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 confirmed outpatient cases 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: Hannah Mansky, Christina Shin

During after-hours/weekends
--Kerry Menmuir, Director of Inpatient Pharmacy
--Jess DeJesus, Chief of Pharmacy

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
From December 22, 2020-March 15, 2021, Infectious Disease Consultation will not be required.

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. It is unclear whether there is an interaction between remdesivir and dexamethasone at this time.

All other therapeutic agents at this time remain experimental.

For a list of open inpatient and outpatient trials, please see this website. Therapeutic rationale for trials is listed in this document.

Please also see DHHS guidance at: https://www.covid19treatmentguidelines.nih.gov/whats-new/
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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 >35, 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.
## Section 2. Diagnostic Testing for Patients with Suspected or Confirmed COVID-19

### Table 1. Diagnostic Testing

<table>
<thead>
<tr>
<th>Diagnostic Testing</th>
<th>Recommended labs on admission</th>
<th>Recommended daily labs (can be discontinued at primary team’s discretion if no longer needed):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory testing</td>
<td>• COVID 19 NP PCR recommended as first test</td>
<td>• CBC with diff (trend total lymphocyte count)</td>
</tr>
<tr>
<td></td>
<td>• Repeat NP once if high suspicion and concern for inadequate specimen collection</td>
<td>• CMP</td>
</tr>
<tr>
<td></td>
<td>• Send COVID-19 sputum if high suspicion, repeat COVID-19 NP negative and productive cough</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 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)</td>
<td></td>
</tr>
<tr>
<td>Baseline bloodwork</td>
<td>• CBC with diff and CMP</td>
<td></td>
</tr>
<tr>
<td>In anticipation of using dexamethasone, consider</td>
<td>• QFT-gold</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cocci EIA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hepatitis BsAg, sAb, cAb, HCV Ab</td>
<td></td>
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<tr>
<td></td>
<td>• Strongyloides Ab</td>
<td></td>
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<tr>
<td></td>
<td>• HIV Ab</td>
<td></td>
</tr>
<tr>
<td>If worsening hypoxemia or in respiratory distress: (may be repeated q3 days if abnormal or with clinical deterioration):</td>
<td>• D-dimer, CRP, LDH, Ferritin</td>
<td>If clinically indicated: For acute kidney injury (i.e. serum creatinine &gt;0.3 above baseline) urinalysis with microscopy spot urine protein:creatinine</td>
</tr>
<tr>
<td></td>
<td>• Sputum studies (fungal, bacterial)</td>
<td>For cardiac disease/cardiomyopathy</td>
</tr>
<tr>
<td></td>
<td>• Blood cultures if other signs of sepsis</td>
<td>CK-MB</td>
</tr>
<tr>
<td></td>
<td>• BNP</td>
<td>CK</td>
</tr>
<tr>
<td>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%)</td>
<td></td>
<td>Troponin-I</td>
</tr>
<tr>
<td>Suggested labs for immunocompromised patients if evidence of clinical worsening:</td>
<td>• serum beta-d-glucan</td>
<td>BNP</td>
</tr>
<tr>
<td></td>
<td>• aspergillus EIA</td>
<td>TTE if BNP elevated or other clinical concern</td>
</tr>
<tr>
<td></td>
<td>• serum cryptococcus ag</td>
<td>EKG</td>
</tr>
<tr>
<td></td>
<td>• cocci EIA</td>
<td>Continuous telemetry</td>
</tr>
</tbody>
</table>
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 could 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.
**Section 3. Treatment Guidance for COVID-19 Positive Patients**

**NOTE:** Supportive care is crucial for management of cases

Table 2. General Principles of Treatment

<table>
<thead>
<tr>
<th>All COVID-19 Positive Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Remdesivir should be considered for all eligible patients (see eligibility)</td>
</tr>
<tr>
<td>● Enrollment in trials should be done sequentially</td>
</tr>
<tr>
<td>● Monitor high risk patients: including those who are immunosuppressed and have had Lung Transplant/BMT/other SOT (All transplant patients should get ID consult)</td>
</tr>
<tr>
<td>● ACC/AHA states do not stop ACEi/ARB</td>
</tr>
<tr>
<td>● WHO states do not stop NSAIDS.</td>
</tr>
<tr>
<td>● Screen for drug interaction via Liverpool chart</td>
</tr>
<tr>
<td>● Place all patients on pharmacologic VTE prophylaxis such as lovenox or heparin SC if no contraindications. Otherwise place on mechanical VTE prophylaxis such as TEDs/SCDs. (American Society of Hematology)</td>
</tr>
</tbody>
</table>

**Outpatient care**

COVID+, clinically stable

<table>
<thead>
<tr>
<th>Outpatient care</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Advise patients on self-isolation</td>
</tr>
<tr>
<td>● Outpatient trials are available (Convalescent Plasma, monoclonal antibody)</td>
</tr>
<tr>
<td>● Monoclonal antibodies are available for high-risk patients, see EUA guidance</td>
</tr>
<tr>
<td>● Other repurposed drugs such as fluvoxamine are not recommended outside clinical trials. Clinicians may consider <a href="https://stopcovidtrial.wustl.edu/">https://stopcovidtrial.wustl.edu/</a></td>
</tr>
</tbody>
</table>

**Inpatient - Floor level care**

Low risk - SpO2 >94% on room air

Moderate risk, SpO2≤94% but stable

<table>
<thead>
<tr>
<th>Inpatient - Floor level care</th>
</tr>
</thead>
<tbody>
<tr>
<td>● If antibiotics are started, reassess need based on cultures/clinical condition</td>
</tr>
<tr>
<td>● Consider remdesivir if SpO2&lt;94%</td>
</tr>
<tr>
<td>● Consult ID for transplant patients for evaluation of treatment options</td>
</tr>
<tr>
<td>● Certain trials or compassionate use agents may be considered</td>
</tr>
<tr>
<td>● Dexamethasone is NOT recommended for patients who do not require supplemental oxygen</td>
</tr>
</tbody>
</table>

**Step-Down/ICU level care - Consult Infectious Diseases and Pulmonology**

Moderate-High Risk

<table>
<thead>
<tr>
<th>Step-Down/ICU level care - Consult Infectious Diseases and Pulmonology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate-High Risk SpO2&lt;94% on RA AND requiring increased supplemental O2 OR RR &gt; 30 OR PaO2/FiO2 ≤ 300mmHg OR Mechanical ventilation</td>
</tr>
<tr>
<td>● Consider Remdesivir, review eligibility criteria</td>
</tr>
<tr>
<td>● Consider dexamethasone 6mg po/IV daily for up to 10 days if progressive oxygen requirements and in particular mechanical ventilation unless contraindications</td>
</tr>
<tr>
<td>● Data are not known regarding interaction of remdesivir and dexamethasone at this time</td>
</tr>
<tr>
<td>● At this time, we are not formally recommending other bioequivalent steroids</td>
</tr>
<tr>
<td>● Routine supportive care, including blood and respiratory cultures and antibiotics as clinically indicated</td>
</tr>
</tbody>
</table>

**If refractory hypotension, increased pressor requirement**

<table>
<thead>
<tr>
<th>If refractory hypotension, increased pressor requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please obtain blood cultures, sputum cultures and chest x-ray as needed</td>
</tr>
<tr>
<td>Consider TTE</td>
</tr>
<tr>
<td>Consider pulmonary embolism on differential, CTA PE protocol</td>
</tr>
<tr>
<td>Empiric broad spectrum antibiotics as appropriate</td>
</tr>
<tr>
<td>Consider Cytokine Release Syndrome as a diagnosis of exclusion and with appropriate biomarkers</td>
</tr>
</tbody>
</table>
Guidance Regarding Use of Monoclonal Antibodies via Emergency Use Authorization

In November 2020, the FDA issued emergency use authorizations (EUA) for the use of the two investigational SARS-CoV2 monoclonal antibody products: a single monoclonal antibody called bamlanivimab (LY-CoV555) manufactured by Eli Lilly and Company (Lilly), and a combination monoclonal antibody product called casirivimab and imdevimab manufactured by Regeneron. The drugs can be considered for the treatment of high-risk, non-hospitalized patients with mild to moderate Covid-19, who do not require supplemental oxygen therapy or additional oxygen therapy above their baseline.

To date, only one study (BLAZE-1) has been published on bamlanivimab and no studies have been published to date on casirivimab/imdevimab. The primary outcome for the BLAZE-1 trial was reduction in viral load at 11 days from the date of the positive test. The study did not find this to be a meaningful outcome measure since all patients had a significant decline in their viral load by day 11. The study did demonstrate an absolute reduction in incidence of hospitalizations and emergency room (ER) visits from 6.3% to 1.6%. Adverse events were rare but included nausea (3%), dizziness, (4%), headache, (3%) hypersensitivity reactions (1%), and diarrhea (1%).

Per the REGN-COV-2 study, casirivimab and imdevimab when given together reduced the viral load by day 7 and reduced hospitalizations and ER visits compared with the placebo. The effect was most notable for high-risk groups, with an absolute reduction in hospitalizations and ER from 9% to 3%. Similar adverse events to bamlanivimab were noted. Given the available limited data, two options are available for use through the EUA:

- a single infusion of bamlanivimab 700mg IV over 60 minutes OR
- a single infusion of casirivimab 1200mg/imdevimab 1200mg for a total of 2400mg IV over 60 minutes

The available monoclonal antibodies may be considered if the following criteria are met for patients with mild-moderate symptoms who are not currently hospitalized:

- Age >18
- Not requiring any supplemental O2 or need an increase from their baseline O2
- Confirmed SARS-CoV2 positive test <7 days prior
- Symptom onset <7 days prior
- High-risk category:
  - Age >65 years
  - Age >55 years with cardiovascular disease or hypertension or chronic lung disease
  - Immunocompromised condition or on immunosuppressive medication
  - Diabetes Mellitus
  - Chronic Kidney Disease (CrCl <60 as measured by Cockcroft Gault for > 3 months)
  - Obesity (BMI >35)

Individuals coming from a disadvantaged socioeconomic background should be strongly considered given their increased risk of mortality. Please note the data on the benefit of this drug remain limited and per national guidance, these drugs should not be considered standard of care and are purely investigational. 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 either bamlanivimab or casirivimab/imdevimab. Please do not refer patients to the ER to receive these drugs given our current surge.
- Other patients may be able to receive either drug at our designated infusion center after December 10, 2020. 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.
- Please review the patient (Spanish) and provider fact sheets for bamlanivimab and the patient (Spanish) and provider fact sheets for casirivimab/imedivimab. All patients will be given a fact sheet prior to drug administration.

Given that the demand for these drugs will 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 9 am and at 12 pm on each calendar day.

We have also included information provided by Coram, a CVS specialty infusion service, which has been designated by HHS to offer treatment to a small number of patients in Los Angeles County. Their dedicated intake team can be contacted at 866-316-0264 from Mon-Fri 8 am -5 pm.

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.

Hospitalized patients with symptoms may be eligible for remdesivir or other clinical trials. Please contact the infectious disease consultant on call.
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.

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) \( \text{SpO}_2 \leq 94\% \) 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.

**Remdesivir temporarily does not require approval for use by an infectious diseases attending as long as the above criteria are met. This status will be reassessed on March 15, 2021.**

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 Baricitinib via Emergency Use Authorization

On November 19, 2020, the FDA issued an emergency use authorization for the use of the Janus Kinase (JAK) inhibitor baricitinib (Oluminant) manufactured by Eli Lilly and Company (Lilly) in combination with remdesivir to treat COVID-19 in hospitalized adults and pediatric patients ≥ 2 years of age requiring supplemental oxygen, invasive mechanical ventilation, or ECMO.

Rationale for baricitinib as a therapeutic agent in Covid-19 is two-fold. First, through inhibiting JAK-mediated cytokine signaling, baricitinib may reduce risk of hyperinflammatory syndrome and ARDS in Covid-19. Additionally, baricitinib inhibits two proteins (AAK1 and GAK) that are thought to facilitate receptor-mediated endocystosis of SARS-CoV-2.

In the second phase of the Adaptive Covid-19 Treatment Trial (ACTT-2), baricitinib 4 mg daily for 14 days in addition to remdesivir was compared to placebo. The primary outcome was reduction in time to clinical recovery (TTCR) defined as patients discharged with or without limitations and hospitalized not requiring ongoing medical care. Baricitinib significantly reduced median TTCR (7 vs. 8 days, RR 1.16; 95%CI 1.01-1.32), but no significant difference was observed in key secondary endpoints including median length of stay (8 vs. 8 days), 14-day mortality (HR 0.54; 95%CI 0.23-1.28), or 28-day mortality (HR 0.65; 95%CI 0.39-1.09). The most prominent benefit in TTCR was observed in patients requiring high-flow or non-invasive ventilation oxygen support (RR 1.51; 95%CI 1.1-2.08).

Baricitinib was well tolerated with lower incidence of adverse events (AEs) observed in the baricitinib arm than placebo (41% vs. 48%) and serious AEs (15.2% vs. 20.2%). Notably, rates of venous thromboembolism (4% vs. 3%) and infections (6% vs. 10%) were comparable between arms.

Current guidance from the National Institutes of Health (NIH) Covid-19 Treatment Guidelines recommend against the use of JAK Inhibitors for treatment of Covid-19 except in a clinical trial, which will be available here at UCLA through enrollment in ACTT-4 (remdesivir/baricitinib vs. remdesivir/dexamethasone). Please contact the study coordinator Meilani Cayabyab, mgcayabyab@mednet.ucla.edu for more details about this.

Data are limited to assess benefits of baricitinib therapy in Covid-19. Currently, baricitinib use for Covid-19 will be restricted to enrollment in the above clinical trial(s).
Guidance Regarding Use of COVID-19 Convalescent Plasma (CCP) via Emergency Use Authorization


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.

Please note that the data available to date on CCP are observational data. We do not have randomized clinical trial data, nor do we have any data to suggest that CCP is superior or inferior to any other treatment that is being considered at this time. 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. The only therapies that have been shown to have benefit in randomized trials include remdesivir and dexamethasone.

At this time, we recommend considering the administration of 1-2 CCP units administered within 72 hours of diagnosis for select hospitalized patients.

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.

CCP is still an unproven treatment that needs to be evaluated under RCTs. For patients not admitted to the hospital, UCLA is currently enrolling patients in several RCTs for prophylaxis and for treatment of mild disease.

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.
Summary of Therapeutic Agents (for full discussion of trial inclusion and exclusion criteria)

Remdesivir
Nucleoside analog binds to RNA-dependent RNA polymerase (chain terminator). See above. FDA approved in adults and pediatrics > 12 years old and > 40kg, available via EUA for pediatrics < 12 years old and weighing at least 3.5 kg OR weighing 3.5 kg to < 40 kg.

Current clinical trials:
NIAID ACTT-4 double blind, RDV + dexamethasone v RDV + baricitinib 1:1 (Otto Yang, PI)
Phase 2 study in children (Jaime Deville, PI)

Dexamethasone
Dexamethasone is a corticosteroid that has been studied as part of the RECOVERY trial, a large randomized trial based in the United Kingdom and has demonstrated a 35% reduction in mortality among mechanically ventilated patients (29.0% in dexamethasone arm 40.7% in the control arm [RR 0.65; 95% CI, 0.51–0.82, \( P < 0.001 \)]) and 20% reduction in mortality among patients with supplemental oxygen (21.5% dexamethasone-treated v 25.0% in the control arm [RR 0.80; 95% CI, 0.70–0.92, \( P = 0.002 \)]).

Convalescent Plasma
Can be considered in early infection, within 3 days of diagnosis.

Available via Emergency Use Authorization

Please see this website for up to date information on available trials.
### Table 3. Dosing of Specific Therapeutics

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dosing</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remdesivir</td>
<td>200mg IV x1, followed by 100mg q24h for duration of hospitalization; 5 days recommended</td>
<td>Self-limiting, reversible hepatotoxicity has been observed, which resolved after therapy cessation. Nephrotoxicity has been observed in preclinical studies.</td>
</tr>
<tr>
<td></td>
<td><strong>Pediatric Dosing:</strong>  For patients weighing 3.5 kg - &lt;40 kg: Loading dose: 5 mg/kg/dose IV x 1 dose (max 200 mg)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance dose: 2.5 mg/kg/dose IV Q24H (max 100 mg); 5 days recommended</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>For patients weighing 40kg or higher:</strong> 200mg IV x1, followed by 100mg q24h for duration of hospitalization; 5 days recommended</td>
<td></td>
</tr>
<tr>
<td>Convalescent Plasma</td>
<td>1 unit, if &lt;85kg 2 units, if &gt;85kg</td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>6mg PO/IV daily for up to 10 days</td>
<td>Hyperglycemia, neuropsychiatric effects (insomnia, irritability), heartburn, impaired wound healing, fluid retention</td>
</tr>
<tr>
<td></td>
<td><strong>Pediatric Dosing:</strong> 0.15mg/kg (max 6 mg) PO/IV daily for up to 10 days</td>
<td></td>
</tr>
</tbody>
</table>

**Drugs for which there is insufficient or no data:**
Nitazoxanide, ivermectin, lopinavir/ritonavir, favipiravir. Hydroxychloroquine is not recommended due to data that suggest no benefit.

### Table 4. Drugs in Pregnancy

<table>
<thead>
<tr>
<th>Class</th>
<th>Agents</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antivirals</td>
<td>Remdesivir</td>
<td>Data limited for remdesivir, likely safe</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Hydrocortisone, Prednisone</td>
<td>Safe, for refractory shock per ICU indications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of Dexamethasone should be discussed with MFM</td>
</tr>
<tr>
<td>Convalescent plasma</td>
<td>Convalescent plasma</td>
<td>Limited data, likely okay to use, not excluded from study</td>
</tr>
</tbody>
</table>
### Section 4. Consultations to consider specifically for patients admitted due to COVID-19

<table>
<thead>
<tr>
<th>Pulmonary/ICU</th>
<th>Should be consulted for clinical deterioration</th>
</tr>
</thead>
</table>
| Mental Health and Psychiatric Care | - Many patients in isolation may experience worsening of their underlying psychiatric illness  
- Urgent consult needed in patients expressing suicidal ideation, hallucination, psychosis, or agitation.  
- 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 |
| 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 medicine | - Assess substance use history  
- Consult in patients with history of opioid, methamphetamine or cocaine use disorders  
- Consider video/telephone consult, if needed |
| Chaplain, rabbi, spiritual services | - Should not see patient in person  
- May provide support for psychosocial, spiritual and existential suffering in patients with a life-limiting or life-threatening illness |

For SNF or Outpatient assistance Email COVIDPalliativeCare@mednet.ucla.edu or page the team at 89552
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.

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