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COVID-19 in the Emergency Department Setting

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Early Reports

- **January 24, 2020**

- Outbreak of respiratory illness in Wuhan, China

- Novel (new) coronavirus: 2019-nCoV

- U.S. reports first infection in traveler returning from Wuhan January 21st

- Triage: screen patients at first point of contact

Emergency Department (ED) Triage, late January

- **CDC Criteria for Patients Under Investigation (PUI)**

- Fever AND lower respiratory illness (cough, SOB), and in last 14 days history of travel to Wuhan City, China, or

- Close contact with PUI for 2019-nCoV while that person was ill, OR

- Fever OR lower respiratory illness (cough, SOB) and in the last 14 Days before symptom onset, and close contact with ill laboratory confirmed 2019-nCoV patient

ED Triage late January (cont.)

- **CDC Criteria: If Identified as Possible PUI Perform Without Delay**

- Place surgical mask on patient
- Implement contact and airborne isolation
- Place patient in private negative pressure isolation room (or private room and close door)
- All clinicians entering room must wear face-fit N95 respirator and eye protection (face shield or goggles), gown, gloves
- Restrict entry to room
- Follow standard precautions: frequent hand hygiene, surface disinfection
- Notify local Health Department
- Send specimens for confirmation testing to CDC

- **February 9, 2020**

- Ten patients in the U.S. identified as having human to human Coronavirus transmission
- Memphis Fire developing a surveillance tool for EMS dispatch to identify transports at risk.
- Cases beginning to appear in the U.S. without any traceable contacts.
- Lab screening for virus detection still uncommon

March 5, 2020

- **First Tennessee case of novel coronavirus infection confirmed in Williamson County**
- No history of international travel.
- Travel to Mardi Gras in New Orleans

March 11, 2020

- **Tennessee Department of Health (TDH) Update**

- **Triage Healthcare Personnel Preliminary Screening (no direct contact)**

- Maintain spatial distance of > 3 feet
- No specific PPE required for HCP
- Place surgical mask on patient with respiratory symptoms.
- Minimize time in waiting room.

- **Direct Patient Care**

- Full PPE

March 14, 2020

- **Aerosolization of Viral Pathogens**

Avoid noninvasive ventilation and aerosolized bronchodilators

Consider albuterol metered-dose inhaler, 4-8 puffs of 90 mcg every 20 minutes for up to 4 hours, followed by 4-8 puffs every 1 to 4 hours as needed.

- **March 16, 2020**

One visitor rule, later changed to no visitors

- **March 19, 2020**

All triage staff authorized to wear surgical masks

March 20, 2020

- **Major distributors in the U.S. reporting shortages of PPE**
 - EMS experiencing shortages
- **Albuterol MDIs already resulting in critical shortages.**

Resuscitation

- **March 28: No Emergency in a Pandemic**

Every patient should be presumed to have Novel Coronavirus infection (30% asymptomatic carrier rate)

- **All members of the resuscitation team MUST don appropriate PPE prior to participation in a code**

- Physician, 1 tech, respiratory therapist, and a nurse in room during a code.
- Have phone in room on speaker to communicate needs to team outside closed door.
- Pharmacist or nurse and runner outside door have responsibility for supply chain.
- Minimize bagging and CPR when intubating; increases droplet spraying.

Early Observations

- **March 24, Shelby County Safer at Home Order Begins**

- Limits non-essential personnel

- Hospital elective surgeries and outpatient testing canceled

- **ED Census**

- Early March, St. Francis ED seeing 180-200 patients/day
 - After Safer at Home Order, census dropped significantly in EDs across the county. Similar across the country except “hot spots” such as New York, New Orleans, etc.
 - Often saw 50% fewer patients/day from end of March until late May.
 - Staff furloughs.
 - Early patient requests: Employer requested work notes, STIs
 - Outpatient follow up limited.

Early Observations cont.

- **Initial COVID patients older, sicker?**

- Nursing home outbreaks.
- Testing limited.
- People staying at home unless very ill.
- Afraid to come to ER when needed, including MI, CVA.

- **SCHD Reports Overdose Spikes**

- Defined as a significantly higher number of OD events during a period of time than would be expected based on prior data.
- 4/27/20-5/30/20: 482 suspected overdose events, 70 of which were fatal.

Early April, 2020

- **Updated guidelines from hot spots**

- Limit IV fluids unless patient known hypovolemic.
- Don't intubate "happy hypoxic". Keep sat >90 by escalating NC 2L to NC 10L plus NRB at 15 L over it. Prone patient. Check ABG.
- Don't intubate tachypneic patient who looks bad unless altered mental status. Check ABG and intubate if developing respiratory acidosis.
- EKG for baseline QTC.
- Monitor Magnesium and Potassium.

Mid April 2020

- **ED COVID-19 order bundle**

- **Isolation:** Enhanced Precautions, PPE per hospital protocol, No Visitations.
- **Continuous Cardiac Monitoring, EKG**
- **Respiratory:** NC, keep SpO2 \geq 93%, continuous pulse ox
- **Medications:** Link for updated treatment guidelines. Acetaminophen 1000 mg once.
Prophylactic anticoagulation unless contraindicated
- **Laboratory:** SARS COVID Antigen, Influenza A/B, ABG, CBC w/Diff, CMP, CPK, LDH, Pro-BNP, Procalcitonin, PT, APTT, Troponin, D-Dimer, Ferritin, Fibrinogen, Blood Culture Q15 min x 2, CRP Quant, Lactic Acid, Mycoplasma Pneumonia Antibody IGM.
- **Radiology:** Chest 1 View (portable), CT Chest w/contrast if indicated

Current ED Conditions

- **Hospital and ED census returning to pre-COVID numbers**

Elective surgeries and outpatient testing open.

ED admission holds for ICU, Telemetry, and Med/Surg not unusual.

COVID antigen testing now in hospital.

All ED staff to wear surgical mask, goggles or face shield, gloves at all times.

N95 for prolonged close contact or aerosolized procedures, resuscitation, etc.

- **Everyone who comes through the ED door presumed to have COVID**

- CDC list: Fever/chills, cough, shortness of breath/difficulty breathing, body aches, headache, new loss of taste or smell, sore throat, congestion/runny nose, nausea or vomiting, diarrhea.
- Many asymptomatic.

Current ED Conditions

- **Unusual Presentations**

- 11 year old MVC.
- 35 year old “adverse medication reaction”.
- 15 year old shortness of breath.

Current ED Conditions

- **Admit or Discharge?**

- Since COVID test result usually not known at time of discharge, give discharge Rx for antibiotic for possible CAP if small infiltrate on CXR and patient otherwise stable.
- Limit steroids.
- Admit any patient with O2 sat <90.
- Healthy with no comorbidities, may discharge with instructions to get O2 sat monitor and return to ED if sat < 90. Consider any respiratory distress or significant chest x-ray abnormalities in decision.
- Consider age and comorbidities.

- **Admissions for COVID positive and PUI on a downturn**

References

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Questions?

