EMS Response to
COVID-19 /SARS2-CoV-2

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Background COVID-19

- Recent initial outbreak of severe respiratory disease in Wuhan China caused by a coronavirus. Virus was named SARS-CoV-2. The disease it causes has been named Coronavirus Disease 2019, or "COVID-19" for short
- Declared "Public health emergency of international concern" on January 30th. Declared a Public Health Emergency in the US on January 31st to help start preparations
- Has since spread to more than 60 locations internationally.

What is it?

- The virus itself is a Beta-coronavirus similar to MERS-CoV and SARS-CoV.
- Complete clinical picture of COVID-19 not fully understood, but seems to be similar to MERS-CoV and SARS-CoV.
- Illnesses have ranged from mild-severe, some resulting in death.

Spread

- Felt to spread predominately from person-to-person within close contact with one another (within 6 feet distance)
- Through respiratory droplets
- Possibly airborne over short distances
- Viral RNA has been found in stool, blood, respiratory droplets. Unknown if these also represent possible infective sources.
- Unknown if vomit, urine, breast milk, or semen can contain viable infections SARS-CoV-2

Incubation period and recovery peroid

- Once infected, the average asymptomatic incubation period is somewhere between 2-14 days.
- It is not yet known the onset and duration of viral shedding, or potential periods of infectivity.

Symptoms

- May be mild to severe, and appear 2-14 days after exposure
- Fever (83-98% of cases), Cough (46-82%), myalgias and fatigue (11-44%), Shortness of breath (31%) at illness onset. Sore throat has also been reported early in the course.
- Less common symptoms include sputum production, headache, hemoptysis, and diarrhea.
- Some patients have reported GI symptoms prior to developing fever or respiratory symptoms.
- **Asymptomatic infection has also been described**

Risk Factors for severe illness

- Not yet entirely clear, but seem to affect older patients and those with chronic medical problems more severely.
  - Lung disease, cancer, heart failure, cerebrovascular, renal, and liver disease, DM, immunocompromising conditions, pregnancy
- Most cases have been in adults, with the median age of infection being 59 years of age.
- Critically ill patients (admitted to the ICU) have been older (median age 66), and more likely to have underlying co-morbid issues (72%).

Clinical Course

- Presentation and course varies in severity from asymptomatic or mild illness to severe or fatal illness.
- Some reports suggest potential for clinical deterioration during 2nd week of illness.
  - In one report, just over ½ of patients with COVID-19 and pneumonia developed dyspnea a median of 8 days after illness onset.
  - Mean time from onset to hospitalization with pneumonia was 9 days.

Clinical Course

- Acute respiratory distress syndrome (ARDS) occurred in 17-29% of hospitalized patients
  - Median time to ARDS was 8 days
- Secondary infections in up to 10%.
- 23%-32% of hospitalized patients with pneumonia have required ICU care with respiratory support.
  - 11% high flow O2
  - 42% Noninvasive (BiPAP/CPAP)
  - 47% intubation
  - Small numbers of ECMO

Clinical Course

- Other advanced complications:
  - Acute cardiac injury
  - Arrhythmia
  - Septic shock
  - Acute renal injury

Treatment

- Largely supportive: fluids, airway, pressors.
  - Isolation (Standard, contact, and airborne with eye protection)
  - No specific treatment is available. Vaccines and some antivirals in trials but no data available.
  - Steroids are to be avoided unless indicated for COPD exacerbation or septic shock- may prolong viral replication

EMS dispatch and response

- Enacting Pandemic Response Card
  - Card 36 (pandemic/flu response), adapted to COVID-19
  - 3 levels of response
    - Level 1- Surveillance (no cases identified yet).
    - Level 2- Positive cases in the area
    - Level 3- resource levels low (due to quarantine and/or call volume).

Modified Caller Queries

- Modified caller questions may include
  - Measured body temperature >100.4
  - Fever (hot to touch in room temperature)
  - Chills
  - Difficulty breathing or shortness of breath
  - Persistent cough
  - Any other new respiratory problems
- Opting to not ask about travel history- keep questions broad, sensitivity high on questions, catch as many cases as possible.
- Providers can ask travel histories on scene.

Patient Assessment

- Initial assessment should begin from a distance of at least 6 feet “from the door assessment”
- Questions will be asked of the patient:
  - Has s/he traveled in the last 14 days (if so, where?)
  - If yes, confirmed travel from a known infected area?
  - Contact with a person who has traveled from a known infected area in the last 14 days?

Patient Assessment

- If questions positive→ Provider dons appropriate PPE (N95 level mask or higher), gown, gloves, face shield/goggles. If COVID-19 not suspected, follow standard procedures and use standard PPE for respiratory infection (droplet and contact precautions)
- Patient contact should be minimized until surgical mask is placed on patient. Facemask should be worn over cannula. Oxygen masks can be used if clinically indicated.
- All non-essential personnel will be kept outside, and dismissed when able.
- If patient is able to safely ambulate or stand, the cot will be moved to the patient, and patient assisted to the cot.

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Patient Assessment/Treatment

- Aerosol-generating procedures: (Nebulizers, BVM, suctioning, intubation, CPAP, CPR).
  - HEPA filtration ideal but not readily available.
  - If possible, rear doors of transport vehicle should be opened, and HVAC system should be activated. Should be done away from pedestrian traffic.

Transport

- If a patient requires transport:
  - Notify receiving facility ASAP that the patient has an exposure history and signs/symptoms suggestive of COVID-19.
  - Keep patient separated from others as much as possible.
  - Family members should not ride with the patient.
  - Isolate the driver from the patient compartment, keeping all pass-thru's and doors between compartments shut (done prior to placing patient in ambulance).

Transport

- Vehicle ventilation in both compartments (driver and patient) should be on non-recirculated mode to maximize air changes, reducing potentially infective particles.
- Rear exhaust fan should be used to draw air away from cab, toward the patient care area, and out the back of the vehicle.

Documentation

- Should be done after transport is completed, PPE is removed, and hand hygiene has been performed.
- Should include a list of EMS providers and public safety providers involved in the response and level of contact that has been made with the patient.
  - This may need to be shared with public health authorities.

Cleanup and Decon

- General Guidelines:
  - After transporting, leave rear doors of the vehicle open to allow for sufficient air changes. (time to complete transfer of patient care to receiving personnel and complete documentation should be adequate). Doors are to remain open while cleaning
  - When cleaning, providers should wear disposable gown and gloves. Face shield or facemask/goggles should also be utilized

Cleanup

- Routine cleanup and disinfection procedures are generally sufficient for SARS-CoV-2
  - Use cleaners and water to pre-clean surfaces prior to applying EPA-registered, hospital-grade disinfectant to surfaces
  - Use approximate contact times for cleaners as indicated on label

Cleanup

- Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. They will be identified by a claim on the packaging.
- “Product Name) has demonstrated effectiveness against viruses similar to SARS-CoV-2 on hard, non-porous surfaces. Therefore, this product can be used against SARS-CoV-2 when used in accordance with the directions for use against (name of supporting virus) on hard, non-porous surfaces”

Cleanup

- If there are no available EPA-registered products with this claim, products with label claims against human coronaviruses should be used according to instructions
- All surfaces and reusable patient care equipment that may have had contact with the patient or contaminated materials needs cleaned (stretcher, rails, panels, cabinets, floors, work surfaces, seats, monitors, monitor cables) need cleaned per manufacturer recommendations.
- All disposable items are red-bag items
- Avoid shaking linens, follow receiving facility guidance as to linen drop-off

Reporting

- Local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur (especially in Keep-at-home pathway)
- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure proper follow up.
- EMS personnel should be alert for fever or respiratory symptoms (cough, SOB, sore throat, fever). If symptoms develop, they should self-isolate and notify occupational health services and public health authority to arrange for appropriate evaluation.

N95 replacement

SIGNAGE to go up in OSF related to N95 replacement

- **“N95 masks are available only on an as-needed basis and are a 1:1 exchange.”**
  - **Please see charge nurse for all exchanges**

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At home isolation Level III

- Lack of priority symptoms
- Lack of comorbidities
- Under age of 55
- Full vital signs (including pulse ox).
- Call medical control for all decisions

Patients will be given instructions for home care

Instructed to call local health department for further instructions.