This document supersedes prior documents regarding diagnostic criteria. Current criteria for testing vary by location of care and are subject to change. Ongoing limitations in testing capacity require prioritization based on symptoms and need for hospital admission or procedures.

Data suggest high sensitivity of COVID-19 PCR from several specimen types.

1. Nasopharyngeal (NP) swabs remain the preferred specimen type for COVID-19 testing at Michigan Medicine.
2. Midturbinate swabs, anterior nasal swabs, and saliva are also acceptable for symptomatic patients. Self-collected midturbinate or anterior nasal swabs are acceptable when collection is observed by a medical professional.
3. For patients with a medical contraindication to an NP swab (e.g., facial trauma, nasal septal or palate defects, or severe coagulopathy), an anterior nasal plus an oropharyngeal swab is recommended rather than an oropharyngeal swab alone.
4. COVID-19 PCR testing of saliva specimens is not currently available at Michigan Medicine. Results of outside COVID-19 PCR testing of saliva specimens may be accepted.
5. Negative results from antigen-based tests (e.g., Quidel Sofia 2, BD Veritor) are currently not accepted for pre-procedural or admission testing at Michigan Medicine. Negative results from the Abbott ID Now test are accepted only if the specimen type is an NP swab.

<table>
<thead>
<tr>
<th>Clinical scenario</th>
<th>Acceptable specimen types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic</td>
<td>NP (preferred), midturbinate, anterior nasal, saliva</td>
</tr>
<tr>
<td>Asymptomatic pre-procedural or admission</td>
<td>NP only (if medically contraindicated, then dual sample with anterior nasal and oropharyngeal)</td>
</tr>
<tr>
<td>Surveillance (e.g., frequent routine asymptomatic testing for certain workforce member and patient populations)</td>
<td>NP, midturbinate, anterior nasal, saliva</td>
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</tbody>
</table>

In most cases, a single negative test will be sufficient to rule out COVID-19. In cases of high clinical suspicion and an initial negative test, a second COVID-19 PCR should be performed. Please see the COVID-19 de-escalation document for guidance on discontinuing Special Pathogens Precautions.

Testing guidance can be found below for the following patient populations:

A. **INPATIENT AND EMERGENCY DEPARTMENT** (updated 1/24/21)  
B. **OCCUPATIONAL HEALTH SERVICES** (updated 1/24/21)  
C. **AMBULATORY CARE PATIENTS** (updated 1/24/21)  
D. **OR AND PROCEDURAL AREAS**  
E. **ASYMPTOMATIC SPECIAL POPULATIONS** (updated 11/15/20)  
F. **PATIENTS WITH CLINICAL RECOVERY OF COVID-19** (added 9/3/20)
A. INDICATIONS FOR COVID-19 TESTING FOR INPATIENT & EMERGENCY DEPARTMENT (updated 1/24/21)

Patients who qualify for testing through this algorithm will have an appropriate specimen obtained and sent for COVID-19 PCR or other molecular test (based on location). Flu/RSV PCR or RPAN can also be sent per provider discretion.

Patients must meet the following criteria to qualify for COVID-19 testing:

Any one of the following:
- Planned hospital admission
- Fever (T >100.4°F or 38°C) or chills
- New cough
- New shortness of breath or hypoxia
- Public health department recommended testing due to an exposure to COVID-19

Or any two of the following:
- New muscle aches
- New headache
- New URI symptoms (rhinorrhea, nasal congestion, sore throat)
- New loss of sense of smell or taste
- New nausea, vomiting or diarrhea
- New rash
- Close Contact Exposure* to someone with COVID-19

B. INDICATIONS FOR COVID-19 TESTING THROUGH OCCUPATIONAL HEALTH SERVICES (updated 1/24/21)

Patients who qualify for testing through this algorithm will have an appropriate specimen obtained and sent for COVID-19 PCR. Flu/RSV PCR or RPAN can also be sent per provider discretion.

Patients must meet the following criteria and be a University of Michigan employee to qualify for COVID-19 testing:

Any one of the following:
- Fever (T >100.4°F or 38°C) or chills
- New cough
- New shortness of breath or hypoxia
- High-risk occupational or other Close Contact Exposure* to someone with COVID-19 (test at day 5 following exposure if no symptoms)
- Public health department recommended testing due to an exposure to COVID-19

Or any two of the following:
- New muscle aches
- New headache
- New URI symptoms (rhinorrhea, nasal congestion, sore throat)
- New loss of sense of smell or taste
- New nausea, vomiting or diarrhea
- New rash
- High-risk occupational or other Close Contact Exposure* to someone with COVID-19 (test at any time following exposure if any symptoms)
C. INDICATIONS FOR COVID-19 TESTING FOR SYMPTOMATIC AMBULATORY CARE PATIENTS (updated 1/24/21)
Patients who qualify for testing through this algorithm will have an appropriate specimen obtained and sent for COVID-19 PCR. Flu/RSV PCR or RPAN can also be sent per provider discretion.

Patients must meet the following criteria to qualify for COVID-19 testing:

Any one of the following:
- Fever (T >100.4°F or 38°C) or chills
- New cough
- New shortness of breath or hypoxia
- Public health department recommended testing due to an exposure to COVID-19

Or any two of the following:
- New muscle aches
- New headache
- New URI symptoms (rhinorrhea, nasal congestion, sore throat)
- New loss of sense of smell or taste
- New nausea, vomiting or diarrhea
- New rash
- Close Contact Exposure* to someone with COVID-19

D. INDICATIONS FOR COVID-19 TESTING IN OR AND PROCEDURAL AREAS
(see http://www.med.umich.edu/i/ice/resources/coronavirus/ppe_pt_care.pdf):
1. Patients undergoing general anesthesia
2. Patients undergoing high/moderate-risk aerosol-generating procedures (AGPs)
3. Patients who will recover from their procedure in a PACU or other similar setting in an area that performs AGPs

E. INDICATIONS FOR COVID-19 SCREENING OF ASYMPTOMATIC SPECIAL POPULATIONS (updated 11/15/20)
1. Adult and pediatric patients with planned hematopoietic stem cell transplantation conditioning therapy within the following 48 hours
2. Adult and pediatric patients with planned imminent solid organ transplantation
3. Neonates born to COVID-19 positive mothers (see newborn testing guidelines)
4. Michigan Medicine employees following a high-risk occupational exposure or exposure to a household member or other close contact with confirmed COVID-19
5. All patients who are advised to get tested by a public health department due to an exposure to COVID-19

F. INDICATIONS FOR RETESTING PATIENTS FOLLOWING CLINICAL RECOVERY FROM COVID-19
1. COVID-19 testing is not indicated 21 days to 3 months since date of hospital discharge or date of positive test if no admission unless patient develops new symptoms concerning for infection
2. Resume standard COVID-19 testing protocols for all patients >3 months since date of hospital discharge or date of positive test if no admission
**Close Contact Exposure in a non-healthcare setting:** Greater than 15 minutes of cumulative close face to face contact over 24 hours with someone diagnosed with COVID-19 within 2 days prior to and 10 days after the COVID-19 positive person’s diagnosis (positive test).

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<thead>
<tr>
<th>Antimicrobial Subcommittee Approval: N/A</th>
<th>Originated: 03/2020</th>
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<tbody>
<tr>
<td>P&amp;T Approval: N/A</td>
<td>Last Revised: 1/2021</td>
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</table>

Revision History:
- 4/7: Removed testing pager requirement
- 4/14: Added OHS testing guidance, adjusted ED, asymptomatic, and ambulatory testing guidance
- 4/20: Revised ambulatory testing guidance
- 5/1: Removed Testing to remove Special Pathogens Precautions section
- 6/29: Revised ED, OSH, Ambulatory care, OR areas, and Asymptomatic Special Populations sections
- 8/3: Revised ED, OSH, and Ambulatory care sections
- 8/28: Added nausea & vomiting as criteria for testing
- 9/3: Combined hospitalized & ED sections. Added section on retesting for Clinical Recovery
- 9/21: Revised OHS section
- 11/15: Revised OSH section, added language about testing based on health department recommendation due to an exposure, updated definition of close contact exposure.
- 1/24: Revised introduction information, Inpatient & ED section, OHS section, and Ambulatory Care sections.

The recommendations in this guide are meant to serve as treatment guidelines for use at Michigan Medicine facilities. If you are an individual experiencing a medical emergency, call 911 immediately. These guidelines should not replace a provider’s professional medical advice based on clinical judgment, or be used in lieu of an Infectious Diseases consultation when necessary. As a result of ongoing research, practice guidelines may from time to time change. The authors of these guidelines have made all attempts to ensure the accuracy based on current information, however, due to ongoing research, users of these guidelines are strongly encouraged to confirm the information contained within them through an independent source.

If obtained from a source other than med.umich.edu/asp, please visit the webpage for the most up-to-date document.