COVID-19 Screening of Adult Patients at UCSF Health

**Situation:** On Thursday 4/23/20, UCSF Health initiated testing of all inpatient admissions and outpatient procedures in the operating room or involving the aerodigestive tract.

**Why did we do this?**

A subset of patients with COVID-19 will not manifest obvious symptoms or may remain asymptomatic, whereas another subset of patients may be in the pre-symptomatic phase for the 1-2 days before symptoms begin.

Screening for COVID-19 (i.e., testing patients before they become symptomatic), helps us to:

a) increase the safety of our inpatient healthcare workers and staff
b) trace, test and isolate contacts promptly, thereby preventing further spread of SARS-CoV-2
c) monitor for complications and allow for delay of surgery in asymptomatic and presymptomatic patients whose surgeries can safely be delayed and
d) better define our local population prevalence, which will more precisely inform where we are “on the curve.”

**Are other health systems testing asymptomatic patients?**

Many other centers are taking similar approaches, including the other UCs.

**Is testing asymptomatic patients recommended by the Centers for Disease Control and Prevention (CDC) or other public health authorities?**

The San Francisco Department of Public Health has issued a Directive of the Health Officer No. 2020-08 mandating testing before elective surgical procedures. Targeted testing (e.g., pre-procedure, on admission) of asymptomatic patients for COVID-19 is included as an option to consider to prevent healthcare-associated transmission by the CDC.

**What is the current test positivity in asymptomatic patients at UCSF Health?**

Test positivity details can be found on the COVID-19 Executive Dashboard.

**How do you define symptomatic or suspected COVID-19 patients?**

- Any of the following *new acute* symptoms:
  - Fever (objective or subjective)
  - Myalgias
12.27.2020
Owner: Care Delivery Committee

- Respiratory symptoms (dyspnea or cough)
- URI symptoms (sinus symptoms, rhinorrhea, sore throat)
- GI symptoms (diarrhea, nausea, vomiting)
- ENT symptoms (loss of taste or smell)
- Eye symptoms (conjunctivitis)
- Other clinical concern for COVID-19

- Chest imaging findings suggestive of COVID-19 (bilateral, ground glass, peripheral distribution)
- COVID-19 exposure and has not had COVID-19 within 90 days
- Unable to provide history and no collateral regarding symptoms available
- Documented COVID-19 infection and still in isolation period (i.e., COVID-19 (Confirmed) infection flag in place)
- Newborns born to mothers with known COVID-19 still in isolation (i.e., COVID-19 (Confirmed) infection flag in place)

**How do you define asymptomatic patients?**

- Meets none of the above criteria for symptoms or suspected COVID-19

**Which asymptomatic patients require testing?**

- Outpatient testing:
  - Anyone with planned admission or procedures that will lead to admission within 4 days
    - Includes Birth Center admissions
  - Anyone planned for an outpatient or 23h procedure in the operating room.
  - Specific additional outpatient procedures requiring anesthesia, including but not limited to procedures of the upper respiratory/GI tracts with potential for aerosol generation

- Inpatient/pending admission testing:
  - All patients being admitted to the hospital, including 23h stay patients, if they do not meet criteria for symptoms/suspected infection, are not in the COVID-recovered period, and have not had a COVID test within 4 days
  - Transfer patients must have had a test on admission or prior to transfer. If no test was performed, the test should be done on arrival to UCSF Health.
  - Inpatients should be retested hospital day #4
    - Exceptions:
      - Day 4 is the day of discharge
      - Patient has a current COVID-19 infection
      - Patient is in the COVID-recovered period
Inpatients undergoing aerosol-generating procedures (AGPs), including surgeries, if > 7 days since last COVID testing. For patients having multiple or continuous AGPs, weekly testing is recommended

- A test on day 7 of admission should be done even if tested on day 4
- Patients residing in shared rooms should be tested every Monday and Thursday starting ≥ 2 days after day 4 test
- Some inpatients may also require testing before discharge to congregate living situations

Note: Any inpatient who develops symptoms in the hospital should be placed into Novel Respiratory Isolation and tested as a symptomatic patient.

<table>
<thead>
<tr>
<th>Population</th>
<th>Admission</th>
<th>Day 4</th>
<th>Day 7</th>
<th>Subsequent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic, no AGPs</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>Must retest if needing an AGP and last test &gt; 7 days prior</td>
</tr>
<tr>
<td>Asymptomatic, private room, frequent or continuous AGPs</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Weekly</td>
</tr>
<tr>
<td>Asymptomatic, shared room, +/-AGPs</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>Every Monday and Thursday starting ≥ 2 days after day 4 test</td>
</tr>
<tr>
<td>COVID-19 recovered within 90 days of infection</td>
<td>No asymptomatic testing recommended</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are any populations excluded?

- Emergent procedures should proceed even if testing is not completed.

Are there alternatives to NP or mid-nasal turbinate/OP swabs for retesting of asymptomatic patients?

For asymptomatic patients undergoing repeated testing, we recommend bilateral anterior nares swab. This test maintains excellent sensitivity and causes less discomfort for the recipient. For symptomatic patients, an NP or mid nasal turbinate +/- OP swab is preferred.
<table>
<thead>
<tr>
<th>Type of test</th>
<th>Recommended swab type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptomatic testing</strong></td>
<td>NP+/−-OP, mid-turbinates +/−-OP</td>
</tr>
<tr>
<td><strong>Initial pre-procedure or asymptomatic admission screen</strong></td>
<td>NP+/−-OP, mid-turbinates +/−-OP</td>
</tr>
<tr>
<td><strong>Repeat asymptomatic inpatient testing (day 4, 7, or recurring)</strong></td>
<td>Bilateral anterior nares (AN)</td>
</tr>
</tbody>
</table>

*For intubated patients, tracheal aspirate samples also have excellent sensitivity

**What type of platform is acceptable?**

The following tests from outside labs are acceptable if done and resulted within the recommended time frame:

- Reverse-transcriptase PCR (RT-PCR)
- PCR
- Nucleic acid amplification (NAA)
- Non-Abbott ID Now nucleic acid amplification test (NAAT)
- Transcription-mediated amplification (TMA)
- Loop-mediated amplification (LAMP)

Because of lower performance, antigen, Abbott ID now NAAT test, pooled PCR, point of care, or “presumptive” tests should not be accepted. Serology and antibody tests are not accepted for decision-making around infection control practices. If the type of test is unclear and you are unable to obtain the information, you should repeat the testing at UCSF.

**Are you testing pediatric patients? If not, why?**

Asymptomatic pediatric patients will be tested using similar approaches as outlined above.

**Are you testing ambulatory patients? If not, why?**

Certain ambulatory populations undergoing high-risk procedures as outlined above will be tested. Additional groups continue to be considered for inclusion in the future on a case-by-case basis through review by the COVID Care Delivery group.

**How should physicians and APPs order an asymptomatic COVID-19 screen?**

All updated algorithms should be found by referring to the HEIP website [here](#). For outpatients with planned admissions or procedures, providers should refer to the ambulatory [algorithms](#) for instructions on how to refer the patient for testing. For inpatients, the "COVID-19 RNA Screening for Asymptomatic Patients" order panel will be part of core admission ordersets and will include an order for droplet isolation. Patients tested within 4 days before admission do not need repeat testing. Details of the workflow can be found in the inpatient [algorithms](#).
What type of Isolation and PPE are needed?

<table>
<thead>
<tr>
<th>COVID signs or symptoms/suspicion?</th>
<th>PPE and signage</th>
<th>COVID test collection</th>
<th>No AGP</th>
<th>AGP</th>
<th>Responsible for discontinuing isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (on admission or anytime during admission)</td>
<td>Novel Respiratory Isolation</td>
<td>N95 + eye protection (or PAPR) + gown/gloves</td>
<td>N95 + face shield (or PAPR) + gown/gloves</td>
<td>N95 + face shield (or PAPR) + gown/gloves</td>
<td>Ordering provider</td>
</tr>
<tr>
<td>No; initial admission test</td>
<td>Droplet isolation</td>
<td>N95 + eye protection (or PAPR) + gown/gloves</td>
<td>Surgical mask/eye protection</td>
<td>N95 + face shield (or PAPR) + gown/gloves</td>
<td>Bedside nurse</td>
</tr>
<tr>
<td>No; subsequent day 4 test or weekly testing for existing inpatients</td>
<td>Standard isolation (including universal surgical mask)</td>
<td>N95 + eye protection (or PAPR) + gown/gloves</td>
<td>Surgical mask/eye protection</td>
<td>N95 with eye protection (or PAPR) recommended</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

*AGP = aerosol-generating procedure

How are other centers approaching isolation for asymptomatic tests?

Approaches vary to some degree with various populations being tested using various isolation strategies. Some are doing test-based isolation, others doing symptom-based isolation, and yet others taking a hybrid approach. Most other West Coast centers are isolating patients based on symptoms.

What if my asymptomatic patient had a test before admission?
What is the current test turnaround time?

Test turnaround time is 6-24 hours for inpatients and up to 72 hours for outpatients.

What if my patient has a pending COVID-19 test but needs an emergency procedure?

Pending tests should not delay needed care. The procedural PPE guidance reflects the possibility of unknown infection and is intended to protect health care workers regardless of whether a patient is later found to be infected. Urgent or emergent procedures should proceed even if the COVID test is pending or has not been collected.

What if I am asked to consult on or perform a study for a patient with a pending COVID-19 test?

The care of patients with a pending COVID-19 test should not be affected by the fact that this test was sent. Consultants should continue their usual practices and should not delay seeing a patient due to a pending COVID-19 test.

What happens if the patient is not initially isolated and then develops or discovered to have symptoms concerning for COVID-19 after admission?

If a patient develops symptoms suggestive of COVID-19 you should place the patient in appropriate isolation (Novel Respiratory Isolation) pending testing.

What happens if my asymptomatic patient tests positive for COVID-19?

For patient care:

- A positive or indeterminate test is considered a critical value and messaged to the inpatient team
- Order Novel Respiratory Isolation
- Transfer to 15L or Mt. Zion may occur on a case-by-case basis

For exposed healthcare workers:

- Look [here](#) for further details about exposures

What does a negative test mean?

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Test?</th>
<th>Isolate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No test</td>
<td>Yes</td>
<td>Droplet precautions</td>
</tr>
<tr>
<td>Negative test within 4 days</td>
<td>No</td>
<td>Standard precautions</td>
</tr>
<tr>
<td>Pending test on admission</td>
<td>No additional test</td>
<td>Droplet precautions</td>
</tr>
<tr>
<td>Recently positive test within 90 days</td>
<td>No (unless symptomatic)</td>
<td>See guidance <a href="#">here</a></td>
</tr>
</tbody>
</table>
As with all diagnostic testing, COVID-19 testing should be interpreted in the context of the clinical scenario and prevalence of infection in the relevant population. Because there is an incubation period for this virus and infection could be acquired later, if the patient subsequently develops symptoms of respiratory infection, a repeat test should be obtained.

**Will testing be expanded for asymptomatic employees and faculty?**

Staff, trainees, and faculty with any symptoms suggestive of COVID-19 should be tested. Additional plans for testing asymptomatic staff, trainees, and faculty continue to evolve. Find more information [here](#).