




Johns Hopkins COVID-19 Clinician Pocket Reference Guide V1.3 - Approved

Epidemiology		Resources
Disease agent	Virus called SARS-CoV-2 and is an enveloped RNA coronavirus. Similarity to SARS-CoV-1 from 2003	<p>HEIC Intranet</p>  <p>ACCM COVID19</p>  <p>Donning & Doffing PPE</p>  <p>HEIC: X10955682XXXX Infection control: X5X5004XXXX Occupational Health: X4X39770X</p> <p>For suggestions/comments/updates of one sheet please contact: snavar3@jhmi.edu, ahereka1@jhmi.edu, sbarono2@jhmi.edu Sergio Navarette Akbar Herekar Stamatis Baronos</p>
Transmission	Initially wildlife (bats and pangolins) → human. Now human → human. Infectious secretions: resp droplets, sputum, blood, serum.[1] Attaches to Angiotensin Converting Enzyme-2 (ACE-2) receptor of type II pneumocytes	
R0	= number of new cases from a single infection = 2.24-3.58 [2]	
Case Fatality (CF)	Overall CF ratio (death/confirmed infections) = 4.5% (current number) [3] CF rate of >80 age group = 14.8%[4] Case fatality ratio of "critically ill" 49%[4]	
Risk Factors for severity	Old age, Coronary Artery Disease, Hypertension, Diabetes, Chronic Respiratory Disease [4,5]	
Recognition	Always wear PPE with Patient	
Diagnosis	Signs and Symptoms	Common: Fever > 99.1°F - 94%, Cough - 79%, Sputum - 23%, Myalgia - 15% Unusual: Diarrhea - 5%, N/V - 4%, Silent hypoxemia [6] - small proportion
	Typical time course [5]	Onset of symptoms after exposure 4- 14 days After onset - Day 1 Fever/Cough 1-week Dyspnea
Laboratory	Pertinent lab abnormalities [5]	Lymphocytopenia, mild leukopenia, mild thrombocytopenia. ↑ D-dimer, ↑ Serum ferritin, ↑ Troponin, ↑ LDH >, ↑ creatinine
	COVID-19 PCR Assay	Procedure requires a nasopharyngeal swab. Test was developed at JHH & returns results within 24hrs.
Microbiology	Secondary Infection is common, especially in non-survivors. Rule out bacterial infection if concerned.	Order respiratory viral panel: Influenza A/B, RSV and COVID-19 Order bacterial/ fungal cultures based on clinical suspicion
Imaging	Chest X-ray (AP view) - sensitivity 59% [7]	Bilateral pulmonary infiltrates (75%) and consolidation (59%) N.B: Pleural effusion, masses, cavitation, lymphadenopathy is uncommon [8,9]
	CT scan (without contrast) [8] <u>Avoid if possible:</u> resource-intensive, removes staffing from the ICU, may be different to limit exposure and does not dramatically change management	Ground glass opacities (71% patients) typically peripheral and basal[8] and consolidation (59% patients) Progression - Initial presentation is GGO before symptom onset that progresses to consolidation over 2-3 weeks)
	Lung Ultrasound [9] Correlates well with CT scan, rapid, safe, low cost and can be performed by bedside clinician In lieu of CXR for ETT placement, vent assessment	Mild infection/early phase - Focal B lines is the main feature, pleural thickening Progressive/Critical stage - Multiple B-lines, consolidation Recovery phase - Appearance of A-lines Pleural effusions are uncommon.
Treatment	Cautions	Action Items
Overall	ALWAYS wear PPE & PAPR or N95 + Face Shield	Clustered care. Be proactive regarding procedures.
Medications	Currently limited data on antiviral therapy. Data on steroid is conflicting [11,12]	Consult ID. Enroll into clinical trials. Lopinavir/Ritonavir has no benefit [10] Steroids can be considered for other indications (e.g.: COPD exacerbation)
Fluids Feeding Renal	Avoid 30ml/kg bolus. Patients often have stopped eating for several days. Renal failure is common	Conservative fluid management. Early vasopressor. PRN Fluids. Early feeding is important - often through NG or ND. Consider CVVH. If unavailable, can use iHD w low dose vasopressors.
Respiratory Care	ALWAYS have patients wear a surgical mask. High flow NC: do NOT exceed 40L/min flow. If FiO2 > 50% call for evaluation of intubation. Do NOT wait to intubate. Early proning is recommended - lung protection Avoid bronchoscopy - risk of aerosolization VV ECMO may be considered	Intermittent monitoring with bedside ultrasound. Nasal cannula (NC) & High flow NC under a surgical mask. ARDS protocol 6 ml/kg of predicted body weight.[13] Plateau pressure < 30 cm H2O & Driving Pressure < 14 cm H2O [14]. If P:F < 150 mmHg, prone positioning for at least 18-24 hours daily [15] Consider neuromuscular blockade & iNO Permissive hypercapnia pH > 7.2
Intubation	Caution! Aerosolizing procedure. Avoid bag-valve ventilation. Have norepi, sedation & ventilator ready. PREOXYGENATE with non-rebreather 100% for 5 min.	PAPR & full modified PPE including 3 sets of gloves to be worn. Airway team: One nurse, one intubator +/- assistant, one RT. Video + standard laryngoscope w/ sized blades. 7 & 7.5 ETT + stylet. <ul style="list-style-type: none"> Yankauer suction, oral airways, LMA +/- Bougie CO2 colorimetric detector, high efficiency hydrophobic filter
Cardiac	Emerging concern for viral cardiomyopathy. Ventricular arrhythmia & asystole has been reported. <ul style="list-style-type: none"> May occur as lungs begin to recover Do NOT bag ventilate during a code unless intubated.	Critical Care Ultrasound for Monitoring Rapid LV assessment with POCUS - concern regarding myocarditis Early cardiology consult with a new depressed function or arrhythmia. Inotropic support may be considered
Discharge	<i>Based on recommendations from China:</i> no fever for at least 3 days, substantial lungs' improvement in imaging studies, clinical remission of respiratory symptoms, and two throat-swab samples negative for SARS-CoV-2 RNA obtained at least 24 h apart.[2]	

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How to Use a Powered Air Purifying Respirator (PAPR)



Donning and Doffing PPE with an N95 Respiratory with Eye Protection



Donning and Doffing PPE with a PAPR

