

Identification and Mitigation of Suspected Clinical False Positive COVID-19 Tests

Background

While nucleic acid amplification test (NAAT) (which includes polymerase chain reaction (PCR) and transcription mediated amplification (TMA) tests) assays for SARS-CoV-2 are known to be highly sensitive and specific and **analytic** false positives are rare. However, **clinical** false positive results may occur, especially when testing persons with a low pre-test probability for COVID-19. Low pre-test probability is influenced by several factors, including low disease prevalence in the community, lack of known exposures, complete vaccination status, and absent symptoms. In circumstances where a person with a low probability for COVID-19 is tested, found positive, and remains asymptomatic, additional testing can be performed to determine if the initial positive COVID-19 test may not reflect a patient who has current or active COVID-19. To simplify the process and create consistency and reliability for the user, this procedure does not use cycle threshold (Ct) values. This procedure is not required of all asymptomatic patients; rather, it should be used when the clinical situation suggests that the patient has a low probability for being an active clinical case of COVID-19, such as in the case of a remote prior infection.

Though it may be determined in the end that a patient is not an active clinical case of COVID-19, previous lab results will not be modified. This pathway does not suggest an analytic false positive test. The medical decision making behind the interpretation of test results should be otherwise reflected in the medical record.

Procedure (Outlined in Flowchart on Page 3; Agile Clinical Pathway also available under “COVID Testing, Suspect False Positive Result: Adult Inpatient”)

1. Patients with suspected false positive NAAT SARS-CoV-2 tests will be identified by the clinical care team and screened according to the following procedure. This procedure applies for inpatient and ambulatory settings.
2. Eligibility Criteria for patients with suspected false positive SARS-CoV-2 tests. All 4 criteria must be met:

- a. Fully vaccinated and/or prior diagnosis of COVID-19 within the past 180 days. (Patients with previous diagnosis of COVID-19 within 90 days of the test in question who are not symptomatic may continue to shed low levels of viral RNA. They do not need further workup and should not be considered to have active/current COVID-19. No further action in the algorithm is necessary and isolation precautions can be discontinued.)
- b. No signs or symptoms of COVID-19 (see Table 1). For patients to be eligible for this algorithm they must remain asymptomatic for the entire period of this workup.
- c. Positive SARS-CoV-2 NAAT assay in question was done within the past 48 hours.
- d. No close, prolonged significant exposure to a person known or suspected of COVID during the past 14 days

Table 1: Symptoms Associated With COVID-19 Infection

<ul style="list-style-type: none"> • Fever (temp $\geq 100.0^{\circ}\text{F}$) • Chills • Muscle or Body Aches • Fatigue (Profound) • Headache • Nausea • Vomiting • Diarrhea 	<ul style="list-style-type: none"> • Cough • Shortness of Breath • Sore Throat • Anosmia or dysgeusia (new loss of smell or taste) • Sinus Congestion • Rhinorrhea • Conjunctivitis
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3. Screen patients for Exclusion Criteria. Patients must not have any of the following:
 - a. Signs of symptoms of COVID-19 currently or within the timing of testing.
 - b. Severe immunocompromise. *For the purposes of this algorithm*, conditions that constitute severe immunocompromised states include current chemotherapy, stem-cell or solid organ transplant recipients, untreated HIV infection with CD4 count <200, primary immunodeficiency disorders, and chronic immunosuppressive therapy (e.g. monoclonal antibodies, high-dose corticosteroids (generally defined as receipt of $\geq 2\text{mg/kg}$ prednisone (or equivalent) daily for 15 or more days)).
4. During the ‘rule out’ period, ensure that ‘COVID-19 Isolation’ is active for the patient. Inform the patient that this is a preliminary designation until further testing is complete.
5. Order and collect repeat SARS-CoV-2 NAAT. The specimen for this test should be obtained ≥ 12 hours **after** (but within 72 hours) the initial test which was positive.
6. Evaluate the results of the second test:
 - a. If this second test is positive the patient should be considered to have current/active COVID-19 infection. COVID-19 isolation precautions should be continued and management should continue as if the patient has COVID-19.
 - b. If this second test is negative and the patient continues to be asymptomatic, order and collect a repeat (*third*) SARS-CoV-2 NAAT test, described in 7 below. This *third* test should be performed at least 12 hours from the time of the *second* test. COVID-19 isolation precautions should be continued during this time period.
 - If this *third* test is positive the patient should be considered to have current/active COVID-19 infection. COVID-19 isolation precautions shall be continued and management should continue as if the patient has COVID-19.
 - If this *third* test is negative and the patient remains asymptomatic, the two negative tests would determine that the patient does not have active/current COVID-19 disease. COVID-19 isolation precautions are to be discontinued and the patient should be counseled that they do not currently have COVID-19.

Contacts

The following contacts may be helpful for laboratory or other infection prevention concerns.

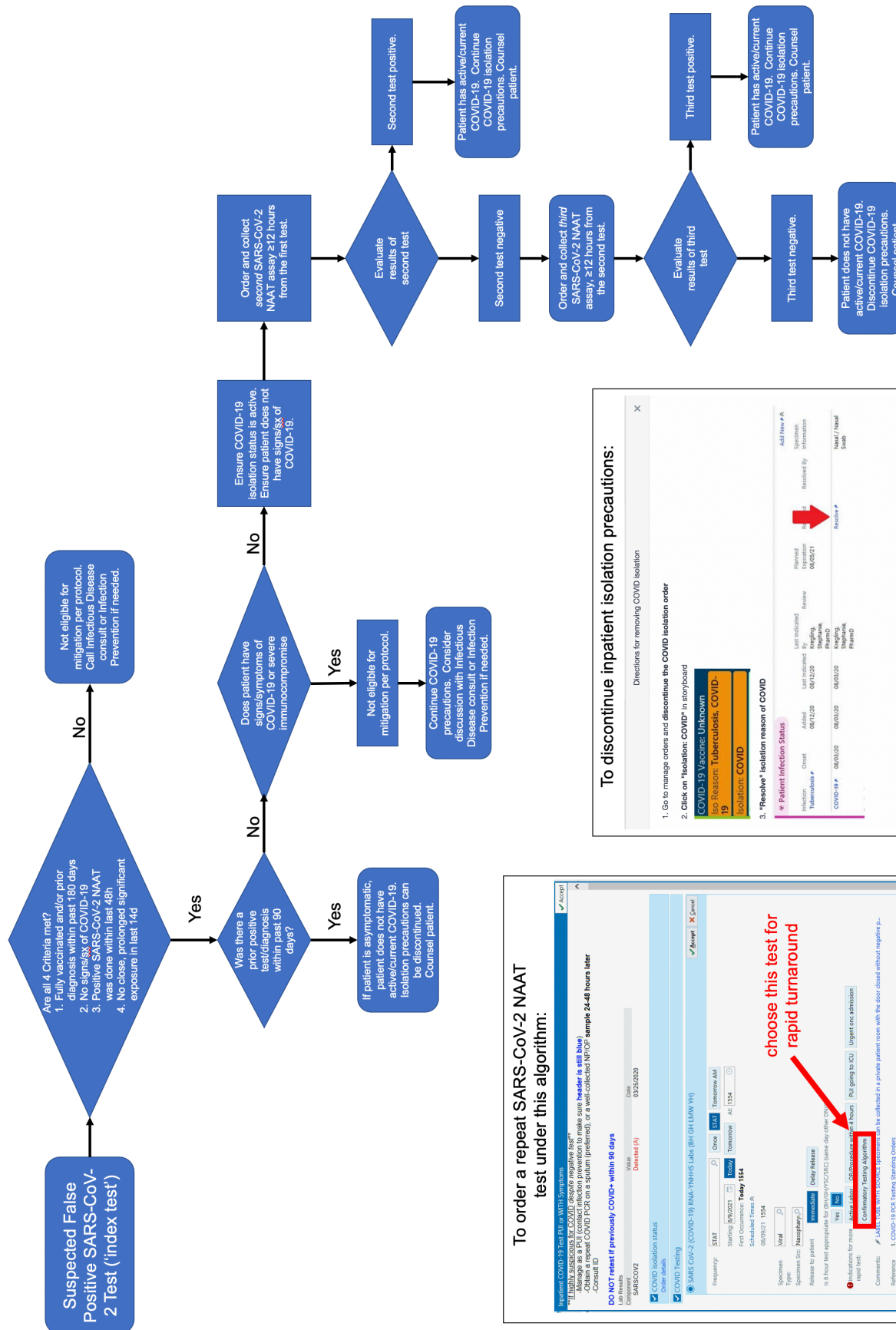
Laboratory Services

Bridgeport Hospital	203-384-3066
Greenwich Hospital	203-863-3086
Lawrence & Memorial Hospital	860-444-5101 Option 4
Westerly Hospital	401-348-3302
Yale New Haven Hospital	203-688-3524

Infection Prevention

Bridgeport Hospital	475-248-6263
Greenwich Hospital	203-863-3275
Lawrence & Memorial Hospital	860-271-4904
Westerly Hospital	401-348-3574
Yale New Haven Hospital	203-688-4634

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To discontinue inpatient isolation precautions:

- Go to manage orders and discontinue the COVID isolation order
- Click on "Isolation: COVID" in storyboard

COVID-19 Vaccine: Unknown	COVID-19 Isolation: COVID	COVID-19 Isolation: COVID
Isolation: COVID	Isolation: COVID	Isolation: COVID

3. "Resolve" isolation reason of COVID

Infection	Chest	Added	Last Indicated	By	Reviewed	Planned	Specimen	Add New # A
Infection	Tuberculosis	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20
COVID-19	08/03/20	08/03/20	08/03/20	08/03/20	08/03/20	08/03/20	08/03/20	08/03/20

To order a repeat SARS-CoV-2 NAAT test under this algorithm:

Implement COVID-19 Test PCR or WTP Symptomatic

1. If patient is symptomatic, repeat COVID-19 PCR or WTP Symptomatic

2. If patient is asymptomatic, repeat COVID-19 PCR or WTP Symptomatic

3. If patient is asymptomatic, repeat COVID-19 PCR or WTP Symptomatic

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August 9, 2021

ACCESSING THROUGH AGILE PATHWAY

1. Navigate to the “Pathways” Tab
2. Select “COVID Testing: Suspected Clinical False Positive Confirmatory Pathway: Adult Inpatient”

YaleNewHavenHealth Search... Go

Pathways

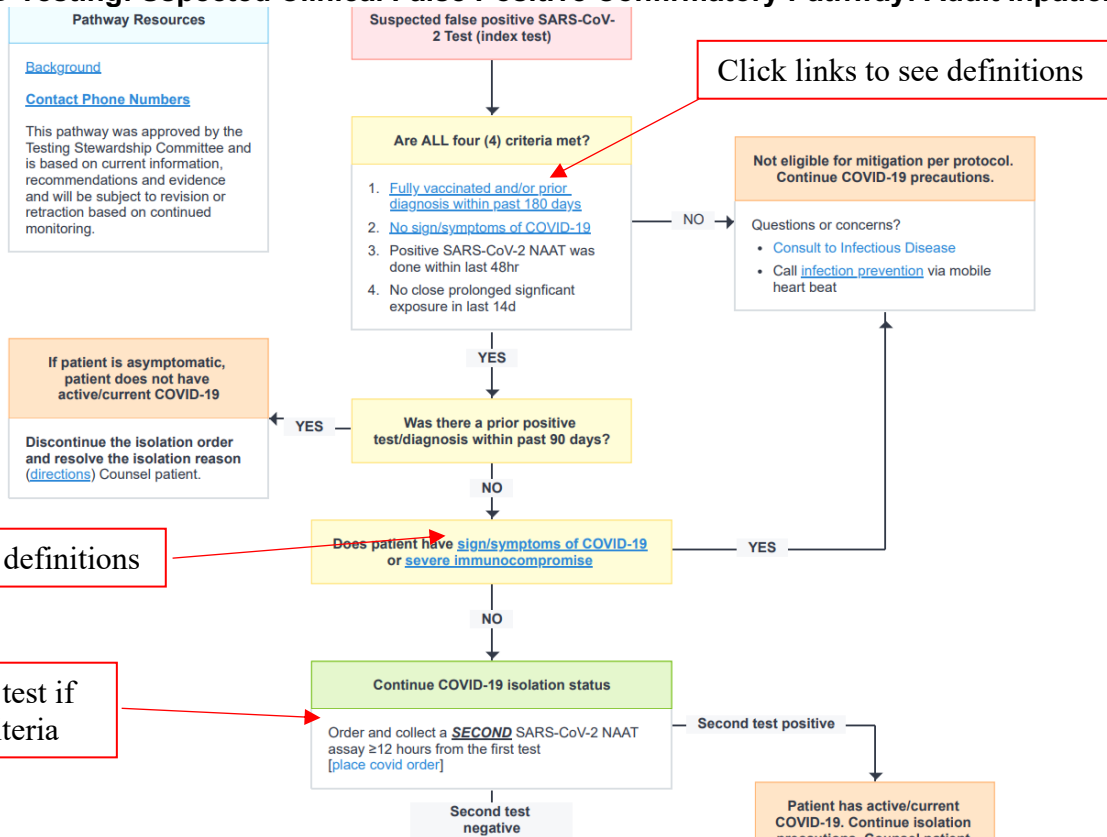
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Pediatric Inpatient Pathways

All resources > Inpatient Pathways > COVID Inpatient Adult Pathways: Admission, Treatment, Vaccine, Isolation

- COVID J&J Vaccine Adverse Reaction Days 4-30: Inpatient
- COVID Testing: Suspected Clinical False Positive Confirmatory Pathway: Adult Inpatient**
- COVID Vaccine Immediate Adverse Reaction: Inpatient
- COVID-19 Admission: Adult Inpatient
YNHHS
- COVID-19 Isolation Discontinuation: Adult Inpatient
- COVID-19 Subsequent Day Management: Adult Inpatient
YNHHS

feedback

COVID Testing: Suspected Clinical False Positive Confirmatory Pathway: Adult Inpatient



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