Estimates of the sensitivity of covid 19 PCR testing vary widely but may be in the 70-90% range in ambulatory patients. Sensitivity highest within 3-5d after symptoms onset due to high viral loads.

Factors that may increase false negatives:

- **Assay used:**
  - Lab-based PCR (e.g. YNHH, Mayo, Quest) estimated at 85-90% sensitive
  - POC tests (e.g. Abbott ID now and others) predicted to be 10% lower (currently not being done in < 18 years old)

- **Other factors:**
  - Poor sample quality or sampling technique
  - Advanced disease stage—viral loads are highest EARLY in disease
  - Variable viral shedding, including patient-specific factors
  - Disease severity

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**Ambulatory Negative Covid Test Algorithm—Symptomatic Pediatric Patient (< 18 years old)**

**NEGATIVE test result in a SYMPTOMATIC patient**

- Clinical suspicion for covid
  - Mod-HIGH
    - Advise self isolate; Consider PUI
      - Known covid + patient in the household
    - Improving symptoms
      - Self isolate until 3d after resolution of symptoms
      - Low, or alternative diagnosis likely
    - Worsening symptoms or failure to improve
      - High risk patient* with persistent symptoms OR high risk household**
      - Ref to ED if clinically warranted
      - Labs to consider: CBC, CRP, ferritin, procalcitonin, complete metabolic panel, D-Dimer, PT/PTT, fibrinogen, LDH, BNP (Lymphopenia, elevated inflammatory markers, hepatitis, elevated D-dimer, PT/PTT examples of labs consistent with COVID-19)
      - Retest for covid in 2-3d
        - Ensure high quality sample
        - Consider additional diagnostic testing (e.g. labs, CXR) if can be done safely
        - Consider home O2 sat monitoring if available
      - Presume COVID positive and self isolate for at least 14d from symptom onset with resolving symptoms and 72h fever free off antipyretics
      - Repeat testing not needed unless progressive symptoms

*Pediatric patients with the following conditions/characteristics may be at increased risk for severe disease:
- BMI > 95% for age
- Diabetes
- Congenital or chronic heart, kidney, liver or lung disease
- Asthma that requires daily medications
- Malignancy and undergoing treatment
- Immunosuppressive illness or medication
- Smoker (tobacco products, e-cigarettes vaping, marijuana)

**High risk household member with high risk condition**
- Age > 60
- BMI > 30
- Diabetes
- Chronic heart, kidney, liver or lung disease
- Asthma that requires daily medications
- Malignancy and undergoing treatment
- Immunosuppressive illness or medication
- Smoker

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COVID-19 Pediatric Task Force 5/5/20