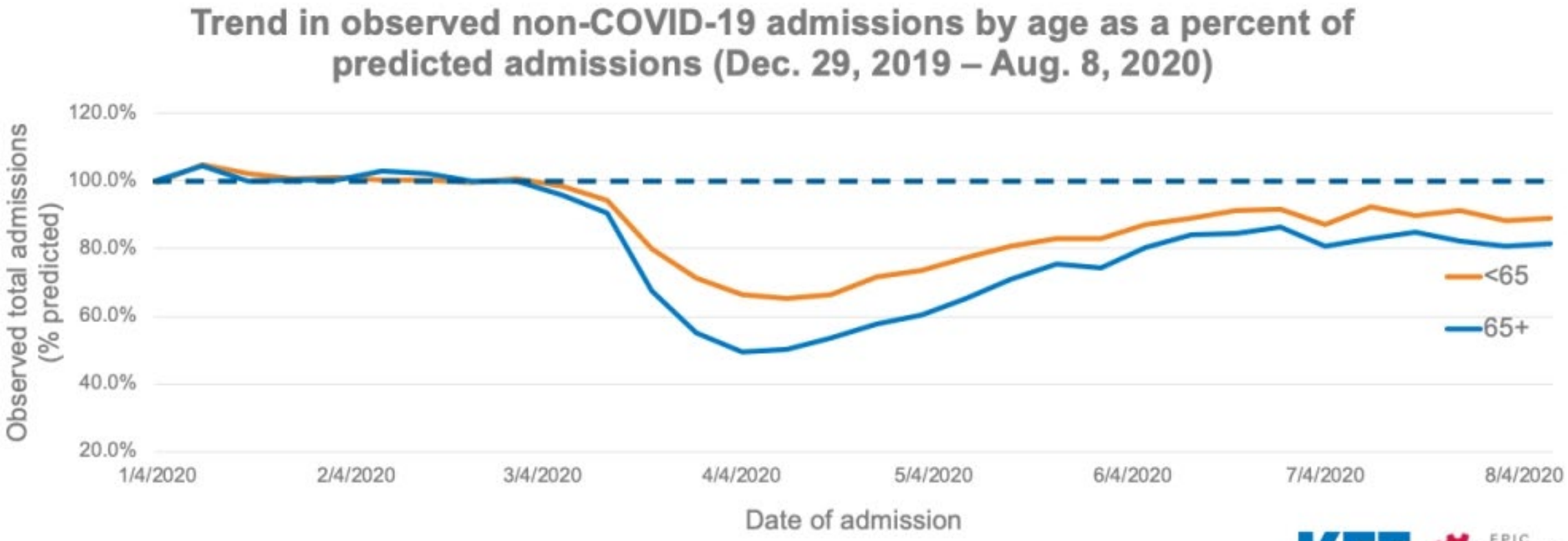
While Most Older Adults Have a Device with Internet Access at Home, Only a Small Share Have Used it To Talk by Video to a Health Care Provider in the Past Two Weeks



SOURCE: KFF Health Tracking Poll (conducted March 25-30, 2020).

Figure 3

People Age 65 and Older Had Larger Declines in Non-COVID-19 Hospital Admission than Those Who Are Younger



KFF HENRY J KAISER FAMILY FOUNDATION

EPIC HEALTH RESEARCH NETWORK

SOURCE: Epic and KFF analysis of Epic Health Record System COVID-19 related data as of September 2020.

npr
WYPR
88.1 YOUR NPR NEWS STATION

The Coronavirus Crisis

Nursing Home Critics Say COVID-19 Immunity Laws Are A Free Pass For Neglect

January 26, 2021 · 8:10 AM ET

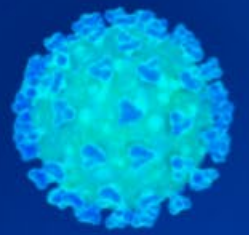
INA JAFFE

The New York Times

The Elderly vs. Essential Workers: Who Should Get the Coronavirus Vaccine First?

The C.D.C. will soon decide which group to recommend next, and the debate over the trade-offs is growing heated. Ultimately, states will determine whom to include.

COVID-19 Vaccine



BMJ
British Medical Journal

NEWS

Check for updates

London, UK

Cite this as: *BMJ* 2021;372:n149
http://dx.doi.org/10.1136/bmj.n149
Published: 15 January 2021

Covid-19: Norway investigates 23 deaths in frail elderly patients after vaccination

Ingrid Torjesen

Doctors in Norway have been told to conduct more thorough evaluations of very frail elderly patients in line to receive the Pfizer BioNTec vaccine against covid-19, following the deaths of 23 patients shortly after receiving the vaccine.

"It may be a coincidence, but we aren't sure," Steinar Madsen, medical director of the Norwegian Medicines Agency (NOMA), told *The BMJ*. "There is no certain connection between these deaths and the vaccine."

Considerations

- Varied Clinical manifestations
- Older adults are high risk for COVID-19
- Congregate settings are challenged
- Uncertainty about best practices
- Telemedicine Access
- Decline in Non-COVID-19 Care
- Getting the Vaccine

Thank you

Further questions:

thomaskmcudjoe@gmail.com

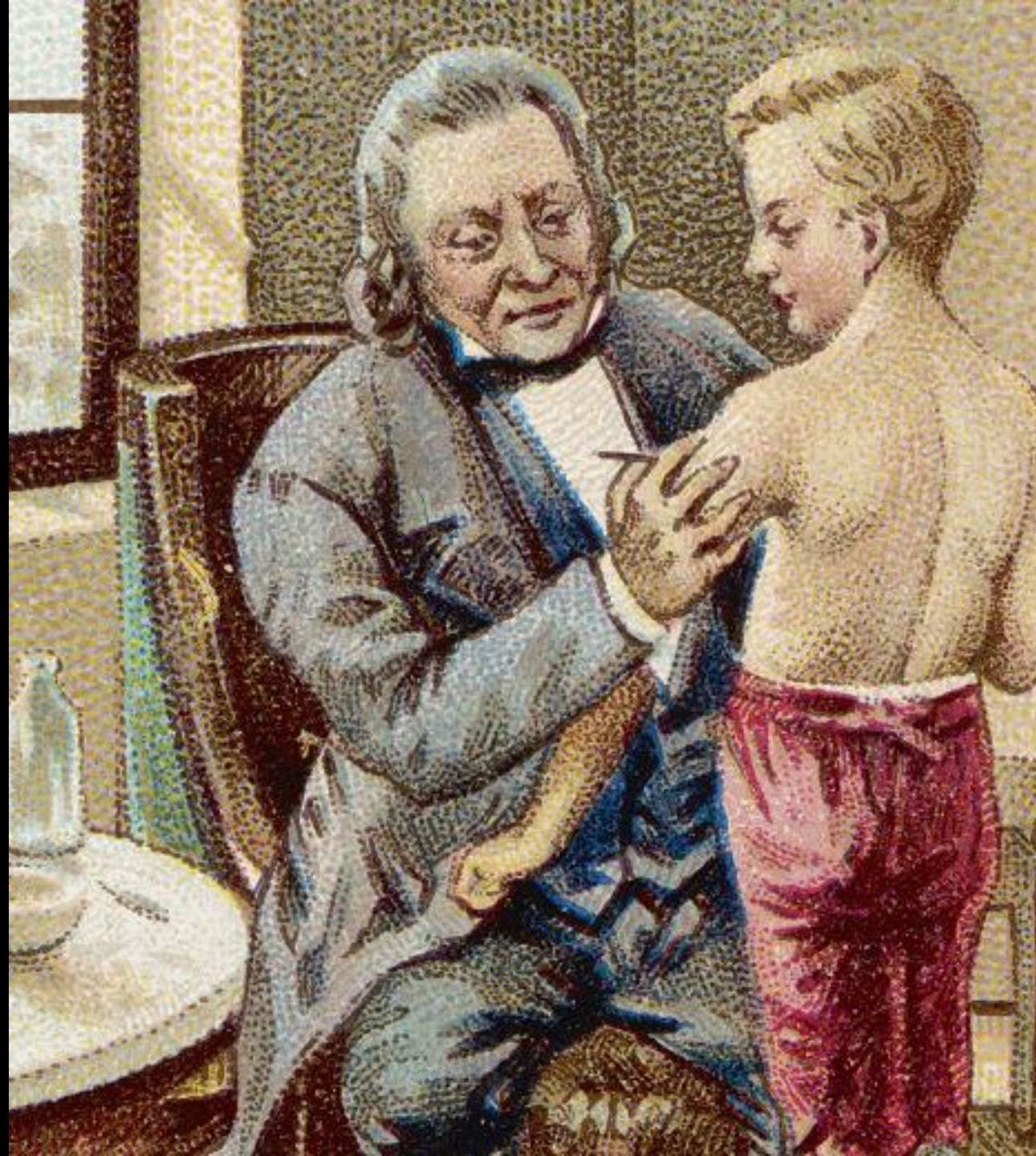
Overview:
On SARS Coronavirus-2 Vaccines

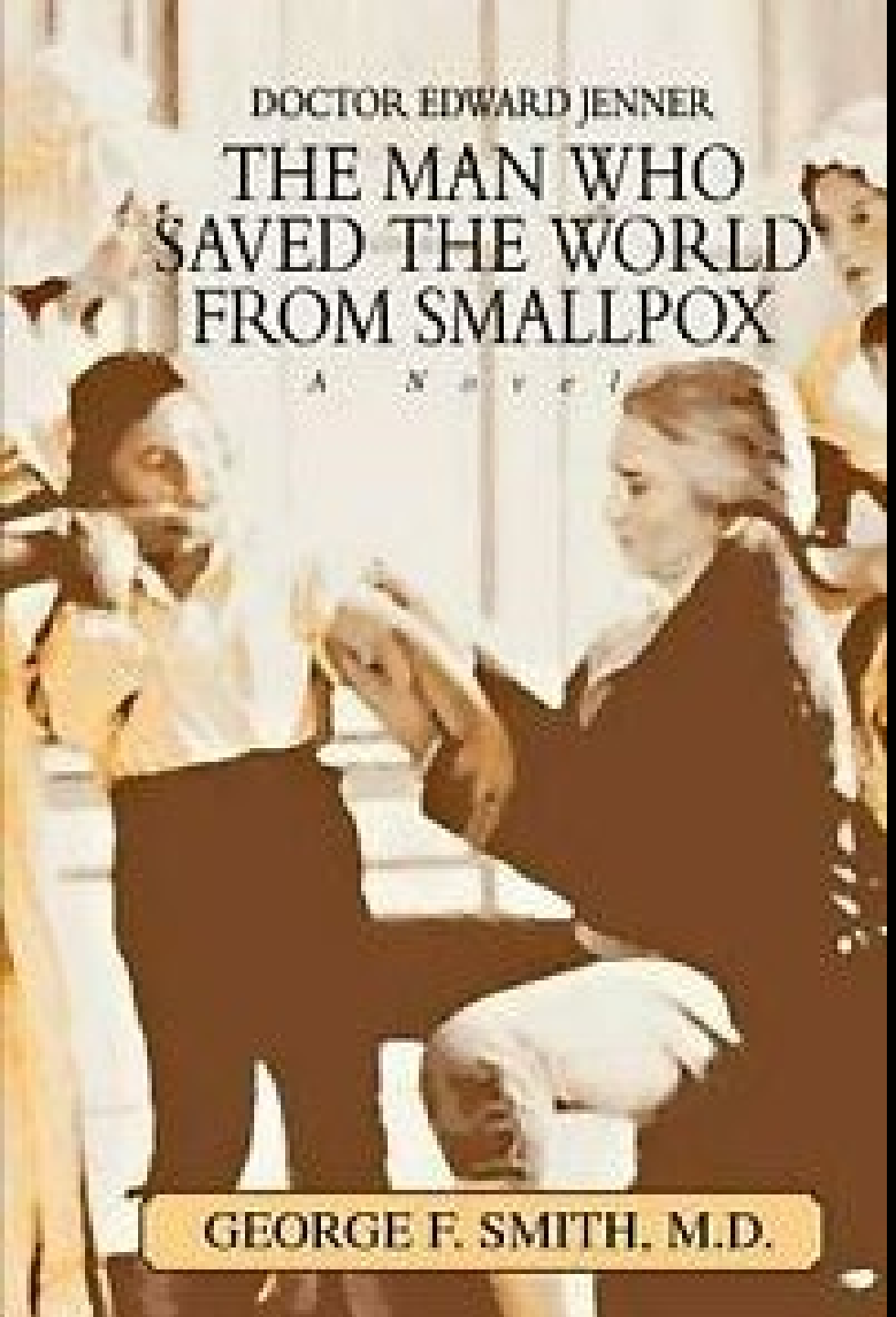
Dial Hewlett Jr MD FACP FIDSA

Medical Director-Division of Disease Control

Westchester County Department of Health, Adjunct Associate Professor of Microbiology & Immunology NY Medical College , Infectious Diseases Consultant Calvary Hospital, Bronx, NY

Vaccines
Where would we be without them?





Vaccines

- **Edward Jenner**, FRS FRCPE[1] (17 May 1749 – 26 January 1823) was an English physician and scientist who pioneered the concept of vaccines including creating the smallpox vaccine, the world's first vaccine
- The terms *vaccine* and *vaccination* are derived from *Variolae vaccinae* (smallpox of the cow), the term devised by Jenner to denote cowpox
- Jenner is often called "the father of immunology", and his work is said to have "saved more lives than the work of any other human
- In Jenner's time, smallpox killed around 10% of the population, with the number as high as 20% in towns and cities where infection spread more easily

Reidel S. et al 2005 Edward Jenner History of smallpox
Baxby D. Oxford Dictionary

Common Vaccine Preventable Diseases

- Polio
- Pertussis (Whooping cough)
- Measles / German Measles
- Mumps
- Chicken Pox
- Pneumococcal Disease
- Hemophilus Influenza b
- Influenza
- Hepatitis A & B
- Diphtheria & Tetanus

What Happens When We stop Vaccinating ?

- Apr 09, 2019 · More than 285 cases of the measles have been reported in New York since October. Nearly all are associated with people who live in the Williamsburg or Borough Park neighborhoods of Brooklyn.

- In California-2010: Over 9000 cases of Whooping cough and 10 infant death. Highest rate in over 60 years
- In Rockland County NY: Mumps: An executive order pulled close to 6,000 unvaccinated children out of schools. Nearly 17,000 doses of the measles-mumps-rubella (M.M.R.) vaccine were given in 26 week period

- CDC 2019 / California State Department of Health 2011
- NY Times 2019

How Do The COVID 19 Vaccines Prevent Infection?

- **Macrophages** are white blood cells that swallow up and digest germs and dead or dying cells. The macrophages leave behind parts of the invading germs called antigens. The body identifies antigens as dangerous and stimulates antibodies to attack them.
- **B-lymphocytes** are defensive white blood cells. They produce antibodies that attack the pieces of the virus left behind by the macrophages.
- **T-lymphocytes** are another type of defensive white blood cell. They attack cells in the body that have already been infected.

CDC –Jan 2021

How COVID-19 Vaccines Prevent Infection?

- COVID-19 vaccines help our bodies develop immunity to the virus that causes COVID-19 without us having to get the illness.
    - Different types of vaccines work in different ways to offer protection, but with all types of vaccines, the body is left with a supply of “memory” T-lymphocytes as well as B-lymphocytes that will remember how to fight that virus in the future.
- It takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination.
    - Therefore, it is possible that a person could be infected with the virus that causes COVID-19 just before or just after vaccination and then get sick because the vaccine did not have enough time to provide protection.
- Sometimes after vaccination, the process of building immunity can cause symptoms, such as fever. (Reactogenicity)
    - These symptoms are normal and are a sign that the body is building immunity.

- CDC-Jan 2021

Types of COVID Vaccines

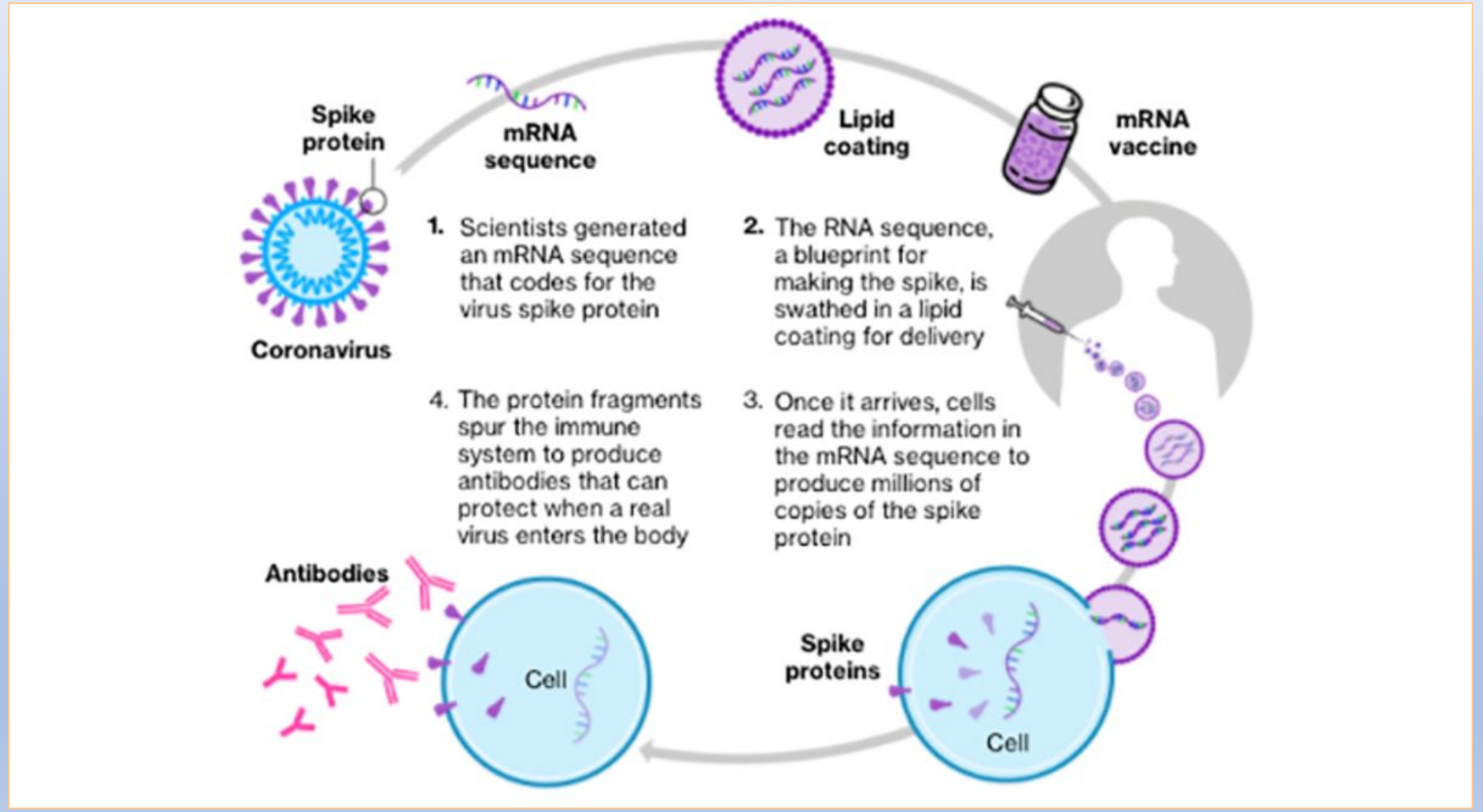
- Currently, there are three main types of COVID-19 vaccines that have completed or soon will be completing large-scale (Phase 3) clinical trials.
  - MRNA Vaccines
  - Viral Vector Vaccines
  - Protein subunit vaccines

MRNA Vaccines (Bio-N-Tech) Moderna

- MRNA Vaccines:
  - These vaccines contain material from the virus that causes COVID-19 that gives our cells instructions for how to make a harmless protein that is unique to the virus.
  - After our cells make copies of the protein, they destroy the genetic material from the vaccine.
  - Our bodies recognize that the protein should not be there and build T-lymphocytes and B-lymphocytes that will remember how to fight the virus that causes COVID-19 if we are infected in the future.

- REF CDC Jan 2021

How mRNA vaccine works



James, P. (2020, Nov 16). *Moderna, Pfizer Shots Look Strong. Here's How They Stack Up*. Bloomberg. https://www.bloomberg.com/news/articles/2020-11-16/moderna-pfizer-vaccines-look-strong-here-s-how-they-stack-up

- Vaccine efficacy did not differ by among subgroups of age, sex, race, ethnicity, obesity or co-existing condition

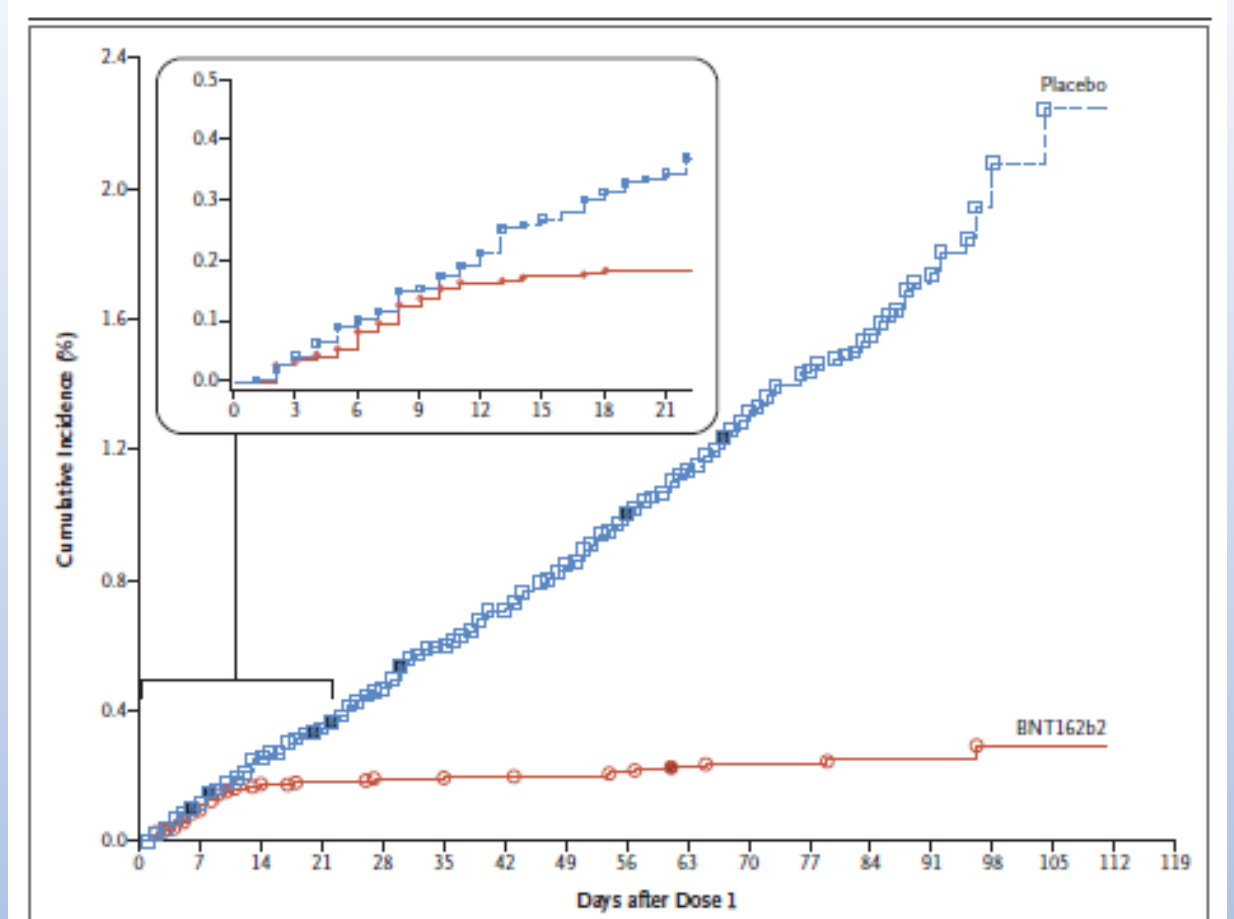
- Incidence of COVID-19 diverged at 12 days after dose 1.

- Severe COVID-19 (dark circles)
  9 placebo group, 1 in vaccine

- Cases of COVID-19 after Dose 1
  82 in placebo group
  39 in vaccine group
  Efficacy 52%

- Efficacy after dose 2: 95%

- Secondary endpoint: Infection in those with / without prior SARs-CoV-2: Additional approx. 1700 in each group: similar efficacy



Efficacy End-Point Subgroup	BNT162b2, 30 μg (N=21,669) No. of participants	BNT162b2, 30 μg (N=21,669) Surveillance time person-yr (no. at risk)	Placebo (N=21,686) No. of participants	Placebo (N=21,686) Surveillance time person-yr (no. at risk)	VE (95% CI) percent
Covid-19 occurrence					
After dose 1	50	4.015 (21,314)	275	3.982 (21,258)	82.0 (75.6–86.9)
After dose 1 to before dose 2	39		82		52.4 (29.5–68.4)
Dose 2 to 7 days after dose 2	2		21		90.5 (61.0–98.9)
≥7 Days after dose 2	9		172		94.8 (89.8–97.6)

Figure 3. Efficacy of BNT162b2 against Covid-19 after the First Dose.

SAFETY - Reactions within 7 Days

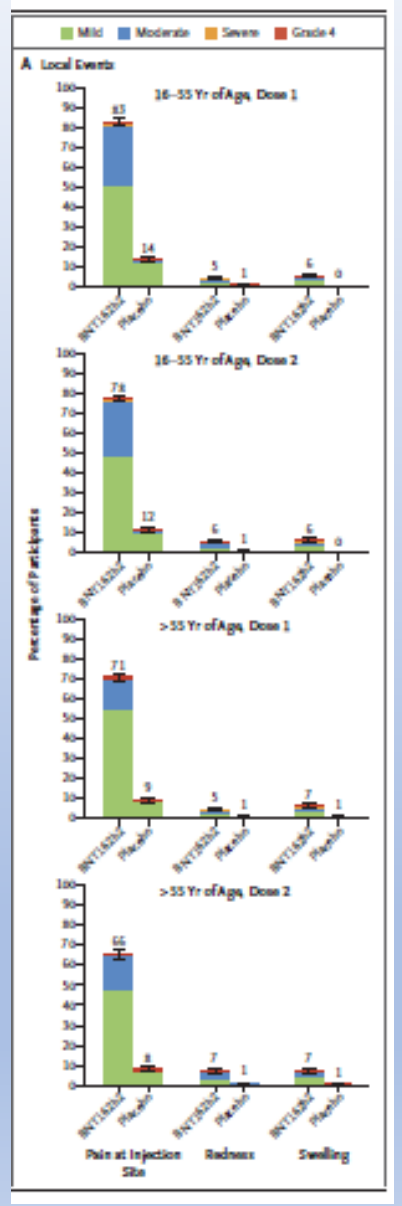
Reactions within 7 Days

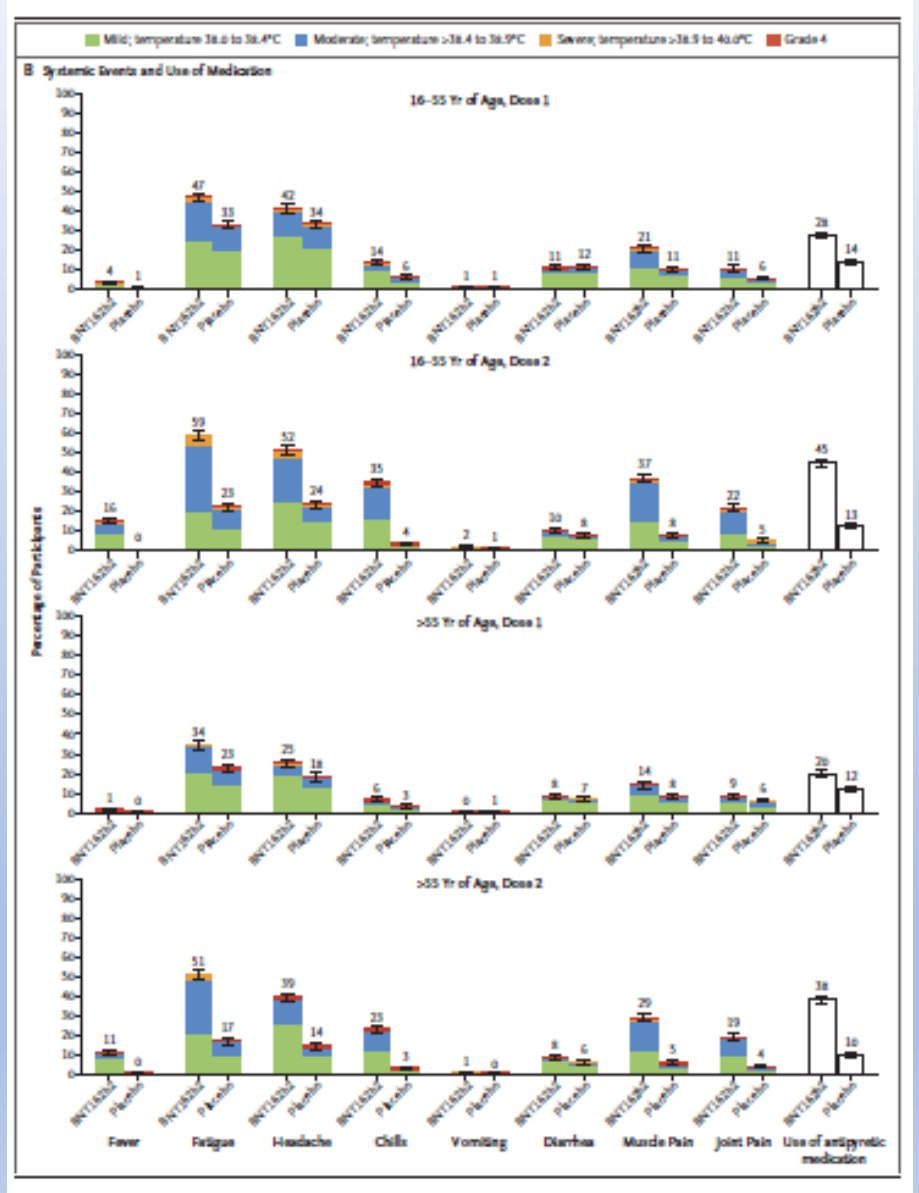
n=8183 patients
% with reaction after Dose 2

Age	16- 55	> 55
Injection Site Pain	78	66
Systemic		
Fatigue	59	51
Headache	52	39
Fever	16	11
Lymphadenopathy	0.3	

(Systemic rx: more often after dose 2)

Appendicitis (n=8) and Bells Palsy (n=4) similar to background rates





COVID Viral Vector Vaccines (Astra Zeneca/Oxford, Jansen/Johnson & Johnson)

- Viral Vector COVID Vaccines contain a weakened version of a live virus—a different virus than the one that causes COVID-19—that has genetic material from the virus that causes COVID-19 inserted within (this is called a viral vector).
- Once the viral vector is inside our cells, the genetic material gives cells instructions to make a protein that is unique to the virus that causes COVID-19.
- Using these instructions, our cells make copies of the protein.
- This prompts our bodies to build T-lymphocytes and B-lymphocytes that will remember how to fight that virus if we are infected in the future.

CDC-Jan 2021

Johnson & Johnson (Jansen Vaccine Division) Phase III Clinical Trial Results

- Planned enrollment –up to 60,000-Global
- Adenovirus vector
- 85% efficacy vs Severe Disease
- 72% Efficacy vs Moderate and Severe Disease
- 66% Efficacy overall
- Potential advantages
  - Inexpensive
  - Single dose
  - No Cold Chain Requirement
  - No Anaphylaxis case reported during clinical trials

- Ref: CNN –Jan 29, 2021

COVID Protein Subunit Vaccines

- Protein Subunit COVID Vaccines include harmless pieces (proteins) of the virus that cause COVID-19 instead of the entire germ.
- Once vaccinated, our immune system recognizes that the proteins don't belong in the body and begins making T-lymphocytes and antibodies.
- If we are ever infected in the future, memory cells will recognize and fight the virus.

CDC Jan 2021-

TRACKING COVID 19 Vaccine-Jan 27, 2021

- > 82.5 Million doses administered
  - 59 countries globally
  - Average 3.95 million doses / day
- U.S Total-25 Million doses
  - Average 1.21 Million doses / day
- Across U.S 7.8 doses/ 100 persons
  - 54% of doses delivered to States have been administered

Virus Variants

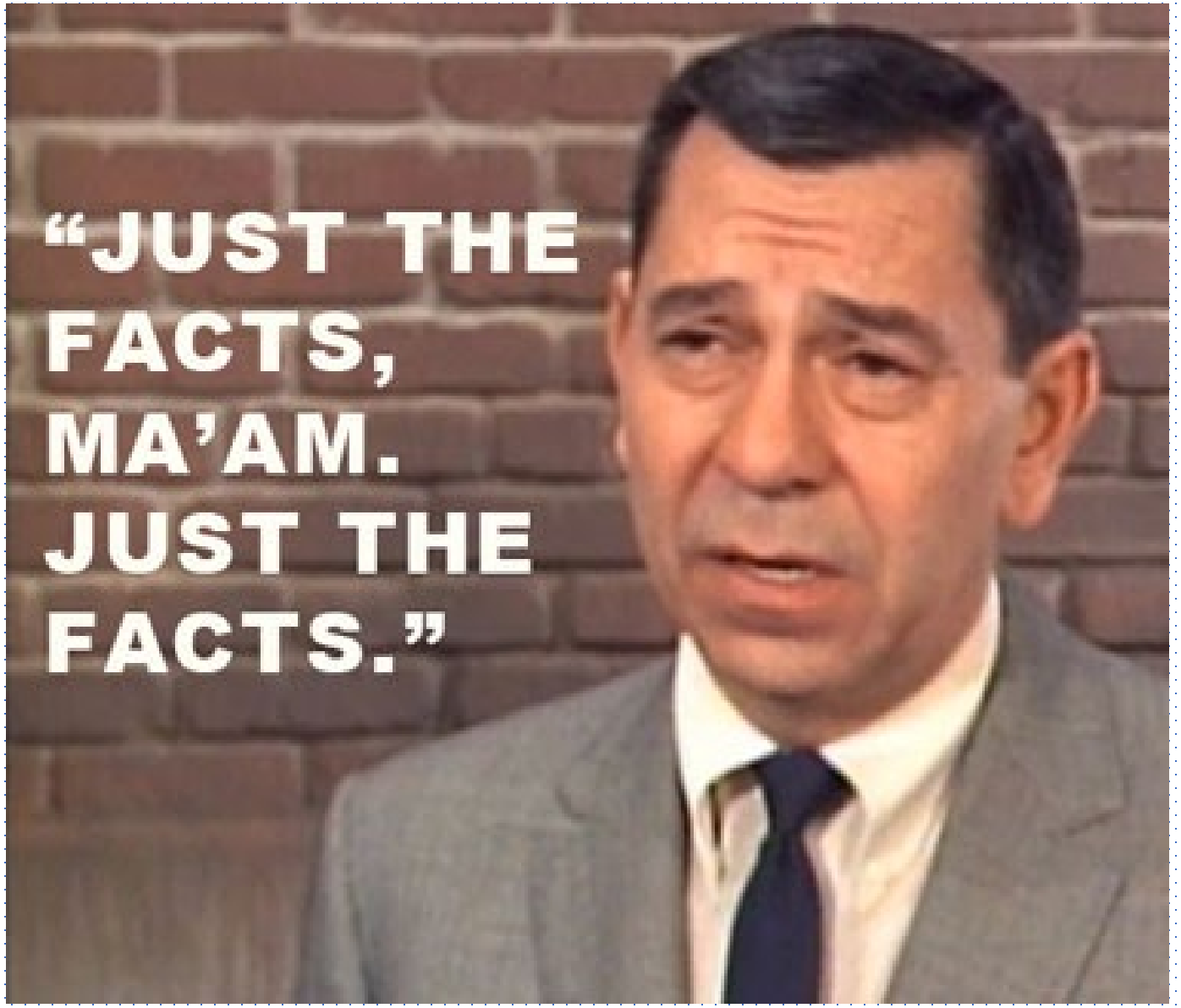
- South African Variant:
  - Two cases in adults diagnosed in South Carolina
  - Identified in 30 countries
- Some European Countries do extensive testing to detect variants
- U.K Variant
  - At least 315 cases in U.S. from 28 States
- Brazil Variant:
  - Case identified in traveler returning to Minnesota from South America
- South African and Brazil Variants may be less susceptible to antibody
  - Case identified in traveler returning to Minnesota from South America



Open Q & A


Appendix

COVID 19 Vaccines Dispelling the Myths Only the Facts !



Myth 1:
We can't trust COVID-19 vaccines because they were rushed.

- False
- Work on SARS-Coronavirus Vaccines began in 2003 with SARS-1
- Later Continued in 2012 (MERS)
- Full genomic sequence of the virus known in Jan 2020
- Phase III trials enrolled 30,000-40,000 persons world wide
- Full FDA review
- Full Review by the Advisory Committee on Immunization Proactices
- Full reviews by Task Force groups
    - NY State / California/ National Medical Association

Myth 2: The vaccine will give me COVID-19.

- False
- The Vaccines do not contain the live coronavirus
- There is no risk of causing disease in a vaccinated person
- The MRNA vaccines contain a harmless piece of “Spike Protein”
- Spike Protein is found on the surface of the Coronavirus

Myth 3: We don’t know what’s in these vaccines.

- False
- The contents of the vaccine are clearly stated
- This standard labelling is required by the FDA and other regulatory agencies

Myth 4: These vaccines will alter my DNA.

- The Messenger RNA in the COVID Vaccines is rapidly cleared
- Messenger RNA is not the same as DNA
- The mRNA from the vaccine cannot combine with the DNA in our body or change our genetic codes

Myth 5: I already had COVID-19, so I won't benefit from the vaccine.

- False:
- The COVID Vaccines are recommended for persons who have previously recovered from COVID
- It is recommended that ideally individuals who have COVID should wait for 90 days after recovery before taking the vaccines
- The measured Immune responses following vaccine are up to 4 times the response seen following natural infection

Myth 6: Since COVID-19's survival rate is so high, I don't need a vaccine.

- False
- Although the survival rate from COVID is 98%, between 10% - 40% of impacted persons develop long term symptomatology (Long Haulers")
- Long term complications can be debilitating
- Complications such as coagulation disorders place recovering persons at risk for myocardial infarction (heart attack) Cerebrovascular Accident (Stroke) and neurologic disorders including loss of taste / smell and chronic fatigue
- Recently erectile dysfunction has been reported

Myth 7:COVID VACCINES CAUSE STERILITY

- **False**
- This myth was perpetuated on the internet
- It was claimed that the vaccine spike protein cross reacts with another protein (Syncytin 1) that is important to placental formation
- The COVID Vaccines do not contain syncytin 1 protein or MRNA encoding syncytin 1
- These vaccine spike protein and syncytin 1 are very different from each other
- There is absolutely no evidence that the vaccine response creates cross reacting antibodies to syncytin 1

Myth 8: Now that we have vaccines, the pandemic will be over very soon and once vaccinated we no longer require Masks

- False
- To date we have data supporting the fact that the vaccines prevent serious disease and hospitalization
- We do not have information to definitively show that the vaccines prevent asymptomatic infection
- We must continue to wear masks / face coverings, social distance and avoid gatherings until we reach herd immunity
    - Herd immunity may require up to 80% or higher



Open Q & A