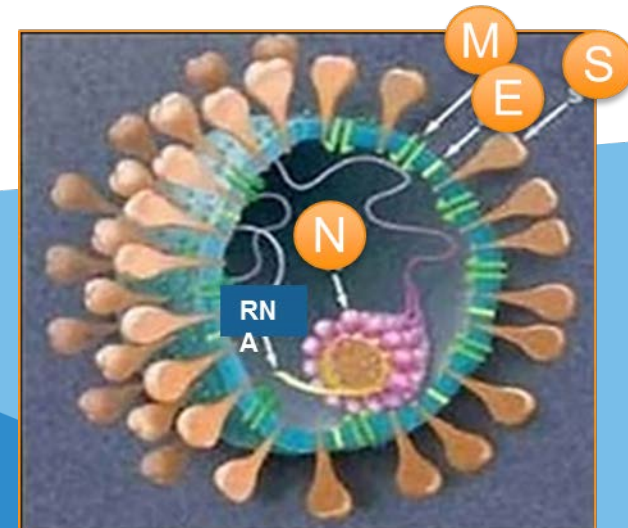# 2019 Novel Coronavirus (COVID-19)

Joseph S. Cervia, MD, MBA, FACP, FAAP, FIDSA, AAHIVS

Clinical Professor of Medicine and Pediatrics,

Donald and Barbara Zucker School of Medicine at Hofstra/Northwell
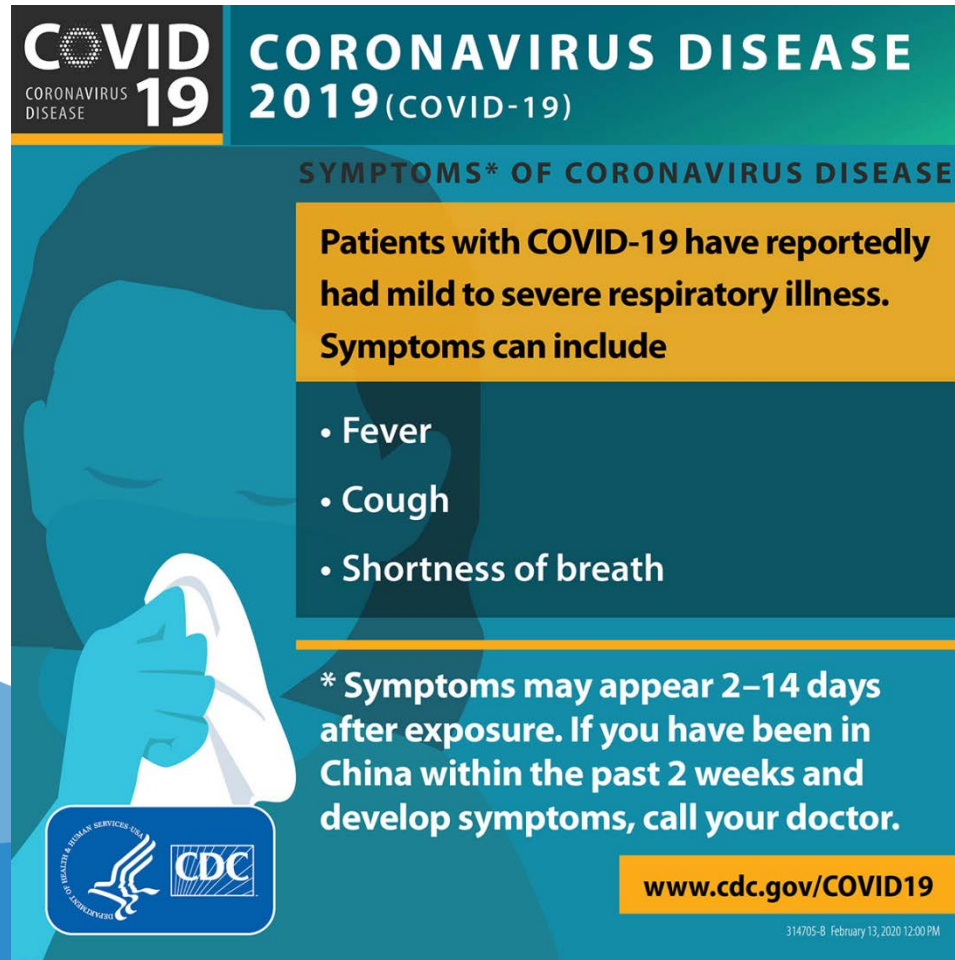
Senior Medical Director,

HealthCare Partners, IPA & MSO

What is a Coronavirus?

- A family of viruses that frequently cause upper respiratory infection ("common colds")

- Severe Acute Respiratory Syndrome (SARS, 2002): Caused a self limited outbreak that was associated with a 10% mortality

- Middle East Respiratory Syndrome (MERS, 2012): A respiratory illness with 20% mortality, mostly limited to contact with camels

- **COVID-19: Identified in China in late December 2019 (likely passed from a bat/pangolin or other animal to human)**
  - **Much is unknown about COVID-19**
  - **Spread from person-to-person, and causes a range of illness from mild to severe disease and death**
  - **Respiratory droplets by coughing or sneezing**
  - **Close personal contact, such as touching or shaking hands**

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COVID-19 Symptoms

Respiratory Infections Present with Common Symptoms

- Influenza
- Respiratory Syncytial Virus (RSV)
- Coronavirus
- Adenovirus
- Rhinovirus
- Parainfluenza

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2019 Novel Coronavirus (2019-nCoV)

Wuhan is located in central China
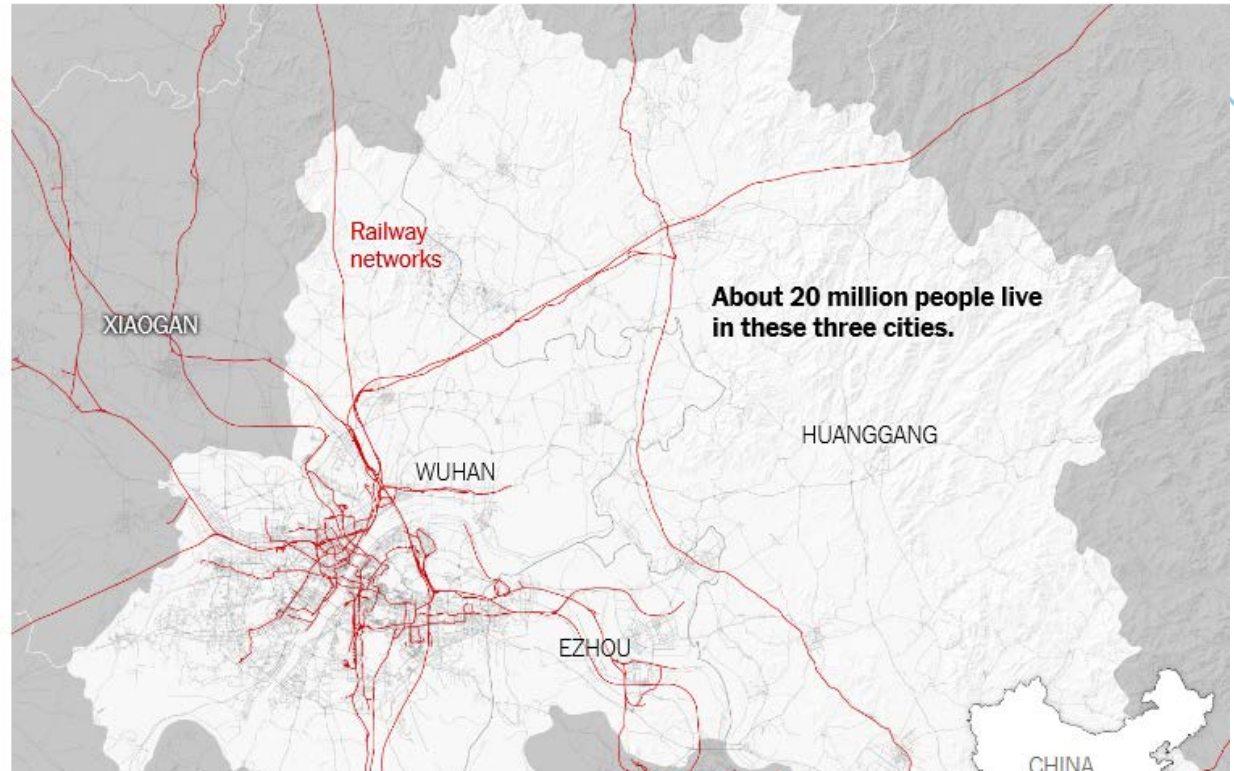
- Population 10 Million

- Major transportation hub, with dozens of railways, roads and expressways passing through the city and connecting to other major cities

Characteristics of Recently Emerged Viruses

			Pathogenicity and Transmissibility Characteristics of Recently Emerged Viruses in Relation to Outbreak Containment.	
Virus	**Case Fatality Rate (%)**	**Pandemic**	**Contained**	**Remarks**
2019-nCoV	Unknown*	Unknown	No, efforts ongoing	
pH1N1	0.02–0.4	Yes	No, postpandemic circulation and establishment in human population	
H7N9	39	No	No, eradication efforts in poultry reservoir ongoing	
NL63	Unknown	Unknown	No, endemic in human population	
SARS-CoV	9.5	Yes	Yes, eradicated from intermediate animal reservoir	58% of cases result from nosocomial transmission
MERS-CoV	34.4	No	No, continuous circulation in animal reservoir and zoonotic spillover	70% of cases result from nosocomial transmission
Ebola virus (West Africa)	63	No	Yes	

* Number will most likely continue to change until all infected persons recover.

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The NEW ENGLAND JOURNAL of MEDICINE

COVID-19 as of 4/26/2020

Confirmed cases

Sources: The Center for Systems Science and Engineering at Johns Hopkins University; National Health Commission of the People's Republic of China; local governments. Japan's count includes 621 cases on a cruise ship quarantined in Yokohama. Data as of 4:50 a.m. E.T., Feb. 20.

Globally:
2,804,796 Cases
193,710 Deaths
China:
84,338 Cases

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https://www.nytimes.com/interactive/2020/world/asia/china-wuhan-coronavirus-maps.html

United States Epidemiology

Total Cases: 928,619 (New York: 277,606)
Total Deaths: 52,459

Influenza: Total Cases: 55,000,000
                  Hospitalizations: 730,000
                  Deaths: 63,000

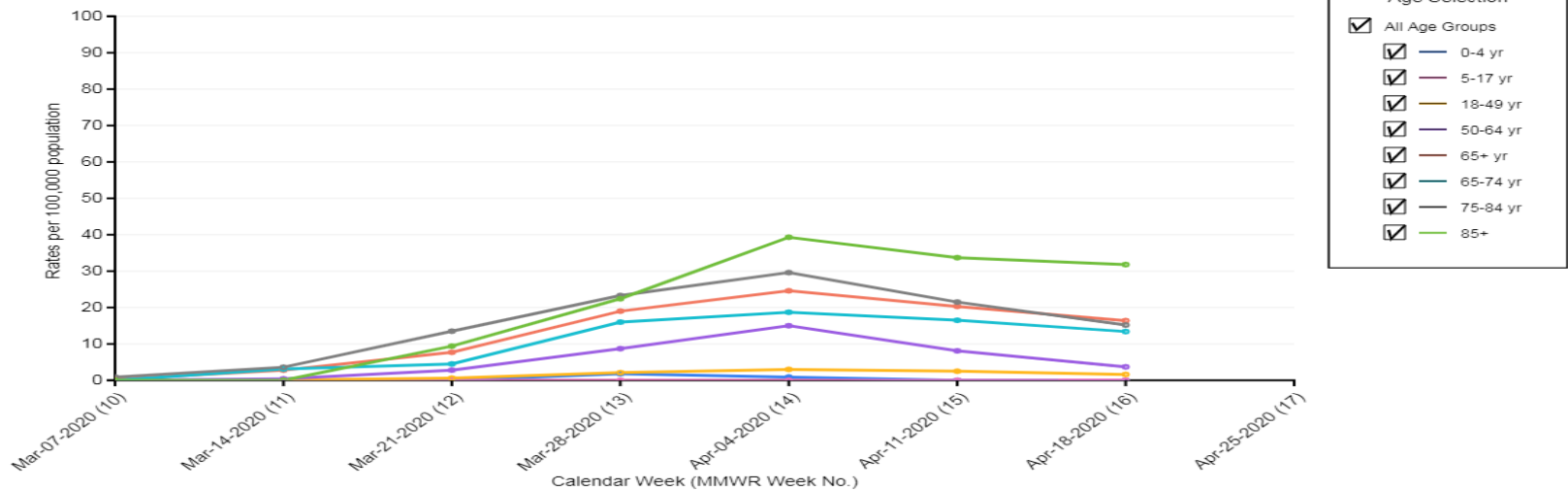# COVID-19 Hospitalizations in New York State

COVID-NET | A Weekly Summary of U.S. COVID-19 Hospitalization Data

Laboratory-Confirmed COVID-19-Associated Hospitalizations

Preliminary weekly rates as of Apr 18, 2020

EIP :: New York :: 2020 :: Weekly Rate

Age Selection
- ☑ All Age Groups
- ☑ 0-4 yr
- ☑ 5-17 yr
- ☑ 18-49 yr
- ☑ 50-64 yr
- ☑ 65+ yr
- ☑ 65-74 yr
- ☑ 75-84 yr
- ☑ 85+

The Coronavirus Disease 2019 (COVID-19)-Associated Hospitalization Surveillance Network (COVID-NET) conducts population-based surveillance for laboratory-confirmed COVID-19-associated hospitalizations in children (persons younger than 18 years) and adults. The current network covers nearly 100 counties in the 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and four additional states through the Influenza Hospitalization Surveillance Project (IA, MI, OH, and UT). The network represents approximately 10% of US population (~32 million people). Cases are identified by reviewing hospital, laboratory, and admission databases and infection control logs for patients hospitalized with a documented positive SARS-CoV-2 test. Data gathered are used to estimate age-specific hospitalization rates on a weekly basis and describe characteristics of persons hospitalized with COVID-19. Laboratory confirmation is dependent on clinician-ordered SARS-CoV-2 testing. Therefore, the unadjusted rates provided are likely to be underestimated as COVID-19-associated hospitalizations can be missed due to test availability and provider or facility testing practices. COVID-NET hospitalization data are preliminary and subject to change as more data become available. All incidence rates are unadjusted. Please use the following citation when referencing these data: "COVID-NET: COVID-19-Associated Hospitalization Surveillance Network, Centers for Disease Control and Prevention. WEBSITE. Accessed on DATE".

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Surveillance Pyramid
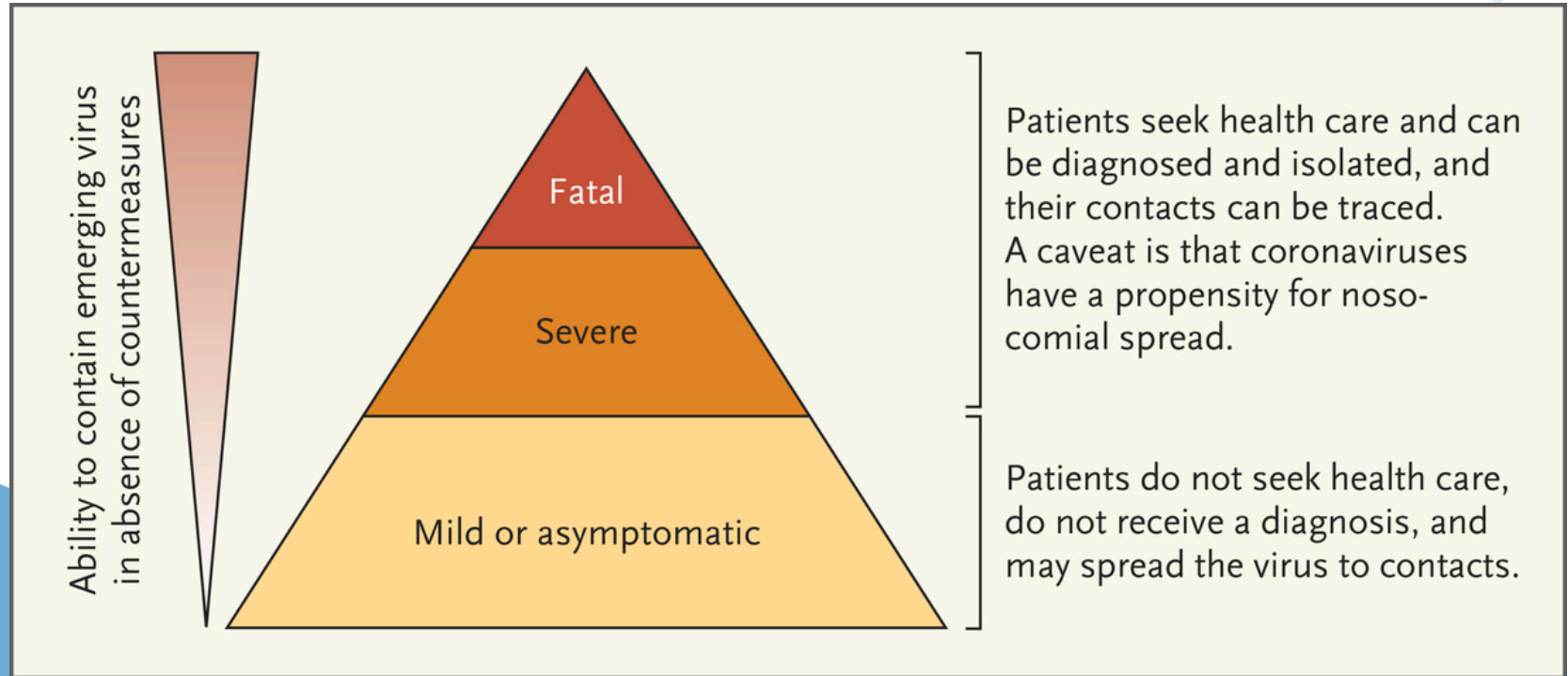
Clinical Trials
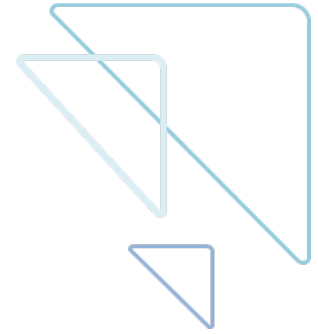
- Hydroxychloroquine +/- azithromycin

- Remdesivir

- Sarilumab

- Famotidine

- SOLIDARITY--collaborative study; simplified enrollment and follow-up; dozens of countries; WHO website will randomize patients to local standard care or one of four drug regimens, utilizing only ones available in the patient's hospital.

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Recommended Strategies for employers to use now:

Actively encourage sick employees to stay home:

- Employees who have symptoms of acute respiratory illness are recommended to stay home and not come to work until they are free of fever (100.4° F [37.8° C] or greater using an oral thermometer), signs of a fever, and any other symptoms for at least 24 hours, without the use of fever-reducing or other symptom-altering medicines (e.g. cough suppressants). Employees should notify their supervisor and stay home if they are sick.

- Do not require a healthcare provider's note for employees who are sick with acute respiratory illness to validate their illness or to return to work, as healthcare provider offices and medical facilities may be extremely busy and not able to provide such documentation in a timely way.

- Employers should maintain flexible policies that permit employees to stay home to care for a sick family member. Employers should be aware that more employees may need to stay at home to care for sick children or other sick family members than is usual.

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Recommended Strategies for employers to use now:

Emphasize staying home when sick, respiratory etiquette and hand hygiene by all employees:

- Place posters that encourage staying home when sick, cough and sneeze etiquette, and hand hygiene at the entrance to your workplace and in other workplace areas where they are likely to be seen.
- Provide tissues and no-touch disposal receptacles for use by employees.
- Instruct employees to clean their hands often with an alcohol-based hand sanitizer that contains at least 60-95% alcohol, or wash their hands with soap and water for at least 20 seconds. Soap and water should be used preferentially if hands are visibly dirty.
- Provide soap and water and alcohol-based hand rubs in the workplace. Ensure that adequate supplies are maintained. Place hand rubs in multiple locations or in conference rooms to encourage hand hygiene.

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Recommended Strategies for employers to use now:

Perform routine environmental cleaning:

- Routinely clean all frequently touched surfaces in the workplace, such as workstations, countertops, and doorknobs. Use the cleaning agents that are usually used in these areas and follow the directions on the label.
- No additional disinfection beyond routine cleaning is recommended at this time.
- Provide disposable wipes so that commonly used surfaces (for example, doorknobs, keyboards, remote controls, desks) can be wiped down by employees before each use.

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Priorities In the Healthcare Environment:

- Early identification of individuals with signs of COVID-19 and travel to areas with widespread infection;
- Control the source of infection by having the individual wear a surgical mask and perform hand hygiene, and placing the patient in a private room with the door closed;
- Wearing appropriate personal protective equipment (PPE), i.e. respiratory protection with face shield, N-95 mask, gown & gloves when entering the room of a patient with suspect or confirmed COVID-19;
- Performing hand hygiene when removing PPE and routinely practicing hand hygiene;
- Routinely cleaning of equipment should follow patient use and used on another patient;
- Routinely adhering environmental cleaning and disinfection each day and when the patient is discharged;
- Avoid touching your eyes, nose & mouth.

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Further Information and Updates from CDC

COVID-19 Homepage:

https://www.cdc.gov/coronavirus/2019-ncov/index.html

Businesses:

https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/guidance-business-response.html

Healthcare Professionals:

https://www.cdc.gov/coronavirus/2019-nCoV/hcp/index.html

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