

UCLA Infectious Disease COVID-19 Team Clinical Guidance

Contact Information:

For general questions regarding COVID-19 (patients and staff): 310-267-3300 To facilitate scheduling COVID-19 testing after order has been placed: 310-481-0423

For <u>confirmed outpatient cases</u> that need ID consultation: Please call 310-206-7663, option 2 for an urgent telehealth consult or submit an e-consult for non-urgent issues

For any confirmed inpatient cases, please notify the following with questions or for a consult:

Pediatric-COVID pager: p89315 RRUCLA-COVID pager: p89292 SMH-COVID pager: p89293

Please page the Transplant ID pagers if hx of transplant or listed for transplant

Heart Lung p93424, Kidney p89057, BMT p89473, Liver p89276

OB-COVID pager: p90595/p27401

Palliative Care-COVID pager (for outpatients and SNFs): p89552

Palliative Care- inpatient: SMH 35502 and RR 35501

Infection Control pager 94040

Pharmacy support

Infectious Disease Pharmacists: Matt Davis, Meganne Kanatani, Christine Pham

Clinical Trials Pharmacists: Christina Shin

General Approach to Treatment of Patients with COVID-19

Remdesivir is the 1st line agent for all patients with a SpO2 <94% who meet our eligibility criteria

Dexamethasone 6mg po/IV daily for up to 10 days is recommended for patients who are mechanically ventilated and may be considered for those with worsening hypoxia on any supplemental O2. Steroids are not recommended for patients who do not require supplemental oxygen.

All other therapeutic agents at this time remain experimental.

For a list of open inpatient and outpatient trials, please see this website.

Please also see DHHS guidance at: https://www.covid19treatmentguidelines.nih.gov/whats-new/

UCLA Health

Last updated: 9/8/2021 UCLA COVID-19 Clinical Treatment Working Group

Table of Contents

Section 1. Whom to Test	3
Section 2. Diagnostic Testing for Patients with Confirmed or Suspected COVID-19	4-5
Section 3. Treatment Guidance for COVID-19 Positive Patients	6-13
Section 4. Recommendations for Additional Consultation	14
Section 5. Discharge Instructions	16
References	16-17
Key Tables	
Table 1. Diagnostic Tests	4-5
Table 2. General Principles of Treatment	6-7
Table 3. Dosing of Specific Therapeutics	13
Table 4. Drugs in Pregnancy	13



Section 1. Whom to Test. Please test any inpatient with the following symptoms or signs:

Symptoms

Fever (77-98%, ONLY 44% on admission)
Cough (46-82%, dry in 66%)
Myalgia or fatigue (11-52%)
Shortness of breath (3-31%)
Headache (13.6%)
Nasal congestion <5%
Nausea/vomiting/diarrhea <5%
Ageusia- Anosmia or ageusia (23-68%)

Patients with multiple comorbidities who live in congregate settings (skilled nursing facilities) may present with atypical symptoms and it is reasonable to screen all patients who come from such settings.

Labs and other studies:

Lymphocytopenia (83-90%) - this is a good marker to trend, recovery suggests good prognosis Thrombocytopenia (27-36%)
Elevated AST/ALT (22%)
Leukocytosis (6%)

Abnormal CT (86%), GGO most common (56%), bilateral 51.8%, localized 42% Peripheral GGO early in disease (Would not get this as part of routine tests, see below)

Abnormal CXR 59%, may change over the duration of the illness and with progressive hypoxia Median admission w/ pneumonia 9d from sx onset (DELAYED)

ARDS 17-29%, unexplained resp failure

Co-infection possible, but has become rare over time (e.g., flu, RSV, rhino, usually from the same specimen)

Risk factors for progression: age >60 years, BMI >30, persistent leucopenia, LDH >500. D-dimer >1000ng/mL may be seen more commonly in ICU patients. D-dimer >2000ng/mL may suggest thromboembolic disease, but data remain unclear.

Last updated: 9/8/2021

UCLA COVID-19 Clinical Treatment Working Group



Section 2. Diagnostic Testing for Patients with Suspected or Confirmed COVID-19

Table 1. Diagnostic Testing

	Diagnostic T	esting
an adminaian		Daa

Recommended labs on admission Respiratory testing

- COVID 19 NP PCR recommended as first test
- Repeat NP once if high suspicion and concern for inadequate specimen collection
- Send COVID-19 sputum if high suspicion, repeat COVID-19 NP negative and productive cough
- If intubated and high suspicion and COVID-19 NP negative, send COVID-19 mini-BAL or BAL. (Most critically ill patients have demonstrated positive NP swab in our lab)

Baseline bloodwork

· CBC with diff and CMP

In anticipation of using dexamethasone, consider

- QFT-gold
- Cocci EIA
- Hepatitis BsAg, sAb, cAb, HCV Ab
- Strongyloides Ab
- HIV Ab

Recommended daily labs (can be discontinued at primary team's discretion if no longer needed):

- CBC with diff (trend total lymphocyte count)
- CMP

If worsening hypoxemia or in respiratory distress:

(may be repeated q3 days if abnormal or with clinical deterioration):

- D-dimer, CRP, LDH, Ferritin (DO NOT ORDER DAILY)
- Sputum studies (fungal, bacterial)
- Blood cultures if other signs of sepsis
- BNP

Routine use of procalcitonin upon admission is not recommended, as the clinical significance in COVID is unclear, and the prevalence of community-acquired bacterial superinfection is very low (3-4%)

Suggested labs for immunocompromised patients if evidence of clinical worsening:

- serum beta-d-glucan
- · aspergillus EIA
- · serum cryptococcus ag
- cocci EIA

If clinically indicated:

For acute kidney injury

(i.e. serum creatinine >0.3 above baseline) urinalysis with microscopy spot urine protein:creatinine

For cardiac disease/cardiomyopathy

CK-MB

CK

Troponin-I

BNP

TTE if BNP elevated or other clinical concern

EKG

Continuous telemetry

Last updated: 9/8/2021

UCLA COVID-19 Clinical Treatment Working Group



Radiology

Portable CXR at admission

High threshold for PA/lateral in ambulatory patients, consider only if low suspicion for COVID-19 and result would change management or affect PUI status.

Would NOT get CT Chest as part of routine diagnostic tests per American College of Radiology recommendations.

Consider CTA PE protocol if concerned for pulmonary embolism

Note on serologic testing:

Nucleic acid amplification testing (NAAT) such as PCR remains the primary and most accurate way to diagnose acute COVID-19. The utility of COVID-19 serology testing in clinical settings is unclear. It is not yet known whether the presence of IgG accurately predicts immunity to future infections.

While the sensitivity and specificity of the tests are presumed to be greater than >90% depending on the assay, the positive predictive value depends on the prevalence of the disease in a given population. We do not know the overall prevalence of disease in Los Angeles. However, among patients with a high suspicion of past infection (including prior symptoms compatible with the disease and significant high-risk exposures), the test may have some modest utility in predicting true prior infection. Serologies should not be used to gauge immunity. Routine precautions must continue to be used even with a positive serology, including the use of enhanced droplet PPE when caring for patients with confirmed COVID-19 in the healthcare setting.

COVID-19 serologic testing <u>could</u> be **considered** for the following situations:

- In the setting of suspected prior infection that was not tested by PCR.
- Close contacts of high-risk patients (immunocompromised, elderly) who may have been exposed to the virus in the past
- Healthcare workers or first responders
- Patients residing in congregate settings that may have been exposed to or infected with the virus in the past, but who are not actively infected.
- In the setting of potential plasma donation with prior diagnosed or suspected COVID-19.
- In the setting of COVID-19-like illness where PCR is negative but clinical suspicion of disease remains high.
- In the setting of suspected multisystem inflammatory syndrome in children (MIS-C)

COVID-19 Serology **should not be used** in the following settings:

When trying to diagnose acute COVID-19 (use PCR instead)
 Testing of low-risk community patients (members of the general public) with no suspicion of recent infection who may simply be curious or want to know if they were infected.

UCLA Health

Last updated: 9/8/2021 UCLA COVID-19 Clinical Treatment Working Group

Section 3. Treatment Guidance for COVID-19 Positive Patients **NOTE:** Supportive care is crucial for management of cases

Table 2. General Principles of Treatment

 Enrollment in trials should be d 	iding those who are immunosuppressed and have had Lung Transplant/BMT/other SOT (All transplant patients CEi/ARB DS.	
Place all adult patients on phare	rmacologic VTE prophylaxis such as lovenox or heparin SC if no contraindications. Otherwise place on mechanical s/SCDs. (American Society of Hematology)	
	Outpatient care	
COVID+, clinically stable	 Advise patients on self-isolation Outpatient trials are available (Convalescent Plasma, monoclonal antibody) Monoclonal antibodies are available for high-risk patients, see EUA guidance Other repurposed drugs such as fluvoxamine are not recommended outside clinical trials. Clinicians may consider https://stopcovidtrial.wustl.edu/ 	
	Inpatient - Floor level care	
Low risk - SpO2 >94% on room air Moderate risk, SpO2<94% but stable	 If antibiotics are started, reassess need based on cultures/clinical condition Consider remdesivir if SpO2<94% Consult ID for transplant patients for evaluation of treatment options Certain trials or compassionate use agents may be considered Dexamethasone is NOT recommended for patients who do not require supplemental oxygen 	
Step-Down/ICU level care- Consult Infectious Diseases and Pulmonology		
Moderate-High Risk SpO2≤94% on RA AND requiring increased supplemental O2 OR RR > 30 OR PaO2/FiO2 ≤ 300mmHg OR Mechanical ventilation	 Consider Remdesivir, review eligibility criteria Consider dexamethasone 6mg po/IV daily for up to 10 days if progressive oxygen requirements and in particular mechanical ventilation unless contraindications Tocilizumab or baricitinib may be considered for select patients who are critically ill (see guidance below) Routine supportive care, including blood and respiratory cultures and antibiotics as clinically indicated 	

All COVID-19 Positive Patients



If refractory hypotension, increased pressor requirement

Please obtain blood cultures, sputum cultures and chest x-ray as needed

Consider TTE

Consider pulmonary embolism on differential, CTA PE protocol

Empiric broad spectrum antibiotics as appropriate



Guidance regarding tocilizumab or baricitinib in combination with dexamethasone

Recent data have suggested that tocilizumab in conjunction with dexamethasone can result in a reduction in days of organ support and mortality if used within 24 hours of receiving organ support. Baricitinib has also been shown to reduce mortality among patients who are not undergoing mechanical ventilation. Given this, use of tocilizumab (single intravenous dose of 8 mg/kg of actual body weight, up to 800 mg) or baricitinib (4mg¹ po daily for maximum of 14 days) can be considered **in combination with dexamethasone** in certain hospitalized patients who are exhibiting rapid respiratory decompensation due to COVID-19 meeting the following inclusion/exclusion criteria below:

Inclusion:

- Admitted to ICU < 24 hours and:
 - mechanical ventilation (tocilizumab only)
 - o noninvasive mechanical ventilation (tocilizumab or baricitnib)
 - o high-flow nasal canula oxygen (>0.4 FiO₂/30 L/min of oxygen flow) (tocilizumab or baricitinib)

OR

Recently hospitalized patients (not in an ICU) with:

 Rapidly increasing oxygen needs who require NIV or HFNC <u>and</u> have significantly increased markers of inflammation. (Tocilizumab or baricitnib).

Exclusion: Without high suspicion of bacterial/fungal/mycobacterial infection

ID consultation is needed for the use of tocilizumab or baricitinib for Covid-19. In rare circumstances, baricitinib can also be considered alone when dexamethasone cannot be used. Sarilumab 400mg x 1 dose may be used in lieu of tocilizumab in setting of extreme shortage.

Pediatric Considerations: Tocilizumab is not recommended for the majority of pediatric patients who have mild or moderate COVID-19. For children with severe or critical illness, use of tocilizumab or baricitinib should be evaluated on a case-by-case basis in consultation with the Pediatric Infectious Diseases team

¹ Dose reduction from baricitinib 4 mg to 2 mg PO daily is recommended for eGFR ≥30 mL/min to <60 mL/min and to 1 mg PO daily for eGFR of 15 mL/min to <30 mL/min. Baricitinib **is not recommended** for patients with eGFR <15 mL/min.



Guidance on the use of Monoclonal Antibody Therapy

Since November 2020, the FDA issued emergency use authorizations (EUA) for the use of investigational SARS-CoV2 monoclonal antibody products. The drugs can be considered for the treatment of high-risk patients with mild to moderate Covid-19, who do not require supplemental oxygen therapy or additional oxygen therapy above their baseline. Since the issuance of the original EUAs, data have emerged on the efficacy of certain monoclonal therapies on circulating variants. Bamlanivimab with and without etesevimab is no longer recommended in the state of California due to a reduction in efficacy against the B.1.427/29 and B.1.351 variants.

The following monoclonal antibody therapy has demonstrated a reduction in hospitalizations and ER visits, has retained efficacy against current circulating variants and is currently available for use at UCLA.

- a single infusion of casirivimab 600mg/imdevimab 600mg for a total of 1200mg IV over 20 minutes.
- In select circumstances, subcutaneous injection may be used as an alternative (4 injections)

Monoclonal antibodies may be considered if the following criteria are met for patients with mild-moderate symptoms:

- Age >12 weighing at least 40 kg
- Not requiring any supplemental O2 or increase from baseline O2 requirements
- SARS-CoV-2 Positive test < 7 days prior
- Symptom onset < 7 days prior
- At least one high-risk criterion

Monoclonal antibodies may also be given to high-risk contacts* who meet the following criteria:

- Age > 12 weighing at least 40 kg
- Individuals who are considered high risk by the prior EUA criteria who have had a household or workplace exposure to an individual with confirmed SARS-CoV2 for at least 15 minutes and < 6 feet within the 72 hours prior who are considered high risk by the prior EUA criteria
- Have not been fully vaccinated *OR* have been fully vaccinated and are at risk of a poor immunologic response by virtue of being on immunosuppressive medications, or are transplant recipients, or have a documented hematologic malignancy such as chronic lymphocytic leukemia.

*Please note we have limited space to accommodate high-risk contacts and are almost exclusively focusing on patients with active Covid-19 at this time.

High-risk criteria:

- Age ≥ 65 regardless of medical co-morbidities
- Diabetes
- Immunosuppressive disease or immunosuppressive therapy
- CKD (CrCl < 60 ml/min per Cockroft-Gault for > 3 months)
- Obesity (BMI ≥ 30) (or if 12-17 BMI ≥ 95th percentile (based on CDC growth chart))



- Neurologic diseases: cerebrovascular diseases, Down Syndrome or other neurodevelopmental disorders, or dementia
- Liver disease
- Pregnancy if other risk factors and under maternal fetal medicine consultation (consider checking antibody status)
- Smoking
- Hemoglobin disorders (sickle cell, thalassemia)
- Cardiovascular disease (congenital heart disease, heart failure, CAD, cardiomyopathy, or pulmonary HTN), OR Hypertension
- Chronic lung disease (COPD/emphysema, moderate-severe asthma, CF, pulmonary fibrosis)
- Medical-related technological dependence (tracheostomy, gastrostomy, or positive pressure ventilation not related to COVID-19)

Individuals coming from a disadvantaged socioeconomic background are considered given their increased risk of mortality. Please note the data on the benefit of this drug remain limited. At this time, there are two pathways whereby patients may obtain these investigational drugs.

- Patients who are in the ER and meet the above criteria but do not meet the criteria for admission may be given casirivimab/imdevimab.
- Other patients may be able to receive the drug at our designated infusion center. We have a centralized process whereby a clinical team will review
 all outpatients with positive tests who meet criteria. Our team will reach out to the ordering clinician to discuss the treatment with their patients and
 subsequently place a referral in Care Connect (REFERRAL FOR MONOCLONAL ANTIBODY INFUSION FOR COVID+ PATIENTS [REF1010]).
- Clinicians may also place a referral on their own through Care Connect (REFERRAL FOR MONOCLONAL ANTIBODY INFUSION FOR COVID+ PATIENTS [REF1010]) as long as the criteria are met. Please note each referral will be cross-checked to ensure criteria have been met.
- Referrals for high-risk contacts will be separate from the above referral
- Please review the <u>patient</u> (<u>Spanish</u>) and <u>provider</u> fact sheets for casirivimab/ imdevimab. All patients will be given a fact sheet prior to drug administration.

Given that the demand for this therapy may exceed our ability to administer on any given day, the order time stamp and a point system with measures to account for socioeconomic vulnerability will be included in the allocation process. We will review all referrals at 10:30am on each calendar day.

Ongoing trials regarding the efficacy and safety of monoclonal antibodies, including ACTIV-2 here at UCLA, as well as other studies, remain open. Please send a message in Care Connect to the COVID Research Pool for more details.

These agents are primarily to be used in the outpatient setting. However, select hospitalized patients may be considered with ID approval.

Last updated: 9/8/2021

UCLA COVID-19 Clinical Treatment Working Group



Guidance Regarding Use of Remdesivir

On October 22, 2020, the FDA approved remdesivir for use in adults and pediatric patients

(≥ 12 years and weighing at least 40 kg) with COVID-19 requiring hospitalization. The Emergency Use Authorization granted on May 1, 2020 is still in effect for pediatric patients

(< 12 years old and weighing at least 3.5 kg). Remdesivir reduced the time to recovery by 29% compared with placebo (10 v 15 days) among patients with COVID-19 infection. Remdesivir appears to have the most benefit in patients who have low-flow oxygen requirements and has no benefit for individuals who are mechanically ventilated >48 hours.

Data suggest that a 5-day course is non-inferior to a 10-day course, and as such we recommend universal 5-day courses. **Any longer courses of remdesivir require an ID consult.**

At this time, we recommend remdesivir for patients meeting the below criteria:

- 1. Positive SARS-CoV-2 RT-PCR result within a week of admission
- 2. Symptom onset within 14 days prior to initiation of treatment
- 3. Hypoxia defined as:
 - a) $SpO_2 \leq 94\%$ on room air OR
 - b) Requiring supplemental oxygen (low-flow/highflow) OR
 - c) Mechanically ventilated <48 hours
- 4. ALT < 400 (10x ULN) prior to initiation

Patients who are not hypoxic but high risk (anticipatory chemotherapy, lung transplant) may be considered on a case by case basis. Patients representing the Essential Critical Workforce, as defined by California Executive Order N-33-20, could be considered for higher prioritization.

If remdesivir is given via EUA (for pediatrics < 12 years or weighing 3.5-40kg), a patient fact sheet must be reviewed with the patient/caregiver prior to use.

If supply becomes severely limited (i.e. when demand > supply), those with terminal illness will not be considered. Modifiers for the definition of terminal illness considered include:

- Clinical Frailty Score ≥8
- Advanced progressive incurable neurologic disease requiring ventilatory support or Rankin scale ≥5
- Metastatic cancer with expected survival ≤1 year despite treatment



Guidance Regarding Use of COVID-19 Convalescent Plasma (CCP) via Emergency Use Authorization

On August 23, 2020, the Federal Drug Administration (FDA) issued an Emergency Use Authorization (EUA) for the use of COVID-19 convalescent plasma (CCP) as a passive immune therapy for the treatment of <u>hospitalized</u> patients with COVID-19.

CCP is human plasma collected by FDA registered blood establishments from individuals who have recovered from a COVID-19 infection and whose plasma contains anti SARS-CoV-2 antibodies. These donors must meet all standard donor eligibility requirements. Each donor/CCP unit undergoes testing for anti SARS-CoV-2 antibody titers to determine that there are sufficient antibody levels before being released into inventory.

Current observational data suggest that the largest clinical benefit is associated with high-titer units of CCP administered early in the course of disease (within 72 hours of diagnosis). CCP units at UCLA are tested and meet minimum titers as required by the FDA guidance. However, these titer determinations were not performed using the EUA assay and therefore will be labelled with a "low titer" tag to meet the EUA specifications.

Certain clinical trials will exclude patients if they have received CCP and it is important to address all the possible therapeutic regimens available at this time.

At this time, we recommend considering the administration of 1-2 CCP units administered <u>within 72 hours of diagnosis</u> for select hospitalized patients. In select patients with profound cell mediated immunodeficiencies (such as those who have received a bone marrow transplant or with chronic lymphocytic leukemia), CCP can be considered.

Consultation with an Infectious Disease physician and their approval is required for CCP orders. Dosage considerations should be made based on patient weight/TBV (if >85 kg, consider 2 units of CCP). Patients with impaired cardiac function and heart failure may require a smaller volume or transfusion over a longer period. CCP may be contraindicated in patients with a history of severe allergic reactions or anaphylaxis to plasma transfusion.

Prior to CCP order entry and transfusion, the standard Consent to Blood Transfusion must be obtained. The patient must be provided with the state required brochure "A Patient's Guide to Blood Transfusion" per hospital policy HS1320, and the "Fact Sheet for Patients and Parents/Caregivers, Emergency Use Authorization (EUA) of COVID-19 Convalescent Plasma for Treatment of COVID-19 in Hospitalized Patients." The consent and accompanying documents are available on the Forms Portal.

Patients undergoing CCP transfusion should be monitored closely for transfusion reactions as per UCLA Health Transfusion Policy 1338. Any adverse reactions associated with CCP transfusion should be reported to the blood bank.

For more information or questions, please contact Alyssa Ziman, MD at 310-267-8090 or call the Ronald Reagan UCLA Blood Bank at 310-267-8150.



Table 3. Dosing of Specific Therapeutics

Agent	Dosing	Monitoring
Remdesivir	200mg IV x1, followed by 100mg q24h for duration of hospitalization; 5 days recommended Pediatric Dosing: For potients weighing 3.5 kg, x40 kg;	Self-limiting, reversible hepatotoxicity has been observed, which resolved after therapy cessation. Nephrotoxicity has been observed in preclinical studies.
	For patients weighing 3.5 kg - <40 kg: Loading dose: 5 mg/kg/dose IV x 1 dose (max 200 mg) Maintenance dose: 2.5 mg/kg/dose IV Q24H (max 100 mg); 5 days recommended For patients weighing 40kg or higher: 200mg IV x1, followed by 100mg q24h for duration of hospitalization; 5 days recommended	
Convalescent Plasma	1 unit, if <85kg 2 units, if >85kg	TACO, TRALI
Dexamethasone	6mg PO/IV daily for up to 10 days Pediatric Dosing: 0.15mg/kg (max 6 mg) PO/IV daily for up to 10 days	Hyperglycemia, neuropsychiatric effects (insomnia, irritability), heartburn, impaired wound healing, fluid retention
Baricitinib	4 mg PO daily for up to 14 days maximum eGFR 30-60 mL/min: 2 mg PO daily eGFR >15 to <30 mL/min: 1 mg PO daily	Superinfection, VTE, GI perforation, TB activation
Tocilizumab	8 mg/kg TBW/Adj BW (obese), max 800mg x 1 dose	GI perforation, superinfection, hepatic injury, TB activation
Sarilumab	400 mg x 1 dose	GI perforation, superinfection, hepatic injury, TB activation

Drugs for which there is insufficient or no data:

Nitazoxanide, ivermectin, lopinvavir/ritonavir, favipiravir, colchicine. Hydroxychloroquine is not recommended due to data that suggest no benefit.

Table 4. Drugs in Pregnancy

Class	Agents	Data
Antivirals	Remdesivir	Data limited for remdesivir, likely safe
Corticosteroids	Hydrocortisone, Prednisone, Dexamethasone	Safe, for refractory shock per ICU indications Use of Dexamethasone should be discussed with MFM, but is currently recommended



		Dose may be adjusted for fetal benefit in case of impending delivery
Convalescent plasma	Convalescent plasma	Limited data, likely okay to use, not excluded from study
Monoclonal Antibody Therapy	Casirivimab/imdevimab	No data, needs consultation from MFM
, , , ,		Limit to only high risk patients, seronegative patients
II-6 receptor blocker	Tocilizumab	Limited data, MFM consultation, monitoring of infant at birth





Section 4. Consultations to consider specifically for patients admitted due to COVID-19

Pulmonary/ICU	Should be consulted for clinical deterioration
Mental Health	Many patients in isolation may experience worsening of their underlying psychiatric illness
and Psychiatric	Urgent consult needed in patients expressing suicidal ideation, hallucination, psychosis, or agitation.
Care	Consult for other non-emergent issues: depression, anxiety
	 Ensure at least PHQ-2 (if not PHQ-9, GAD-7) are administered within 3 days of admission and weekly thereafter
	Consider video/telephone consult, if needed
Palliative care	Early involvement for patients with significant frailty, elderly, difficulty with iADLs, ADLs to assess goals of care
	Prolonged ICU stay
	Emotional, spiritual and symptomatic support at the end of life for family/patient
	Ethical decision-making
	Consider video/telephone consult, if needed
	For SNF or Outpatient assistance Email COVIDPalliativeCare@mednet.ucla.edu or page the team at 89552
Cardiology	For ICU patients, obtain TTE as needed
	Monitor for CAD, cardiomyopathy with labs as above
Neurology	Scattered case reports and autopsy findings suggest that COVID-19 patients may uncommonly develop two neurologic complications that can exacerbate respiratory difficulty and cause inability to wean from a ventilator: A) Guillain-Barre syndrome – peripheral autoimmune disorder causing weakness/paralysis of all limbs and respiratory muscles; B) Bickerstaff's encephalitis – inflammation of the brainstem, including disruption of centers for respiratory drive.
	To screen grossly for these conditions in patients with difficulty weaning, look for:
	1) Weakness of all 4 limbs with reduced/absent reflexes
	2) Severely impaired ability to move the eyes
	Because presence of these signs might herald a change in management, or altered (CNS dosing) of COVID-19 trial drugs, for more detailed screening and for management recommendations, please consult Neurology.
Addiction	Assess substance use history
medicine	Consult in patients with history of opioid, methamphetamine or cocaine use disorders
	Consider video/telephone consult, if needed
Chaplain,	Should not see patient in person
rabbi, spiritual	May provide support for psychosocial, spiritual and existential suffering in patients with a life-limiting or life-threatening illness
services	



Section 5. Discharging patients home/to SNFs

LA County DPH recommends that patients can be taken off home isolation 10 days after the onset of symptoms plus 24 hours without fevers and fever reducing medicines for mild-moderate disease, and 20 days after the onset of symptoms plus 24 hours without fevers and fever reducing medicines for severe-critical disease. Those who are severely immunocompromised should be on isolation for a minimum of 20 days, and duration of isolation should be discussed with ID consultation.

Similar to the general population, patients should be advised to continue masking when they are in public or coming to clinic. This is especially true if patients continue to have some respiratory symptoms including cough.

These recommendations are based on data that suggest that even though PCRs may be positive for a prolonged period of time (>30d), viable virus is generally not seen in the nasopharynx or throat after 8 days and that the period of infectivity is the greatest in the 2-3 days before or after symptom onset.

For patients who live in congregate settings including skilled nursing facilities, additional precautions are used. Patients should be kept on enhanced droplet isolation 20 days after the onset of symptoms plus 24 hours without fevers and fever reducing medicines. Alternatively, patients may be able to be taken off isolation with 2 negative swabs separated 24 hours apart.

Please see isolation and quarantine guidelines: http://publichealth.lacounty.gov/acd/ncorona2019/isolationquarantine/

Please see guidance for transferring to SNFs: http://publichealth.lacounty.gov/acd/NCorona2019/InterfacilityTransferRules.htm

For plasma donation, please see this website: https://www.uclahealth.org/gotblood/covid-19-plasma-donation



References

Beigel JH, Tomashek KM, Dodd LE, Mehta AK, Zingman BS, Kalil AC, Hohmann E, Chu HY, Luetkemeyer A, Kline S, Lopez de Castilla D, Finberg RW, Dierberg K, Tapson V, Hsieh L, Patterson TF, Paredes R, Sweeney DA, Short WR, Touloumi G, Lye DC, Ohmagari N, Oh MD, Ruiz-Palacios GM, Benfield T, Fätkenheuer G, Kortepeter MG, Atmar RL, Creech CB, Lundgren J, Babiker AG, Pett S, Neaton JD, Burgess TH, Bonnett T, Green M, Makowski M, Osinusi A, Nayak S, Lane HC; ACTT-1 Study Group Members. Remdesivir for the Treatment of Covid-19 - Final Report. N Engl J Med. 2020 Nov 5;383(19):1813-1826. doi: 10.1056/NEJMoa2007764. Epub 2020 Oct 8. PMID: 32445440; PMCID: PMC7262788.

RECOVERY Collaborative Group, Horby P, Lim WS, Emberson JR, Mafham M, Bell JL, Linsell L, Staplin N, Brightling C, Ustianowski A, Elmahi E, Prudon B, Green C, Felton T, Chadwick D, Rege K, Fegan C, Chappell LC, Faust SN, Jaki T, Jeffery K, Montgomery A, Rowan K, Juszczak E, Baillie JK, Haynes R, Landray MJ. Dexamethasone in Hospitalized Patients with Covid-19. N Engl J Med. 2021 Feb 25;384(8):693-704. doi: 10.1056/NEJMoa2021436. Epub 2020 Jul 17. PMID: 32678530; PMCID: PMC7383595.

https://www.covid19treatmentguidelines.nih.gov/

https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-revokes-emergency-use-authorizationchloroquine-and

Guan, W and colleagues. Clinical Characteristics of Novel Coronavirus Disease 2019 in China. NEJM. Feb 28, 2020

Zhou, F and colleagues Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet, March 11, 2020

Goyal, P and colleagues. Clincal Characteristics of Covid-19 in New York City. NEJM April 17, 2020. Langford BJ, So M, Raybardhan S, Leung V, Westwood D, MacFadden DR, Soucy JR, Daneman N. Bacterial co-infection and secondary infection in patients with COVID-19: a living rapid review and meta-analysis. Clin Microbiol Infect. 2020 Dec;26(12):1622-1629. doi: 10.1016/j.cmi.2020.07.016. Epub 2020 Jul 22. PMID: 32711058.

van Berkel M, Kox M, Frenzel T, Pickkers P, Schouten J; RCI-COVID-19 study group. Biomarkers for antimicrobial stewardship: a reappraisal in COVID-19 times? Crit Care. 2020 Oct 6;24(1):600. doi: 10.1186/s13054-020-03291-w. PMID: 33023606; PMCID: PMC7538269.

Ji, Dong and colleagues. Prediction of Progression Risk in Patients with COVID-19 Pneumonia: the CALL Score. Clinical Infect Dis. 9 April 2020.

Cao, B. and colleagues. "A Trial of Lopinavir-Ritonavir in Adult Patients Hospitalized with COVID-19." NEJM March 18 2020

Wolfel, R and colleagues. "Virological assessment of hospitalized patients with COVID-19" Nature April 1 2020

He, Xi. Temporal dynamics in viral shedding and transmissibility of COVID-19. Nature Medicine, April 15, 2020

https://www.fda.gov/news-events/press-announcements/fda-approves-first-treatment-covid-19

Goldman JD, Lye DCB, Hui DS, et al. Remdesivir for 5 or 10 Days in Patients with Severe Covid-19 [published online ahead of print, 2020 May 27]. N Engl J Med. 2020;NEJMoa2015301. doi:10.1056/NEJMoa201530

Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19. Infecious Diseases Society of America. Available at https://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/. Accessed [12/8/20].

Kalil A, Patterson T, Mehta A et al. Baricitinib plus remdesivir for the treatment of hospitalized adults with Covid-19. New Eng J Med 2020 DOI: 10.1056/NEJMoa2031994

COVID-19 Treatment Guidelines Panel. Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. National Institutes of Health. Available at https://www.covid19treatmentquidelines.nih.gov/. Accessed [12/8/20].

Chen P, Nirula A, Heller B, Gottlieb RL, Boscia J, Morris J, Huhn G, Cardona J, Mocherla B, Stosor V, Shawa I, Adams AC, Van Naarden J, Custer KL, Shen L, Durante M, Oakley G, Schade AE, Sabo J, Patel DR, Klekotka P, Skovronsky DM; BLAZE-1 Investigators. SARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with Covid-19. N Engl J Med. 2020 Oct 28:NEJMoa2029849. doi: 10.1056/NEJMoa2029849. Epub ahead of print. PMID: 33113295; PMCID: PMC7646625.

Weinreich DM, Sivapalasingam S, Norton T, Ali S, Gao H, Bhore R, Musser BJ, Soo Y, Rofail D, Im J, Perry C, Pan C, Hosain R, Mahmood A, Davis JD, Turner KC, Hooper AT, Hamilton JD, Baum A, Kyratsous CA, Kim Y, Cook A, Kampman W, Kohli A, Sachdeva Y, Graber X, Kowal B, DiCioccio T, Stahl N, Lipsich L, Braunstein N, Herman G, Yancopoulos GD; Trial Investigators. REGN-COV2, a



Neutralizing Antibody Cocktail, in Outpatients with Covid-19. N Engl J Med. 2020 Dec 17. doi: 10.1056/NEJMoa2035002.

Gottlieb RL, Nirula A, Chen P, et al. Effect of Bamlanivimab as Monotherapy or in Combination With Etesevimab on Viral Load in Patients With Mild to Moderate COVID-19: A Randomized Clinical Trial. JAMA. 2021;325(7):632–644. doi:10.1001/jama.2021.0202

Salama C, Han J, Yau L, Reiss WG, Kramer B, Neidhart JD, Criner GJ, Kaplan-Lewis E, Baden R, Pandit L, Cameron ML, Garcia-Diaz J, Chávez V, Mekebeb-Reuter M, Lima de Menezes F, Shah R, González-Lara MF, Assman B, Freedman J, Mohan SV. Tocilizumab in Patients Hospitalized with Covid-19 Pneumonia. N Engl J Med. 2021 Jan 7;384(1):20-30. doi: 10.1056/NEJMoa2030340. Epub 2020 Dec 17. PMID: 33332779; PMCID: PMC7781101.

Marconi, V and colleagues. Baricitinib Plus Standard of Care for Hospitalized Adults with Covid-19. https://www.medrxiv.org/content/10.1101/2021.04.30.21255934v1.full.pdf