CONSIDERATIONS FOR PHARMACOLOGIC TREATMENTS OF PATIENTS WITH CONSUMED COVID-19 TESTING FOR THE PICU & GENERAL INPATIENT UNIT (GIPU)
(This pathway will be reassessed & updated regularly based on experience & emerging data)

Pediatric Patient With Confirmed + COVID-19 Testing
Provide supportive care or acetaminophen (NSAID) per clinician's discretion & consider COVID-19 pharmacologic treatment criteria listed below for the GIU & PICU

GIU Criteria
- Requiring ≤2 L/min NC O₂ for 24 hrs without being able to wear OR
- Worsening clinical trajectory with increasing oxygen support within 24 hrs of starting O₂

PICU Criteria
- Requiring
  - Non-invasive vent support
  - Mechanical ventilation OR
  - ECMO

Contact Pediatric COVID-19 Treatment Team (PCTT) if Considering Treatment
(Place EPIC consult order if PCTT - Available from 8am-5pm, ID follow available for overnight consults & weekends)

If caregiver & team agree to therapy
Obtain Baseline EKG & Labwork:
- CBC*, CRP*, Procalcitonin*, Ferritin*, LDH, Troponin, D-Dimer, Fibrinogen, ESR, PT/PTT, cytokine panel

Provide Recommended Pharmacologic Treatment
- For GIU: Repeat labs q 24-hrs if patient not clinically improving
- For PICU: Repeat labs q 24-hrs if continues to require PICU support
- For Both Units:
  - Obtain q 48 hour cytokine panel if meets criteria for q 24 hr labs listed above
  - Other monitoring with medications (EKGs, additional labwork, etc.)

Informed verbal or written consent is required for all investigational therapies and should be obtained by either PCTT or by the primary team

For Both PICU & GIU:
May also consider treatment for patients with no oxygen requirement (or lesser degree of resp. support) who have fever and respiratory distress AND a history of:
- Congenital cardiac disease, chronic lung disease, immunosuppression and/or other concerning illness

Yale SCHOOL OF MEDICINE
• For supportive care, it should be safe to use both acetaminophen and NSAIDs on a prn basis per clinician discretion.

• There is no firm data to show that NSAIDs worsen the course of COVID-19:
  ◦ There is a theoretical risk given the fact that COVID-19 virus uses ACE2 to enter cells and NSAIDs (and ACE inhibitors) may increase ACE2 circulation.
  ◦ However, there is some data to show other coronaviruses that also use ACE2, like SARS, have reduced viral replication with NSAIDs (indomethacin).
  ◦ The WHO and FDA do not recommend against the use of NSAIDs for COVID-19 infections, but will be further investigating the issue - we will update our recs accordingly.
The Pediatric COVID-19 Treatment Team (PCTT) is a multidisciplinary team that will meet to review use of pharmacologic treatment on a case-by-case basis. Members will meet with caregivers and patients/families to review the risks/benefits, review existing evidence and obtain informed consent for use if the decision is reached to pursue pharmacologic therapy.

PCTT Members:
- Carlos Oliveira (ID, Chair)
- Michelle Rychalsky (Pharmacy, Co-Chair)
- Jaspreet Loyal (Hospitalist Service, member)
- Adam Berkwitt (Hospitalist Service, member)
- Ian Ferguson (Rheumatology, member)
- Josep Panisello (PICU, member)
- Tom Murray (ID, member)
- Elissa Zirinsky (ID, member)
- ID service team (Fellow and Attending, revolving members)
- Elijah Paintsil (ID, member)
- Rebecca Ciaburri (Quality/Safety, member)
- Matthew Grossman (Quality/Safety, member)
## RECOMMENDED 1̊LINE PHARMACOLOGIC TREATMENT FOR COVID-19

<table>
<thead>
<tr>
<th>1̊LINE AGENT</th>
<th>DOSING</th>
<th>EXCLUSION CRITERIA</th>
<th>MONITORING</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
</table>
| Hydroxychloroquine (HCQ) | • 6.5mg/kg/dose q 12 hrs x 1 day (Max 400mg/dose)  
• Then 3.75-2.5mg/kg/dose q 12 hrs x 4 days* (Max 200mg/dose)  
• Use ideal body weight for dosing to reduce side effects | • QTc interval > 500  
• Use with caution in infants < 6 months - consider 2nd line agent if not critically ill | • ECG monitoring every 3-3 days while receiving HCQ in conjunction with an interacting medication that prolongs QTc (e.g. Azithromycin)  
• CBC and CMP at least every 3 days while on treatment (daily if G6PD deficient) | • Risk of cardiotoxicity (QTc prolongation)  
• Hypoglycemia  
• Hemolysis in patients with G6PD (very low risk)  
• Retinopathy and marrow suppression (low risk with 5-days)  
• Hepatotoxicity: caution in patients with underlying liver disease or if using other hepatotoxic drugs  
• May increase levels of cyclosporine & digitoxin |

*Duration may be extended for up to 10 days on a case-by-case basis depending on response and severity of illness.

---

Review potential medication interactions with clinical pharmacist prior to initiation

CLICK HERE FOR INFORMATION ON:  
• 2nd line agents for COVID-19 AND  
• Managing critically ill patients not responding to therapy
<table>
<thead>
<tr>
<th>CONTRAINDICATIONS</th>
<th>RECOMMENDATIONS</th>
<th>EXCLUSION CRITERIA</th>
<th>MONITORING</th>
<th>ADVERSE EFFECTS</th>
</tr>
</thead>
</table>

**CONTRAINDICATIONS FOR ALL PATIENTS NOT RESPONDING TO 1st LINE MONOTHERAPY**

1. Use if 56 days; 2. Use if 10 days; 3. Use if 10 days

**INTERACTION BETWEEN DRUGS AND LUPUS (see also Appendix)***

- The combination of hydroxychloroquine or aspirin increases the risk of infection.
- The use of both hydroxychloroquine and aspirin decreases the risk of infection.

**ANXIETY DISORDERS (see also Appendix)**

1. Use if 56 days; 2. Use if 10 days; 3. Use if 10 days

**MISCELLANEOUS**

- Use if 56 days; 2. Use if 10 days; 3. Use if 10 days

**ADVERSE EFFECTS**

- Use if 56 days; 2. Use if 10 days; 3. Use if 10 days

**NOTES**

- Hydroxychloroquine is not recommended in children > 10 years of age.
- Aspirin is not recommended in children < 18 years of age.
- Antibiotics are recommended for all patients not responding to 1st line monotherapy.