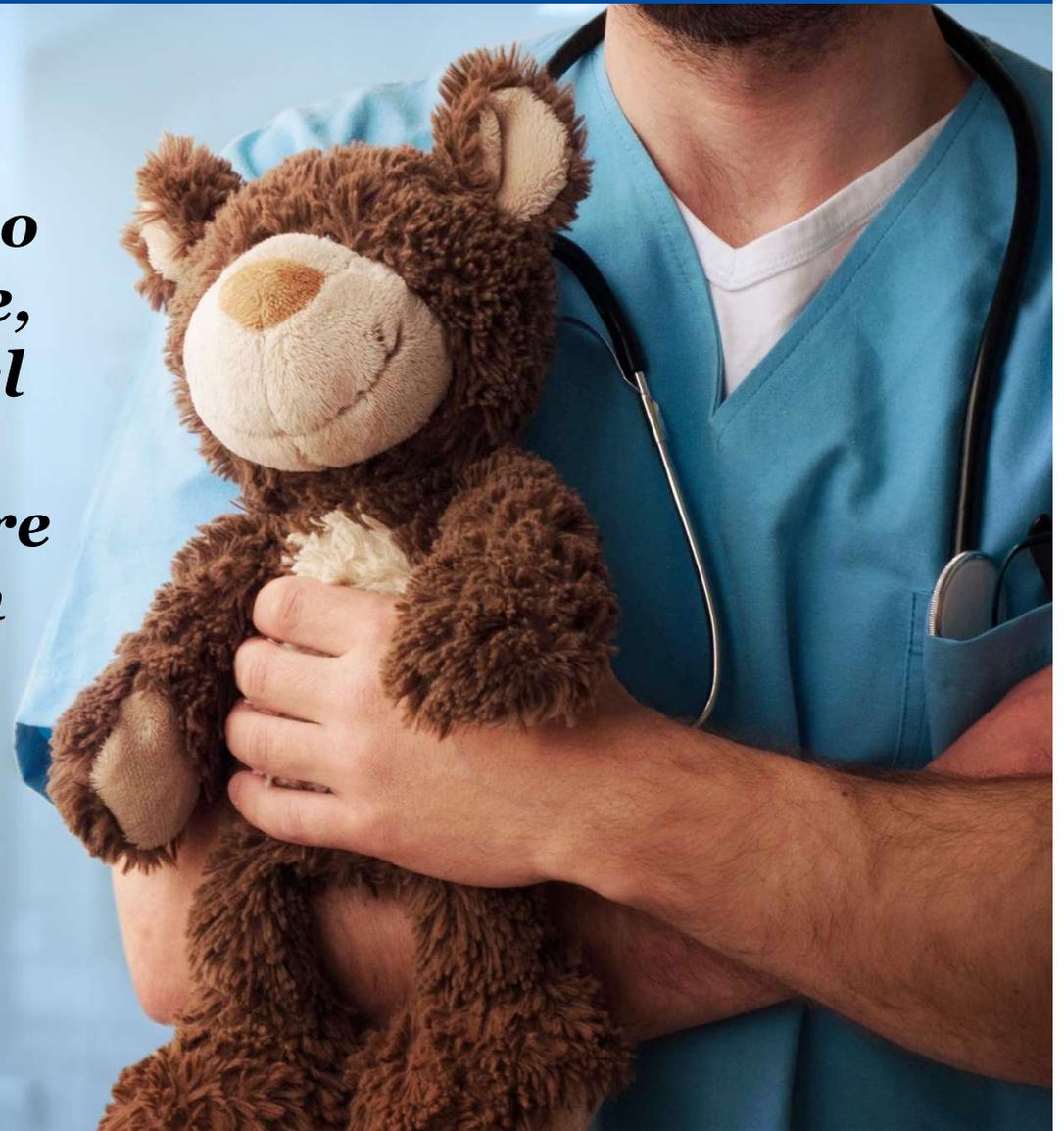


# CT EMSC Advisory Committee 3-18-20

***Every ill and injured child in Connecticut, no matter where they live, attend school or travel receives appropriate emergency medical care across the continuum***



# Agenda

## **Welcome**

Introductions & Patient Stories

## **Updates**

- CT-EMSC Medical Directors
  - Welcome Dr. Michael Goldman
- NPRQC Initiative
- EMS PECC Collaborative
- Pre-hospital Projects
- ED-Related Projects
- Sim Box

**Guest Speaker – COVID-19**

**Mark Cicero, MD**

# Welcome & Patient Stories



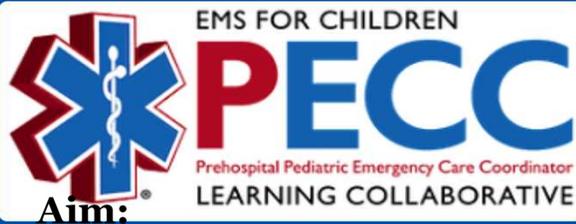


Site	Successes	Challenges	Lessons Learned
<b>Greenwich Hospital</b>	<ul style="list-style-type: none"> <li>Nearly always PEM-staffed, who are sticklers for vital signs – great documentation!</li> <li>Great teamwork and communication between PEM team and RNs.</li> <li>Interventions – VS cards, EPIC utilization, Staff meetings / education</li> </ul>	<ul style="list-style-type: none"> <li>Set an ambitious AIM acknowledging up front that there would be limitations to the metric for what happens in real life.</li> <li>Measurement strategy and frequency may not be sensitive enough to demonstrate our progress.</li> <li>Staff turnover</li> </ul>	<ul style="list-style-type: none"> <li>Maybe our site not best suited for involvement in the project, though we acknowledge everyone can improve!</li> <li>Did not do a great job defining our denominator</li> </ul>
<b>Hospital of Central Connecticut</b>	<ul style="list-style-type: none"> <li>Baseline Data: 43% total compliance</li> <li>Post-intervention Data: 93% compliance</li> <li>Interventions: Equipment availability, staff education, compliance auditing &amp; follow up</li> <li>Professional recognition – Evelina was promoted!</li> <li>Success story will be featured in a podcast as part of the upcoming New England Regional EMS Forum - March 9<sup>th</sup> in Waltham, Massachusetts.</li> <li>Patient handoff improved</li> <li>Development of regional relationships</li> </ul>	BP needed/accurate?	<p>Lots of calls</p> <p>Cumbersome data entry process</p>
<b>St. Mary's Hospital</b>	<ul style="list-style-type: none"> <li>Full set of vitals at triage, including BP</li> <li>All scales, including trauma stretcher, are locked in kg</li> <li>Streamlined the triage process at the main triage               <ul style="list-style-type: none"> <li>If busy, they were putting children right into the “pediatric waiting area” without triage or vitals.</li> <li>This has been changed to a system where children are skipping triage only if they can be directly roomed.</li> <li>If they will have to wait in the pediatric waiting area, they will be triaged with a full set of vitals first.</li> </ul> </li> </ul>	<p>Despite education, a resistance of entering weights in kg in main triage</p> <ul style="list-style-type: none"> <li>Staff is used to entering in lbs., as they do with adult population</li> <li>Argument that weight is automatically converted to kg in EPIC</li> <li>Staff revert to old practices once they were not being directly observed</li> </ul> <p>Staff turnover</p>	For a career development standpoint, being able to speak about the work and effort put into improving the quality of patient care. Dr. Hellstrand is grateful for having had this opportunity.
<b>St. Raphael's Campus</b>	<ul style="list-style-type: none"> <li>The team has been compiling disaster resources and sharing across the Health System</li> <li>Worked to ensure that all children under the age of six into pediatric gowns and weights in kilograms.</li> <li>Working on telemedicine follow-up to help reduce 72-hr bounce backs, this includes pediatric patients</li> </ul>	<ul style="list-style-type: none"> <li>Upper Leadership - Team had chosen Disaster bundle. After having started, the team was informed that there was already a policy in place for disasters and to follow that.</li> <li>Had to readjust focus - improving other pediatric-specific triage items.</li> </ul>	Pioneers in their field – had chosen Disaster bundle because they had already conducted QI initiatives involving the other bundles before NPRQC initiative.



Site	Successes	Challenges	Lessons Learned
Stamford Hospital	<ul style="list-style-type: none"> <li>Coalition building with regional EMS crews, expanding RN capabilities, role of security</li> <li>Roles / responsibilities of a pediatric disaster coordinator have been approved</li> <li>Held Disaster lecture and drill</li> </ul>		
Springfield Hospital	<ul style="list-style-type: none"> <li>Identified areas of improvement</li> <li>Drafted new policies on EMR Optimization, Interfacility Transfers, Red Flag VS, Glasgow Coma Scale, and Notification Procedures</li> <li>Implemented Direct Bedding</li> </ul>	<ul style="list-style-type: none"> <li>More than 40 positions eliminated due to budget cuts</li> <li>Leadership/Staff turnover</li> <li>Filed for bankruptcy</li> </ul>	
UCONN Health	<ul style="list-style-type: none"> <li>Direct feedback for pediatric transfers to Connecticut Children's Medical Center</li> <li>On point with assessments with regards to the need for transfer, consultation and/or admission.</li> <li>Common transfer indications discovered - orthopedic injuries, abdominal pain/diseases, &amp; respiratory illnesses</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty with DUA approval</li> <li>Sharing information outside of our own health system (HIPPA) – i.e. CCMC</li> </ul>	<ul style="list-style-type: none"> <li>Interfacility transfer documentation can become a reality, requires time.</li> </ul>
Yale New Haven Westerly Hospital	<p>Baseline Data –30 randomized charts from the year 2018 <u>0% total compliance—weights obtained in BOTH lbs and kg</u>; Post-Intervention Data – <u>72% compliance!!!</u> Development of regional and pre-hospital relationships</p>	<ul style="list-style-type: none"> <li>Purposeful sampling showed that practices in action but not always being documented.</li> <li>Noted a deficit in escalation of vital signs</li> <li>Had some technical issues with logging into data system.</li> <li>Staff turnover</li> <li>Subjective interpretation of pain scales – do we all interpret the same?</li> <li>Lengthy data entry process</li> </ul>	<ul style="list-style-type: none"> <li>Wt in Kg was an ideal bundle to start with.</li> <li>VS escalation is ongoing project.</li> <li>Providers and RNs all willing to participate</li> <li>Opportunity to educate</li> </ul>





## ***Targeted Issues Project***

**Mark Cicero, Kathleen Adelgais, Linda Brown and Marc Auerbach**

### **Measure the impact a highly functional PECC on the Quality of EMS Clinical Care and Patient Outcomes**

**Objective 1:** Improved Quality of Clinical Care and Patient Outcomes for Pediatric EMS Patients

**Objective 2:** Measure Psychomotor and Cognitive Skills among EMS Providers before and after PECC designation

**Objective 3:** Assess Family Satisfaction with EMS Care for Children (FAMILY Tool)

#### **Outline:**

**December 2019 – January 2020**

**Finalize Family Tool document**

**Hire Six Research Associates**

**January – March 2020**

**First Measurement Simulations at each agency**

**March 2020**

**Presenting FAMILY Tool at FAN Quarterly Meeting**

**April – June 2020**

**Second Quarter Simulations ( not all agencies have finalized date yet due to Coronavirus)**

Year One: Anaphylaxis

Year Two: Sepsis/Seizure

Year Three: Ped Asthma/Respiratory Arrest

Year Four Infant Cardiopulmonary Arrest

# Pre-hospital



**EMS Pediatric Readiness Survey**  
wraps up at the end of the month

**Pediatric Education for the pre-hospital professionals Courses**

**Neonatal Resuscitation Courses**

**Simulations**

# ED-Related

ED Simulations

ED Nurse Triage Education and  
Guideline Committee

Emergency Nursing Pediatric Courses

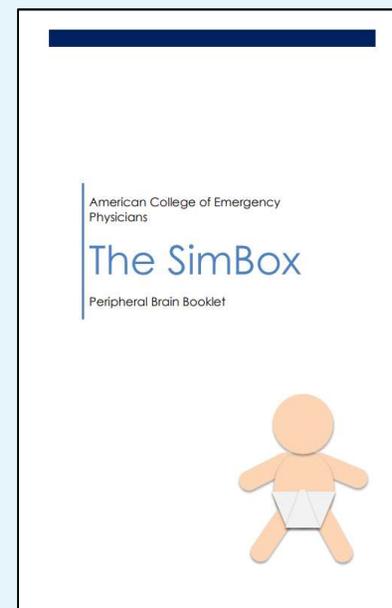
Scheduling quick check-in's throughout  
the year at your ED to review progress  
and activities and bring suggestions and  
feedback back to our team

And....

Pediatric Readiness Surveys – June-September  
<https://www.facebook.com/PedsReady>



# Infant Simulator



<https://www.acepsim.com/>

Amazing response at the ACEP Conference so there are only a handful left!!!

If you would like to receive a SimBox, please go to:

[https://yalesurvey.ca1.qualtrics.com/jfe/form/SV\\_72qUDs2iSElsmCV](https://yalesurvey.ca1.qualtrics.com/jfe/form/SV_72qUDs2iSElsmCV)



# SARS-CoV-2 and COVID-19: What's Known and How Pediatric Emergency Providers Can Respond

MARCH 17, 2020

# REVLON

er

With Us It's

RENEWAL  
soothing bath  
TREATMENT  
HYPO-ALLERGENIC  
COLLOIDAL  
PROTECTANT  
Itchy, Irritated Skin  
Dry/Oak/Sumac,  
Insect Bites  
Eczema  
Tricky Heat,  
Stives & Sunburn  
Fragrance Free  
Dermatologist Recommended

8 SINGLE USE BATH PACKETS  
1.5 OZ (42g) EACH  
TOTAL NET WT 12 OZ (340 g)

~~\$30.24~~ **\$1.89**

PURELL  
FRAG. JELLY WRAP  
HAND SANITIZER 17

~~\$11.92~~ **\$1.49** ~~\$6.38~~ **\$3.19**

TS 0.22  
HAND SANI REG  
RENEWAL 3060

~~\$3.25~~ **\$6.49**

DAYLOGIC  
HAND SANITIZER  
REGULAR 322

~~\$11.92~~ **\$1.49** ~~\$6.38~~ **\$3.19**

DAYLOGIC 32  
ALOE HAND SANI  
RENEWAL 3312

~~\$6.38~~ **\$3.19**

DAYLOGIC  
HAND SANITIZER  
ALOE 82

~~\$23.92~~ **\$2.99** ~~\$7.98~~ **\$3.99**

DAYLOGIC  
HAND SANITIZER  
FRAGRANCE 82

daylogic  
exfoliating  
facial sp  
daylogic  
exfoliating  
facial sponge

~~\$7.99~~ **\$7.00**







ATTENTION CUSTOMERS!

HAND SANITIZER IS  
TEMPORARILY OUT OF STOCK

SORRY FOR THE INCONVENIENCE!

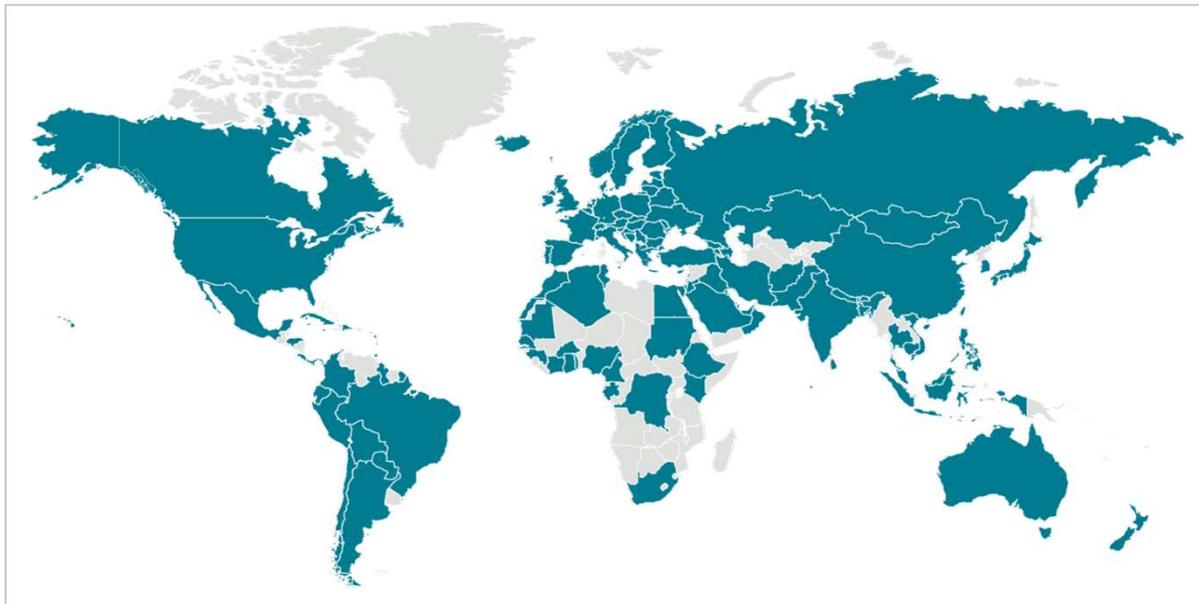


# Goals

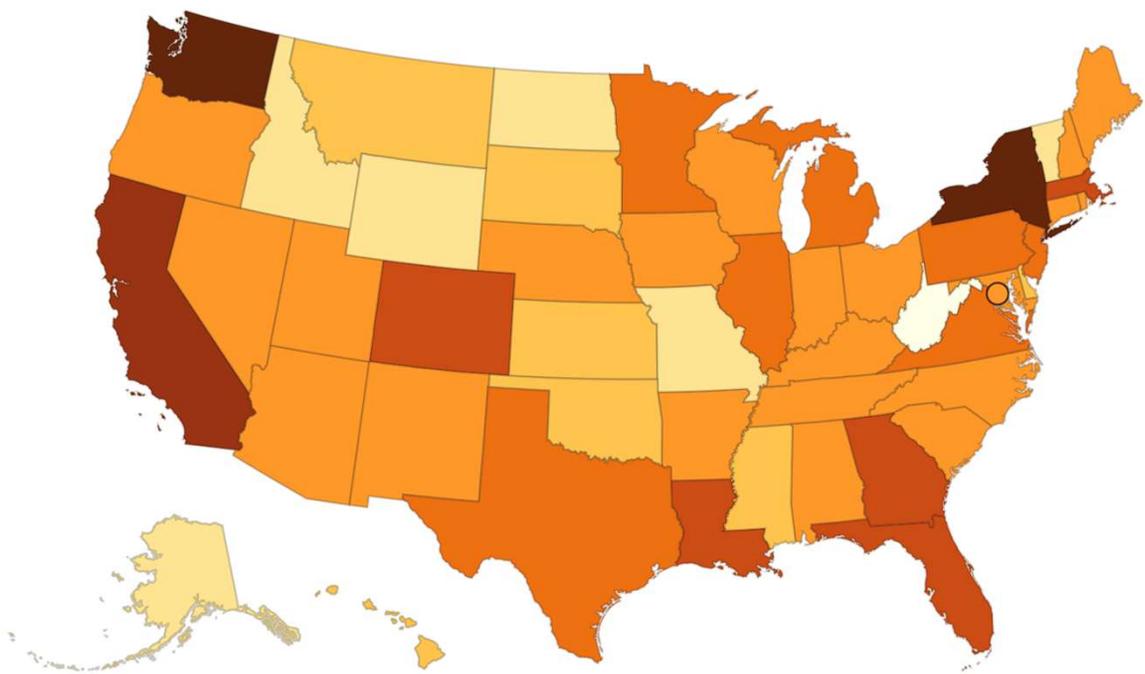
Describe	Describe the events that have led to the current global pandemic
Understand	Understand the SARS-COV-2
Review	Review the pathogenesis of COVID-19 in humans
Survey	Survey the epidemiology of the pandemic
Discuss	Discuss indications and conflicting guidance regarding for testing
Consider	Consider the flow of suspected COVID-19 patients through the PED
Recall	Recall local, state and national resources for pandemic response

## Global Map

*As of 12:00 p.m. ET March 16, 2020*



Global case numbers are reported by the World Health Organization (WHO) in their [coronavirus disease 2019 \(COVID-19\) situation report](#) [\[7\]](#) . For U.S. information, visit CDC's [COVID-19 in the U.S.](#)



### Reported Cases

(last updated March 17, 2020)

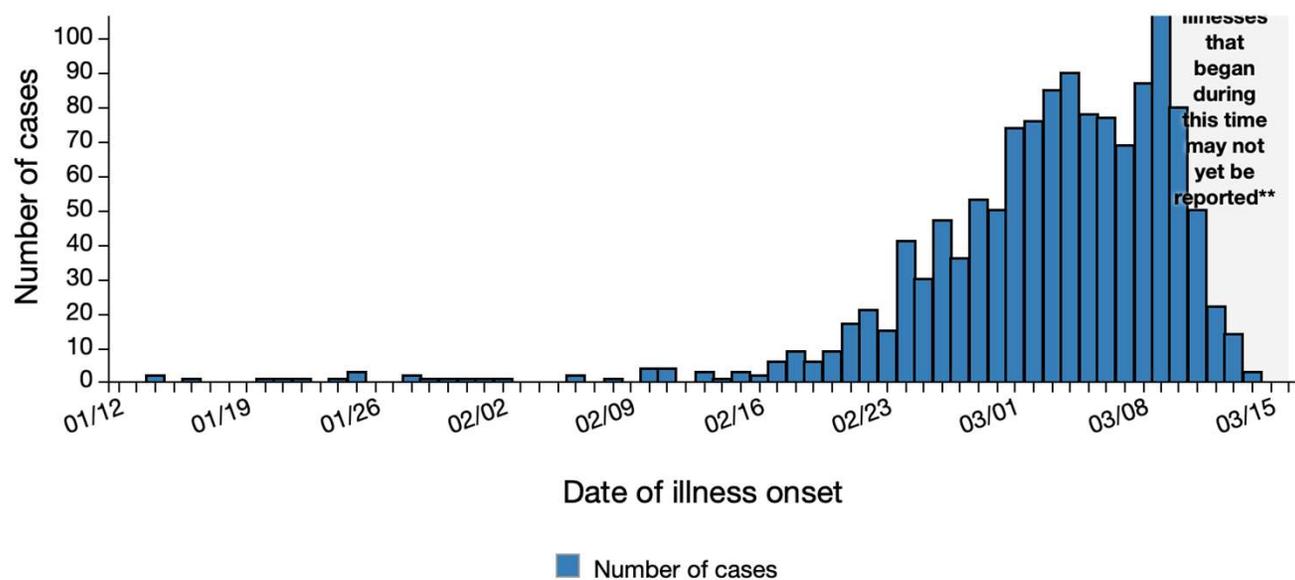
- None
- 1 to 5
- 6 to 10
- 11 to 50
- 51 to 100
- 101 to 200
- 201 to 500
- 501 to 1000

Territories AS GU MH FM MP PW PR VI



## COVID-19: U.S. at a Glance\*

- Total cases: 4,226
- Total deaths: 75
- Jurisdictions reporting cases: 53 (49 states, District of Columbia, Puerto Rico, Guam, and US Virgin Islands)



# Initial Reports of a Novel CoronaVirus



Some initial cases linked to a seafood market in Wuhan city, live animal sales



Person -to- person spread is primary transmission mode



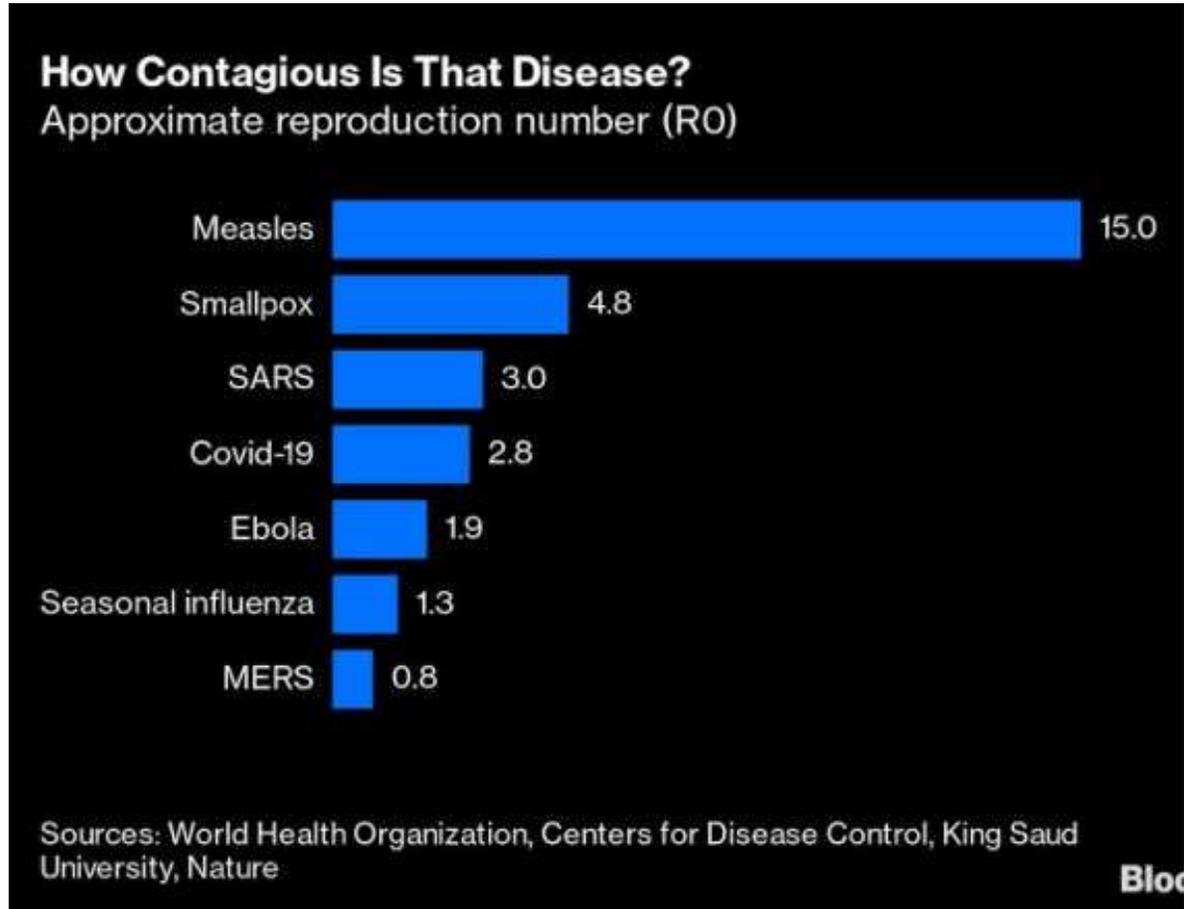
Initial cases linked to travelers from China

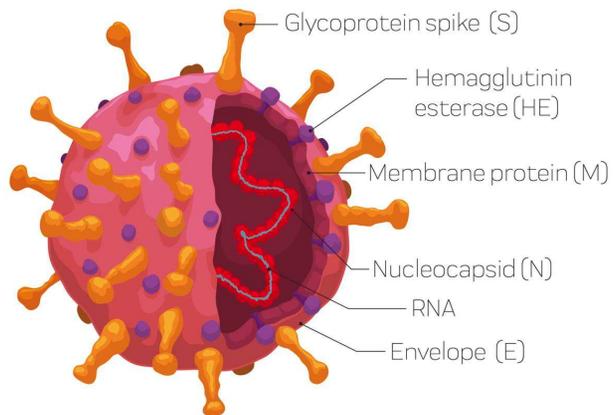


Travel history becoming less relevant as community spread matures

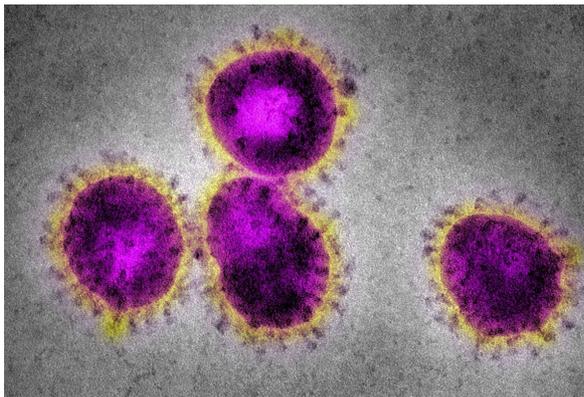
# Virology

- Secondary infection COVID-19 ranged from 1 to 5 percent among tens of thousands of close contacts of confirmed patients in China.
- In the United States, the symptomatic secondary attack rate was 0.45 percent among 445 close contacts of 10 confirmed patients





CORONAVIRUS STRUCTURE



- Enveloped RNA virus (SARS-CoV-2)
- Spreads via direct contact with infected secretions or large aerosol droplets
- Fecal-oral theoretically possible
- Immunity develops soon after infection, wanes gradually over time

## VIROLOGY

- During the PED simulation, hospital infection control stated CoV-SARS-2 persists on surfaces for one hour
- An article in The Journal of Hospital Infection, March 2020 states:  
Human coronaviruses can remain infectious on inanimate surfaces for up to 9 days. Surface disinfection with 0.1% sodium hypochlorite or 62–71% ethanol significantly reduces coronavirus infectivity on surfaces within 1 min exposure time. We expect a similar effect against the  
SARS-CoV-2.
- A report from Singapore: RNA was detected on nearly all surfaces tested (handles, light switches, bed and handrails, interior doors and windows, toilet bowl, sink basin) in the airborne infection isolation room of a patient with symptomatic mild COVID-19 prior to routine cleaning
- From the CDC (<https://www.cdc.gov/coronavirus/2019-ncov/community/home/cleaning-disinfection.html>) Current evidence suggests that novel coronavirus may remain viable for hours to days on surfaces made from a variety of materials

# PATHOGENESIS

- Incubation period 5-14 days
- February 11 Chinese CDC Epidemiologic Report (44,500 patients):
  - 81% of infected (test +) patients had no or mild symptoms, mild PNA
  - 14% with severe disease (hypoxia, widespread lung involvement, dyspnea)
  - 5% critically ill (respiratory failure, shock, SIRS)
  - 2.3% incidence of fatality
- Case characteristics (small report of 138 Wuhan patients):
  - Most have fever
  - ~60% with cough
  - ~30% myalgias
  - Lymphopenia present in 83% of patients (study of 1099 Wuhan patients)





## PATHOGENESIS

- Signs and symptoms among children with COVID-19 may be milder than in adults:
  - Fever
  - Cough
  - Congestion
  - Rhinorrhea
- Viral shedding can occur for weeks after infection
  - 22 days in respiratory specimens
  - 15 days in blood and stool
- Recovery times are 2-6 weeks

# SUSPECTED PATIENT WORKFLOW



A simple surgical mask is placed on the patient as soon as COVID-19 is suspected



The code for the isolation cart is 5-2-4

# PERSONAL PROTECTIVE EQUIPMENT FOR PROVIDERS AND NURSES



N-95 Mask



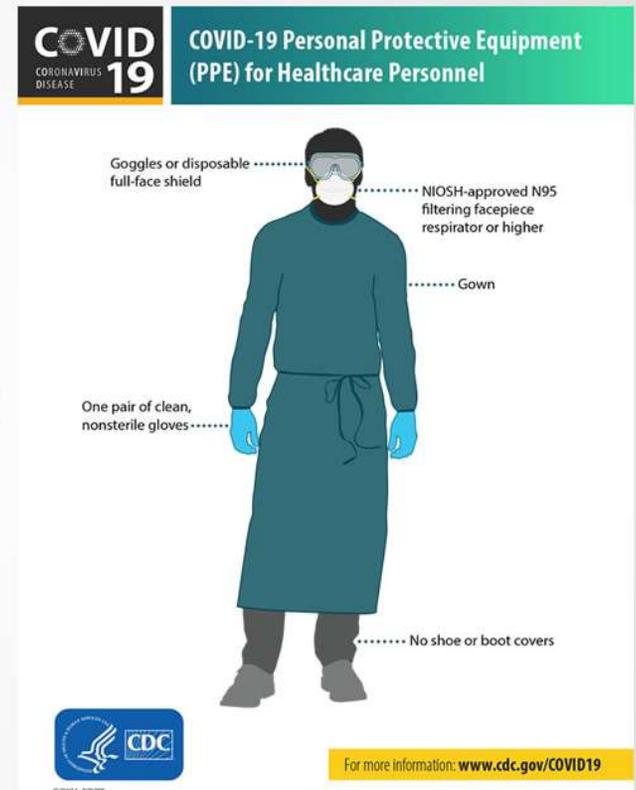
Face Shield (an addition to standard airborne precautions)



Gloves



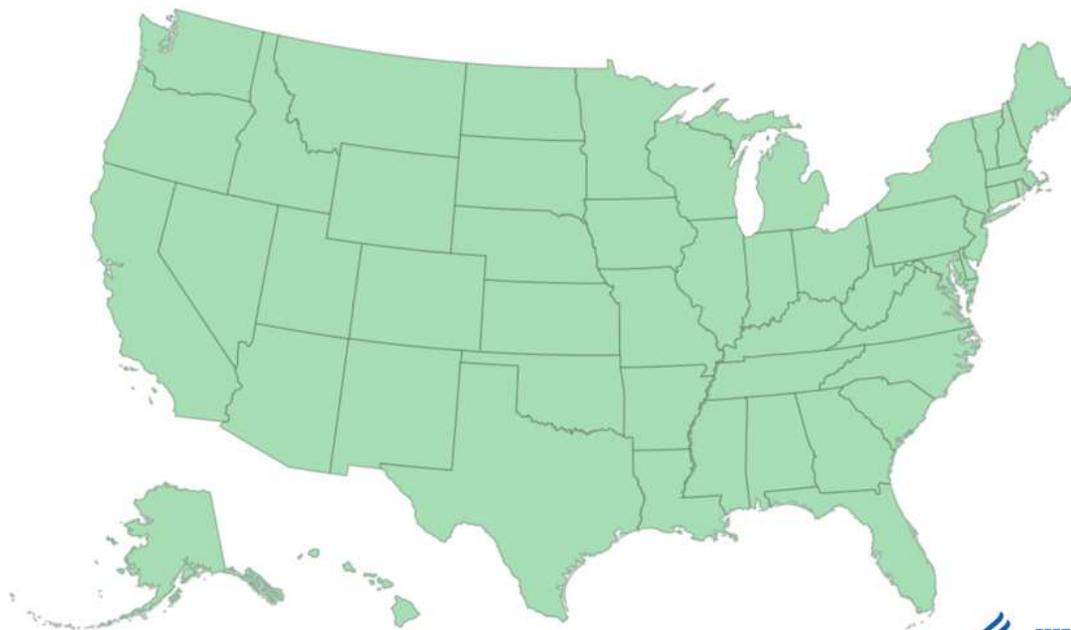
Gown



Note: hospital policy states transport personnel use mask and gloves only  
Let's discuss Doffing Procedures

## TESTING

- The United States CDC states COVID testing should be based on clinical judgment
- Most patients with confirmed COVID-19 have:
  - Fever (subjective or confirmed)
  - Symptoms of acute respiratory illness (cough, dyspnea)
- Also consider:
  - Recent travel to specific locations
  - Contact with patients with COVID-19
  - Being a health care worker is a risk
  - People who work in food service, grocery stores, or otherwise have contact with the public



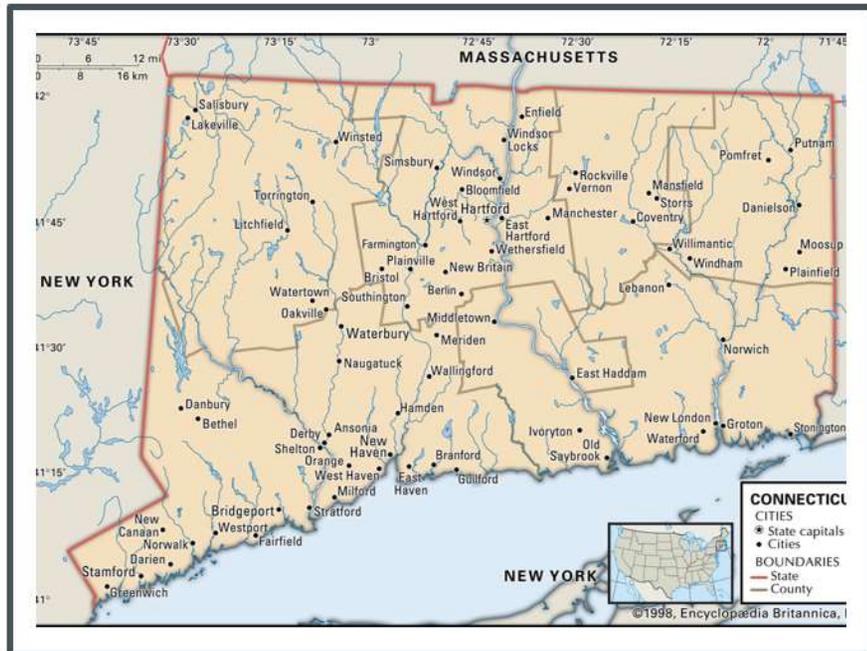
### Status

- In progress
- Currently testing

Territories **GU** **PR** **VI**



## AVAILABILITY OF TESTING IN CONNECTICUT



- CT Received a second kit of 600 tests from the federal government (DPH)
- Commercial Labs are testing (LabCor began last week, Quest 'soon')
- Bristol, Greenwich YNHH and other Hospitals are establishing a 'tests in a trailer' protocol

## TESTING

- Using airborne precautions, take these samples:
  - Each nostril (thin swab)
  - The oral pharynx (thick swab)
  - Sputum sample if patient is generating sputum spontaneously
  - (Urine and stool samples may be taken)
- Testing is via PCR



## TESTING

- Transfer of bagged specimen to personnel outside the negative pressure room
- Infection control recommends no PPE for bagged specimen recipient
- Sample to be walked to the lab

## MANAGEMENT OF PATIENT WITH MILD DISEASE

- What is the expected PED management of mildly ill patients suspected of having COVID?
- Discourage PMDs from referring such patients to the PED
- No testing indicated per state and YNHH policy
- Manage any intercurrent illness or injury, provide them anticipatory guidance, discharge them from the PED as soon as possible
- Encourage 14 days of self-isolation

## MANAGEMENT OF PATIENT WITH SEVERE DISEASE



- Adhere to airborne and contact precautions
- Deliver resuscitative and supportive care as indicated
- A system to allocate negative pressure rooms on the floor and PICU is in place

## MANAGEMENT OF CHILDREN WITH SUSPECTED COVID-19

- Minimize visits to healthcare
- Minimize visitors in general
- No testing (for now) of patients who are to be discharged
- Avoid treatments/procedures that create aerosols (e.g. nebulizers)

### Use of nebulisers for children during a Covid-19 outbreak

Follow local guidelines when available.

Contextualise advice to your patient's needs and your service.

Children are at low risk of Covid-19 complications but croup and asthma can be life threatening. Don't withhold nebs if needed clinically.

#### Asthma : Avoid Unnecessary Nebuliser Use

##### Mild Disease



##### Moderate Disease



+ Low Flow  
Subnasal O<sub>2</sub>

##### Extremis



Airborne PPE for staff  
+ Neg pressure room  
if possible

#### Croup : Avoid Unnecessary Nebuliser Use

##### Mild Croup



Without significant stridor or  
work of breathing

##### Severe Croup



Nebulised  
Adrenaline  
+  
oral steroids



Airborne PPE for staff  
+ Neg pressure room  
if possible



Advice is evolving. 15.3.2020  
Created by STORK for CHQ



## EMS APPROACHES TO COVID-19

- Minimize contact with patient
- Wear PPE
- Minimize recirculation in the driver's and passenger's compartment
- Avoid aerosolizing procedures
- Per local protocol, consider non-transport of well patients



# COVID-19 Call Center Activated

The Yale New Haven Health COVID-19 call center can be reached at 203-688-1700. [Learn More...](#)



## YALE GUIDANCE AND RESOURCES

- Limit the number of nurses, physicians and providers caring for each patient
- COVID shifts?

## CONNECTICUT GUIDANCE AND RESOURCES



- Limit testing to patients who are being hospitalized
- Quest commercial labs to manage samples 'soon'

## FEDERAL GUIDANCE AND RESOURCES



- The United States CDC states COVID testing should be based on clinical judgment
- Most patients with confirmed COVID-19 have:
  - Fever (subjective or confirmed)
  - Symptoms of acute respiratory illness (cough, dyspnea)
- Also consider:
  - Recent travel to specific locations
  - Contact with patients with COVID-19
  - If patient is a health care worker

Coronavirus & School Closures in U.S.

- ENTIRE STATE CLOSED OR SCHEDULED TO CLOSE
- SOME DISTRICTS CLOSED OR SCHEDULED TO CLOSE

### WHAT IS UNKNOWN

- Pandemic duration
- Number infected/ill/hospitalized/deceased
- Effect of school closures on children's physical and mental health
- Timing of immune globulin and immunization
- Who among us will get sick, and how the team will cover

**Connecticut**

**Entire State Closed or Scheduled to Close**

CLOSURE DATE  
**3/17/2020**

NUMBER OF PUBLIC SCHOOLS  
**1,250**

PUBLIC SCHOOL ENROLLMENT  
**535,118**

Edweek.org, accessed 3/17/20 (Bethlehem and Woodbury District the first CT Closure)

This morning Hamden and New Haven Districts have announcements





## CONCLUSIONS

- CoV-SARS-2 has high infectivity and potential for morbidity and mortality > seasonal flu
- Follow isolation procedure for suspected patients
- Encourage non-attendance of the PED for those who don't require it
- Stay informed

# Stay Connected



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<https://twitter.com/CTEMSC>

<https://www.instagram.com/ctemsc5>

<https://ctemsc.slack.com>