Management of Patients and Healthcare Personnel for the COVID-19 Pandemic

Updated May 21, 2020

In order to address this rapidly changing situation, this document outlines strategies to address the situation, and enable UCDH to continue our mission of delivering the highest quality of care to our community. Our strategy is informed by CDC guidelines, Sacramento County Public Health and our own Infectious disease experts.

Current Practice

These strategies are founded upon UCDH standards and policies, and references the following guidance:

- CDC's updated guidance on infection control: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html
- Sacramento County Public Health: https://www.saccounty.net/COVID-19/Pages/default.aspx
- Sacramento County Public Health – COVID-19 Laboratory Prioritization Advisory; March 16, 2020
- The Centers for Disease Control and Prevention's (CDC) Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with COVID-19: https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html
- The Centers for Disease Control and Prevention's (CDC) Guidance Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance) dated 3/16/2020 https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/hcp-return-work.html
- SOLANO COUNTY COVID-19 MANAGEMENT OF GENERAL COMMUNITY AND HEALTHCARE PERSONNEL INTERIM GUIDANCE, Solano, Public Health, March 9, 2020
- "Viral RNA load as determined by cell culture as a management tool for discharge of SARS-CoV-2 patients from infectious disease wards": https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7185831/

Table of Contents

Visitor Management

Our care philosophy has always emphasized family and loved ones as part of the healing process. However, due to the ongoing community spread of COVID-19 (coronavirus) and the local public health emergency, we must take extra steps to protect our patients, staff, visitors and the community.

We are limiting visitations within UC Davis Medical Center in order to help keep the virus out of the hospital. All hospital visitation will be suspended until the transmission of COVID-19 is no longer a threat to our patients, staff and community.

The decision to restrict visitors was difficult and made only after very careful considerations. With schools, houses of worship, and most other gathering places closed or highly restricted to help prevent the spread of COVID-19, hospitals and health clinics are also making public safety the top priority. Additionally, nearly every patient in the hospital is at an elevated level of risk for complications from COVID-19.

We know there are a few situations when having a **loved one (visitor)** present is necessary to care delivery. In these cases, visitors will be allowed based on the exceptions listed below. However, in all cases, **loved ones are only allowed if they do not have symptoms of illness** (fever, runny nose, cough, shortness of breath). Additionally, children under the age of 16 are not allowed.

UC Davis Health recognizes the importance that **patient's loved ones** play in the mental well-being of patients. This is especially evident for some such as pediatric patients, patients in labor and delivery, and patients at end-of-life.

All Patients may have one **loved one (visitor)** and must stay in the room and have no symptoms for/or recently confirmed having COVI19. **A loved one** will be **welcomed between** 10am to 9pm, with exception to the following areas and guidelines:

- Patients undergoing surgery or procedures may have one visitor.
- Labor and Delivery patients may have one partner and one birth support person.
- Neonatal Intensive Care Unit (NICU) patients may have one birth parent plus one significant other who must remain in the room for the duration of the visit.
- Pediatric patients may have one **loved one**, either a parent or a guardian.
- Patients who are at the end-of-life may have 2 **loved ones**.
- Patients who have an appointment at UC Davis ambulatory clinics, laboratory, or radiology, may have one **loved one** with them.
- Emergency Department:
    - Patients who are being evaluated may have one **loved one** with them (18 years or older).
    - Emergency Department patients under the age of 18 may have 2 legal guardians at the bedside.

In any of these scenarios, loved one will be screened for flu-like symptoms, I.e. fever, cough, sore throat. Visitors will also be required to wear appropriate PPE for the entirety of the visit. Visitors must stay in their patient's room for the entire time of the visit. Visitors are permitted to access the cafeteria and are encouraged to practice social distancing and to keep the time in the public spaces brief. The hospital's information desk in the Pavilion will be given a list of patients who qualify to receive visitors.

Management of Patients with Potential or Confirmed COVID-19 Exposure

UCDH will do the following for the management of patients with respiratory / influenza like illness (ILI) symptoms:

All Points of Entry

Implement UCDH transmission-based precautions of **contact + droplet** for patients with defined symptoms for ILI and COVID-19. These precautions include:

- Source controlling patients with ILI symptoms at all points of entry by placing a face mask on the patient.
- Healthcare personnel (HCP) evaluating patients with ILI will wear gloves, gown, eye protection, and a face mask.
- Healthcare personnel (HCP) performing high-risk aerosol producing procedures will follow our Aerosol Transmission Disease (ATD) policy 2002 mandated by Cal-OSHA for both COVID- 19 patients as well as all other patients with known or suspect droplet or airborne infectious diseases.
- If airborne infection isolation rooms (AIIR) are available, they will be used for aerosol producing or high-risk procedures.

Ambulatory Care and Cancer Center

- Ambulatory and Cancer Center care areas will consider rescheduling non-urgent appointments for patients with respiratory symptoms or convert to a video visit if appropriate.
- Advise patients to stay home until their symptoms have resolved, and to monitor for worsening symptoms and to seek further medical care if warranted.
- Advise patients to return to normal activities, e.g. work, after symptoms resolve.
- Ambulatory Care and Cancer Center discharge teaching when recovering at home.
- Patients presenting to the outpatient setting for care should be provided a face mask (source- control). Staff should don gown, gloves, face mask and eye protection during rooming activities and obtaining vital signs.
- Providers with source -controlled patients should wear same PPE as above for basic examination.
- COVID-19 swab collection requires droplet/contact precaution: face mask, goggles/face shield, gown and gloves. It is NOT an example of high-risk aerosol producing procedure.
- High-risk aerosol producing procedures in outpatient setting would be CPR, bronchoscopy, intubation and nebulizer treatments.
- Healthcare personnel (HCP) performing aerosol generating procedures for COVID-19 or patients with ILI will wear gloves, gown, eye protection, and N95.

Ambulatory Visits for Patients with Suspected or Confirmed COVID-19

- Patients with suspected COVID-19 or confirmed COVID-19 (see below discontinuation of transmission-based precautions) who need face to face care in the ambulatory sites should be treated with the below additional precautions.
- Room the patient immediately or if not possible, have them wait in their car or well distanced from other patients and staff. If possible, schedule these patients at a time which will minimize contact with other patients.
- Patients should be provided a face mask (source- control). Staff should don gown, gloves, face mask and eye protection during rooming activities and obtaining vital signs.
- Providers with source -controlled patients should wear same PPE as above for basic examination.
- Healthcare personnel (HCP) performing aerosol generating procedures for COVID-19 or patients with ILI will wear gloves, gown, eye protection, and N95.
- Patients who have had COVID -19 diagnoses will have a flag on their outpatient chart for 30 days after the initial diagnosis. This flag is to alert HCP to screen for the need to follow COVID-19 care precautions or routine precautions.
- Discontinuation of Transmission-Based Precautions in the Ambulatory Clinics for patients who have been diagnosed with COVID-19: must meet the following criteria using the CDC symptom based stagey (https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html).
- At least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath); and,
- At least 10 days have passed since symptoms first appeared.

Home Care Services

- Home Care will perform Infectious Disease Screening on all patients prior to each patient contact and document findings as well as PPE to be used during home visit.
- Home Care staff will consider telephonic visits for patients with respiratory symptoms in place of home visits, if appropriate.
- Home visits will be scheduled last in the day.
- Every effort to cohort patients will be made to minimize risk.
- Instruct patients to monitor for worsening symptoms and notify the Home Care team as needed. Home Care on-call services available 24/7 for all Home Care patients.
- Instruct caregivers on patient care needs.
- Patients should be provided a mask (source- control) to wear for duration of home visit.
- Social distance of six (6) feet or greater from all person(s) should be maintained whenever possible during visit. Those providing direct patient care should don face mask, goggles/face shield, gown and gloves during the home visit.
- Symptomatic non-patient person(s) in the home will be asked to self-quarantine in another room. If they must participate in visit and cannot maintain social distance, they will don a face covering.
- High-risk aerosol producing procedures in the Home Care setting include hands-only CPR, Hi-Flow nasal cannula, BiPAP/CPAP, tracheostomy change and care, chest physiotherapy, and nebulizer treatments.
- Healthcare personnel performing aerosol generating procedures for COVID-19 or patients with ILI will wear gloves, gown, eye protection, and N95.
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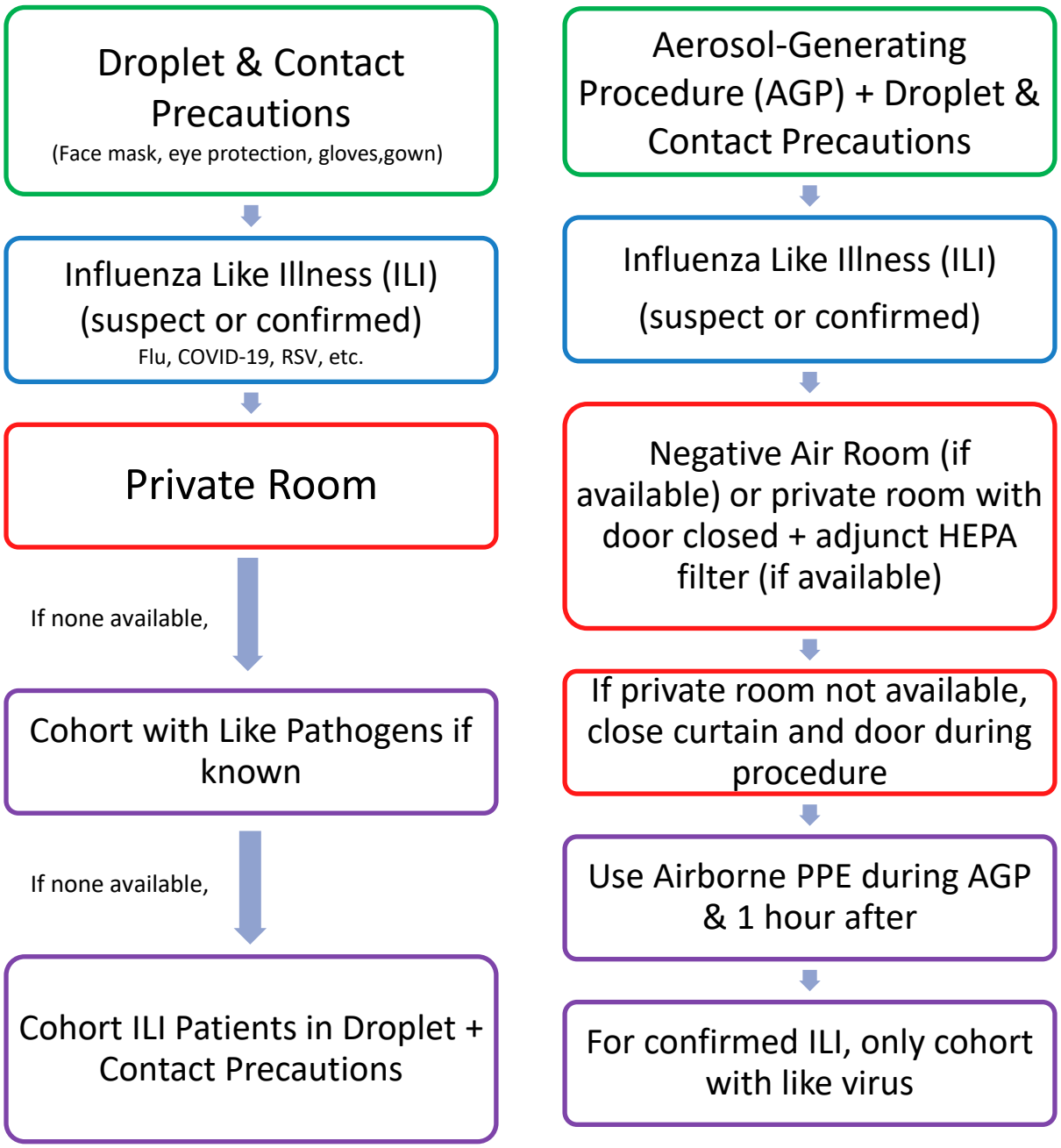
Inpatient Rooming Algorithm



NOTE Droplet includes Mask and eye protection

Inpatient Care and Rooming Guide

Implement UCDH standard and transmission-based precautions of **contact + droplet** for all patients with defined symptoms for ILI and COVID-19. These precautions include:

- Personal protective equipment (PPE) for routine COVID-19 care now requires use of a face mask, eye protection (face shield or goggles), a gown and gloves.
- Patients no longer need to be in airborne isolation rooms (negative pressure rooms)
- Staff will no longer use N95 respirators for routine care of patients with COVID-19
- We will continue to use PAPR or N95 respirators with eye protection during aerosol generating procedures (AGP) such as intubation, bronchoscopy and nebulizer treatments.
- If rule-out COVID testing is ordered for asymptomatic patients based on systematic indications (i.e.: pre-procedure, organ donation, transplant, labor & delivery, etc.), the patient should not be moved in order to cohort with other rule-out COVID patients. If the patient is currently in a shared room, they can remain in that room while in rule-out status. These patients can be roomed with other non-rule-out patients.

Guidelines for Patient Pairings with Influenza Like Illness (ILI)

- Only 1 patient uses the bathroom & is placed closest to the bathroom. The other patient is either bed bound or uses the bedside commode.
- Use hospital disinfectant wipes on surfaces in bathroom and room frequently.
- Keep the curtains closed between the patients.
- HCW: Consider staffing with different nurses.
- Do not cohort these immunocompromised patients: those with Cancer undergoing active chemotherapy, neutropenia, BMT, Solid organ transplant, post transcatheter valve (MitraClip or TAVR), HIV with CD4 $\leq$ 200
- Visitors follow Isolation signage, stress hand hygiene.

Guidance for Aerosol Generating Procedures (AGP)

Aerosol Generating Procedures (AGPs) are any procedure carried out on a patient/resident/client, which can induce the production of aerosols of various sizes, including droplet nuclei. Procedures that generate aerosols or droplet nuclei in high concentration present a risk for opportunistic airborne transmission of pathogens not otherwise spread by the airborne route (e.g., SARS, SARS CoV 2, influenza) and increase the risk for transmission of organisms known to spread by the airborne route (e.g., TB). **Alternatively, a regular cough and procedures that may induce a regular cough would not be considered AGP.**

A negative air room if available, or a private room with the door closed is preferred. If cohorted, close curtain and keep door closed during procedure. The 'AGP In Progress' sign (Appendix B) should be posted outside of the room for the duration of the procedure. For additional cohorting and AGP recommendations, see Appendix C. Consult Respiratory Therapy for AGP questions.

- During the aerosol-generating procedure: Limit non-essential personnel during AGP and remove visitors from the room during AGP and for 1 hour afterward when applicable.
- Limit transport and movement of the patient outside of the room to medically essential purposes.
- Consider providing portable x-ray equipment to reduce the need for patient transport.
- To the extent possible, patients with known or suspected COVID-19 should be housed in the same room for the duration of their stay in the facility (e.g., minimize room transfers).
- Patients should wear a face mask to contain secretions during transport. Refer to Policy 11021 *Transportation of Patient with Communicable Infection*.

https://ucdavishealth.ellucid.com/documents/view/308

		Airborne transmitted infection[2] (e.g. TB, measles, varicella)		Droplet transmitted infections[2] (e.g. influenza, adenovirus, COVID-19[3]) Refer to ATD Policy 2002	
		PPE	Room criteria	PPE	Room criteria
Type of Procedure	Aerosol Generating Procedure (AGP)	PAPR or N95 with goggles or face shield, gown, gloves	Airborne Isolation room	PAPR or N95 with goggles or face shield, gown, gloves	Refer to Rooming Algorithms
	Not Aerosol Generating Procedure	PAPR or N95	Airborne Isolation room	Face mask with goggles or face shield, gown, gloves	Refer to Rooming Algorithms

Aerosol Generating Procedures (AGP)[5]:		
Endotracheal Intubation/Extubation	Tracheostomy Change	Sputum Induction
Bronchoscopy, BAL, Mini-BAL	Tracheostomy Mist/Care	Pulmonary Function Test (PFT)
High Frequency oscillatory ventilation	Nebulized Treatments	Chest Physiotherapy (Vest, IPV, etc.)
Non-Invasive Ventilation (BiPAP, CPAP)	Deep Suction	Cough Assist (Quad or Mechanical)
MV Circuit Break (with flow)	Cuffless ETT	Manual Ventilation (BVM)
Manipulation of ETT (cuff deflation)	Direct Laryngoscopy	CPR
Operative/Procedural invasive nasopharyngeal/sinus washing, aspirate, and scoping	Operative/Procedural excision or biopsy of extrapulmonary TB (e.g. Potts Disease)	High Flow Nasal Cannula Oxygen delivery system (including Optiflow and Airvo)
Autopsy/Biopsy of lung tissue		

1. ***Per Cal-OSHA regulation Title 8, Section 5199, (g) (3) (B),*** *http://www.dir.ca.gov/Title8/5199.html*
2. *https://www.dir.ca.gov/title8/5199a.html* and https://infectioncontrol.ucsfmedicalcenter.org/isolation-table
3. **Novel Respiratory Isolation Precautions** (Airborne Isolation with eye protection, gloves and gown in Negative Pressure Room) must be in place for patients with frequently ongoing or continuous HRAGP,
   Respiratory Isolation Precautions (face mask with eye protection, gloves and gown) are in place for patients with discrete HRAGP or no HRAGP
4. Other Droplet Transmitted infections not outlined by ATD Standards (e.g. RSV, rhinovirus, parainfluenza, human metapneumovirus), negative respiratory viral evaluation, no concern for respiratory infection
5. Zhonghua Jie He He Hu Xi Za Zhi. (2020). Expert consensus on preventing nosocomial transmission during respiratory care for critically ill patients infected by 2019 novel coronavirus pneumonia. *Chin Thoac*. 20;17(0): E020. doi: 10.3760/cma.j.issn.1001-0939.2020.0020. [Epub ahead of print].

Discharge

If a patient is discharged still on isolation for COVID-19, they should be advised to remain under home isolation until they have had no fever for at least 72 hours (that is three full days of no fever without the use medicine that reduces fevers) AND other symptoms have improved (for example, when their cough or shortness of breath have improved) AND at least 10 days have passed since their symptoms first appeared.

Symptomatic patients discharged with pending COVID-19 tests should be instructed to go on home isolation until test results are known. Asymptomatic patients discharged with a pending COVID-19 surveillance tests do not need to be instructed to go on home isolation unless they subsequently develop symptoms.

Pre-approval from either county public health or Infection Prevention is **not** required to discharge a COVID-19 positive patient. Clinical Case Management notifies the patient's county of residence via fax for COVID-19 positive discharged patients. Providers should consult the "FAQ For Providers Discharging COVID-19 Patients" for additional discharge related information.

Post-Mortem Care for COVID and COVID rule out

Nursing staff should adhere to hospital policy 4001 (formally IV-01) Post-Mortem Care and Release of Remains. https://ucdavishealth.ellucid.com/documents/view/451
Additionally, the following are recommendations form CAHAN & Sacramento County Coroner, Dr. Kimberly Gin.

California Dept. of Public Health
https://www.cdph.ca.gov/Programs/CHCQ/LCP/Pages/AFL-20-24.aspx

- Follow standard precautions.
- When lifting and moving the body, because of the possibility that air may be expelled from the body, the face of the deceased should be covered temporarily with a disposable face mask and placed in a body bag. Enclosing the deceased in a body bag also contains body fluids to prevent contact.

Sacramento County Coroner's Office

- Wear appropriate PPE (Gloves, gown & googles)
- Place face mask on expired patient
- Handwrite "infectious – COVID positive" or "COVID rule out" on toe tag and UCDMC Decedent Affairs Expiration worksheet
- Double bag patient (body bag)
- Wipe down outer body bag with a sanitizing wipe

Testing Strategy

Symptomatic Diagnostic Testing

UC Davis Health tests all individuals with symptoms consistent with COVID-19 using the Symptomatic diagnostic testing workflow which is associated with the EPIC ICON Isolation and Beaker (lab) workflows.

Symptoms compatible with COVID-19: fever, cough, shortness of breath or difficulty breathing, chills, repeated shaking with chills muscle pain, headache, sore throat, new loss of taste or smell, diarrhea.

Symptoms unlikely to be consistent with COVID-19: rhinorrhea, sinus congestion or pain, conjunctivitis, lymphadenopathy, nausea, vomiting, rash.

*When seeing these patients, the full differential diagnosis should be considered, and testing done appropriately. Consider making diagnosis and testing based on clinical presentation. Testing that maybe helpful includes C0VID-19 testing, as well as chest x-ray. If the patient tests positive for influenza further viral testing is unlikely to be helpful.

Repeat testing of positive patients should be done through the Symptomatic Diagnostic Testing workflow.

Exposure to known COVID-19 patient	Symptoms: fever/acute respiratory symptoms (cough shortness of breath), myalgia	Testing
No	No	Not recommended
No	Yes	Test
Yes	No	May test on a case by case basis depending on data of exposure.
Yes	Yes	Test

To test symptomatic patients, use the COVID-2019 RNA Qual order and select the COVID-19 Symptomatic Diagnostic Testing and Isolation panel.

NOTE: This panel sets the patient infection status to Rule Out COVID-19 and includes isolation precaution orders.

Asymptomatic Surveillance Screening

We are now doing COVID-19 Surveillance Screening for the following asymptomatic patient populations:

- All Admissions to the hospital will undergo surveillance testing (unless clinically indicated testing more appropriate). This includes patients from the ED, transfers from other facilities, and direct admits from clinics or other UCDH ambulatory sites.
- All patients undergoing operative surgery or procedure (therapeutic or diagnostic) in one of our procedural areas in the hospital or ambulatory sites will undergo surveillance testing (ideally 24-96 hours in advance). This does not apply to inpatients who tested negative upon hospital admission who later go for a procedure or operation.
- All OB patients on Labor and Delivery will undergo surveillance testing.
- The following ambulatory patients will undergo surveillance testing:
    - All patients with symptoms of influenza like illness (not technically part of asymptomatic surveillance screening process but included for completeness sake)
    - Patients the clinic is arranging an admission (regardless of admit reason)
    - All patients that require a negative COVID test for them to go to a congregated living facility (i.e., 5150, Prisoners, Skilled Nursing Facility, Board and Care)
    - Cancer Center:
        - Patients receiving outpatient chemotherapy
        - Patients who have developed neutropenia
        - Head and neck cancer patients undergoing radiation therapy

To screen asymptomatic patients, use the COVID-2019 RNA Qual order and select the COVID-19 Asymptomatic Screening panel.

Providers can use their discretion if they feel patients do not require pre-op testing, especially if the surgery or procedure is not an aerosol generating procedure (AGP).

NOTE: This panel does NOT set the Rule Out Infection status on the patient but does include a COVID-19 surveillance communication order for nursing.

The Asymptomatic Surveillance workflow should **NOT** be used for repeat testing of patients who are known positives, admitted for COVID-19. Repeat testing of positive patients should be done through the Symptomatic Diagnostic Testing workflow.

Risk Factors and Testing Considerations

When choosing testing, consider how your management would change with the result. There is no specific treatment for COVID-19 virus. However, there are treatments for influenza. Patients with risk for severe disease – such as age over 60, diabetes mellitus, cardiovascular disease, pulmonary diseases or immunosuppression – may warrant testing because a specific diagnosis may help with hospital care and treatment if the patient's condition worsens.
Obtaining an ID consult will help direct antiviral therapy patients.

Because the sensitivity of SARS-CoV-2 testing is not 100% and may additionally be limited early in infection and in real world testing conditions a single negative test, while helpful, is not always definitive. In some circumstances a repeat SARS-CoV-2 test is appropriate.

Isolation Removal Workflow

All Adult Units

- Isolation for COVID-19 negative patients may be removed through normal isolation workflow (contact the physician teams and obtain an order to discontinue isolation) for any patient. that is ***not*** at high risk of severe illness from COVID-19.
    - High risk is defined as patients that are: 65 or older, reside in a congregate living facility, have chronic lung disease, are immunocompromised, are severely obese (BMI ≥ 40), have diabetes, have chronic kidney disease requiring dialysis, have liver disease, are in an ICU, or have had multiple COVID-19 diagnostic tests ordered in the current admission.
    - May consider ID consult for high risk patients.

- Infection Prevention nurses will continue to follow standard workflows for reviewing isolation on all units. If the Infection Prevention nurse notes a COVID-19 related EMR isolation-infection flag mismatch, they will contact the charge nurse/bedside nurse of the patient to recommend isolation removal. This Infection Prevention review does not obviate the need for unit nurses to follow the above-mentioned isolation removal workflow.

- Removal of isolation on positive COVID-19 patients may be removed through normal isolation workflow (contact the physician teams and obtain an order to discontinue isolation). Patients must meet the following criteria before removal of isolation on hospitalized adult COVID-19 positive patients:
    - It has been at least 10 days since initial positive test date, **AND**
    - Patients that were initially tested due to symptoms (i.e. not surveillance tests) must have resolution of fever without use of antipyretics and have improvement in respiratory symptoms (e.g. cough, shortness of breath) **AND**
    - There have been two negative tests collected 24 hours apart
        - The first clearance test cannot be collected before 10 days have passed since initial positive test date and, for patients that were symptomatic, symptoms have resolved, as described above.
- When determining necessity of isolation in previously COVID positive patients that were discharged still on isolation and are subsequently readmitted, the following criteria may be used:
    - If COVID positive patient is readmitted less than 10 days from symptom onset, the patient should be placed back in isolation and ID COVID physician should be contacted for consultation.

- If COVID positive patient is readmitted greater than 10 days from symptom onset, with no respiratory symptoms, isolation is not needed, so long as admission COVID screen is negative (one negative is sufficient).
- If COVID positive patient is readmitted greater than 10 days from symptom onset with respiratory symptoms, isolation should be started. If admission COVID screen is negative, Infectious Disease COVID physician should be contacted to determine need for repeat testing and isolation.

Pediatric Patients

- For pediatric patients, isolation for COVID-19 negative patients will be removed through normal isolation workflow (contact the physician teams and obtain an order to discontinue isolation). For any situations that are unclear, please contact Pediatric Infection Prevention physician on call.

PPE for COVID-19 Testing

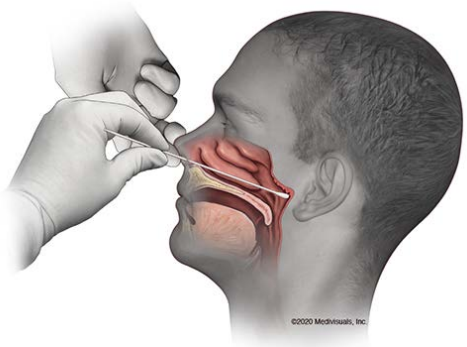
For all settings, when obtaining nasopharyngeal specimens wear appropriate PPE, including face mask, eye protection, gown and gloves. Keep exam/room door closed. Masking of patients for whom it is not contraindicated is outlined below.

In outpatient settings, all patients should be masked (so long as they can tolerate it) except when collecting a nasopharyngeal swab.

In inpatient settings, symptomatic patients should be source controlled when leaving their rooms for medically necessary procedures. Continuous masking of symptomatic patients in their room is not needed so long as staff wear appropriate PPE (at minimum face mask, eye protection gown and gloves) in the patient's room. Asymptomatic patients pending COVID-19 surveillance testing should be masked (as tolerated) whenever a staff member is present in the patient's room. Staff must wear a mask when in the rooms of asymptomatic patients with pending COVID-19 tests. If the patient cannot tolerate a mask, the staff member should also don eye protection in addition to a mask.

Specimen Collection Process

Testing for COVID-19 involves inserting a 6-inch long swab (like a long Q-tip) into the cavity between the nose and mouth (nasopharyngeal swab) for 15 seconds and rotating the swab several times. The swabbing is then **repeated on the other side** of the nose to make sure enough material is collected. The swab is then inserted into a container and sent to a lab for testing. Refer to the testing video on our web page: https://health.ucdavis.edu/coronavirus/coronavirus-testing.html



Pediatric COVID-19 Testing Algorithm (April 5, 2020)

There is presently no restriction on testing and no need for test order approval for COVID-19. If/when we enter a surge state and requests exceed testing ability, we will rely on the tier testing algorithm.

Tier 1 (Highest priority):
PUI: Hospitalized child, in ICU setting, with signs/symptoms consistent with COVID-19, unexplained by another pathogen.
Surveillance Testing: Asymptomatic patient such as: 1. Child undergoing surgery, bronchoscopy, endoscopy (both inpatient and outpatient), swab within 48 hours of anticipated procedure; 2. Child admitted for renal transplant without COVID testing previously; 3. Consider for infant transferred from outside institution without recent COVID testing within 72 hours.

Tier 2: **Hospitalized child (not in above categories)**

1. With signs/symptoms consistent with COVID-19, unexplained by another pathogen
2. Asymptomatic but with close contact with a suspect or laboratory-confirmed COVID-19 patient, or who has a history of travel from affected geographic areas within 14 days of symptom onset.
3. Asymptomatic but residing in congregate living facilities e.g. shelter, group home or homeless.
4. Newborn born to mother with confirmed or suspected COVID-19 infection

Tier 3: Outpatient/ED (not admitted)

1. With signs/symptoms consistent with COVID-19, unexplained by another pathogen, who has an underlying chronic medical condition that would put them at risk for severe disease (immunocompromised, chronic lung disease, cardiac disease, etc.)
2. With signs/symptoms consistent with COVID-19, living in a household with another person with a co-morbid condition or a person age >60 years, residing in congregate living facilities, or household contact of a healthcare worker.

For Tier 1 PUI patients & Tier 2, send rapid RSV, rapid influenza, and Respiratory pathogen panel on admission, if POC tests are negative.

Testing for COVID-19 may be based on (1) symptoms consistent with disease: fever with any of the following such as: cough, pharyngitis, hypoxia, lung infiltrates on CXR, or for those with other resp. pathogens on high level ventilator support or heart failure. Or, testing may be requested for (2) asymptomatic patients who require surveillance testing.

Management of Healthcare Personnel (HCP)

Now that community spread is occurring, all healthcare personnel (HCP) are at some risk for exposure to COVID-19, whether in the workplace or in the community. A conservative approach and a lower threshold for evaluating HCPs is used in order to quickly identify early symptoms in HCPs to prevent transmission from potentially infectious HCPs. The signs and symptoms for HCP assessment are broader than those used for the general public and include fever (either measured temperature ≥100.0°F or subjective fever), cough, shortness of breath, sore throat or rhinorrhea. Other symptoms that may be considered include muscle aches, nausea, vomiting, diarrhea, abdominal pain, headache or fatigue.

Healthcare personnel (HCP) If symptoms develop, remain at home until asymptomatic and follow the guidance in Appendix A.

Employee Symptom Screening

We will be symptom screening all employees before they enter the hospital or clinic location.

Employees will need to complete a symptom screening survey (certifying they are not ill) prior to entering.

Hospital Process:

1. Employees reporting to work must complete an online form, available by scanning this QR code with a smart phone's camera
    - A link to the form is on the InsideOut employee website, near the top of the page.
    - QR codes will be also be posted in multiple places near entry points.
    - Employees may want to bookmark the link, as they will be using the form every workday.
    - Some paper surveys will be available but take longer.
    - The online form takes less than a minute to fill out on a smart phone.
    - There will also be a computer available, but there will likely be a line, so it's much better if staff complete the survey before getting into line.
    - Employees must have their badge with them. (Badges are to be displayed at all times.)
2. After completing the form, if they have no symptoms, staff will have an 'Approved to Work' screen to show to the screener.
3. They will receive a colored dot for their badge to show they have been screened for the day.
    - The employee will also receive an email they can show at the front desk, if needed.
4. Employees who do not pass symptom screening, should contact their manager or supervisor immediately to let them know they are unable to report for work.
    - Non-employees (vendors, etc.) who do not pass symptom screening will be encouraged to reach out to their primary care provider.

Only four hospital entries will be open. These are the Main Entry (South side), the West Entrance, the East Entry door (near the ED), and the North Addition main entry doors. Screening will be in place at these entries 24 hours a day, 7 days a week. All other doors into the hospital building will not open for employee access.

Ambulatory Care and Cancer Center Process:
Everyone will use the same online screening form on a daily basis (via QR code or link on Inside Out). Outpatient clinics will be issuing the same color-coded stickers in specific clinic locations where employees and providers travel from clinics to the hospital to allow them to bypass a second screening of the day.

Managers and supervisors will need to re-direct employees without the 'dot of the day' on their badge back to be screened.

Pregnant Provider COVID-19 Staffing Recommendations

Given that pregnant women have been at higher risk of severe outcomes in other novel respiratory infections, the potential risks of indicated preterm delivery, and the possibility that pregnant women may still be at greater risk of complications from COVID-19 due to our minimal data available on severity/complications in pregnancy, *we recommend that pregnant faculty, trainees, and staff limit direct care of patients with confirmed or suspected COVID-19 whenever possible.* In the event that the needs of our patients prevent removing pregnant employees from caring for COVID-19 patients, pregnant employees should wear a regular face mask while caring for these patients. We will continue to monitor the available data and will update this recommendation in the future if necessary.

During the COVID-19 pandemic, we recommend that pregnant faculty, trainees, and staff avoid in-person patient care and patient contact after 37 weeks of gestation. This will minimize maternal infection risk, thus minimizing risk of mother/infant separation after birth if a mother is COVID-19 positive.

Masking Guidelines

UC leadership continues to consult with expert infection prevention providers across the system to guide our recommendations for personal protective equipment and other measures to limit the spread of the COVID-19 virus. Evidence shows the virus is most often transmitted through droplets generated by coughs and sneezes, and by contact with contaminated surfaces. Our experts have recommended using standard droplet precautions with face mask, eye protection, and gowns and gloves as needed, when caring for all patients who may have COVID-19. (NOTE: This is not a change from our current policy.)

These experts recommend reserving airborne precautions and associated PPE (N95 with eye protection and PAPRs) for procedures that result in aerosolization of the virus when a provider is closer than six feet from the patient. These recommendations are aligned with guidance from the World Health Organization and the Centers for Disease Control and Prevention, and they are unanimously supported by our infection prevention and healthcare epidemiology programs, infectious diseases experts, occupational health physicians, and our chief medical and nursing officers.

Universal Masking

We will be implementing Universal Masking for the hospital and clinics, effective Monday, April 20. This will be evaluated a pilot project, as it is partially dependent on the lack of a patient surge and a continued supply of available masks. The evaluation will determine the level of mask consumption, compliance with physical distancing, patient volume, and the reliability of a continued steady supply of masks.

The masking guidelines are focused on extended wear of regular face masks by clinical and non-clinical healthcare workers and not for N95 masks which are used for aerosol generating procedures and Airborne precautions.

- Upon entry into the hospital, employees will be screened and provided a regular face mask to wear.
- Health care workers should wear that mask, appropriately, for the entire workday. Masks that are worn during patient care, must be disposed of once removed. (See Appendix B for Extended Use and Reuse Guidelines.)
- In our outpatient clinics, staff will receive masks from their manager.
- Unit and Department Managers should ensure that N95 masks are only used where clinically indicated which is for aerosol generating procedures and Airborne precautions.
- Universal Masking is not being implemented in non-clinical buildings, however, employees should stay 6 feet apart at all times, or there should be a barrier in place (example: cubicle walls). If that is not possible, a face covering needs to be worn. In non-clinical areas, these face coverings can be cloth or homemade (with no logos). Clinical masks should not be worn in non-clinical settings.

Patients and visitors for whom masking should not be used include all children younger than 2 years of age and persons who cannot easily remove a mask on their own should it become necessary (e.g. impaired neurologic or cognitive function).

It is the responsibility of all staff and faculty to be effective and vigilant stewards of PPE, in particular face masks, as masks which are used and thrown away today will not be available for use in future days or during a patient surge. We have no guarantee of re-supply when current masks are consumed.

While asymptomatic cases of COVID-19 can exist, whether and how asymptomatic people may infect others is still unknown. In fact, if asymptomatic patients shed live virus, it may be more likely that environmental contamination is more common than droplet spray, in the absence of coughing. People wearing masks need to remember this does not reduce the need to ensure clean hands when touching your face – including to adjust the mask.

Emergency Department (ED) Extended Use and Reuse Masking Procedure for Undifferentiated Patients

Purpose: In order to care for the undifferentiated patient population presenting to the ED, all ED staff should continuously wear a ***regular face mask*** during their shift by following the principles outlined in the ED

Extended use refers to the practice of wearing the same *face mask* for repeated encounters with multiple patients, without removing the mask between the encounters.

Reuse refers to the practice of using the same face mask for multiple encounters with patients but removing it ("doffing") between some of the encounters. If planning to reuse, the face mask should be stored in a clean, dry location that is labeled between encounters.

Guiding Principles:

- Implement contact and droplet precautions for the care of rule out or confirmed COVID19 patients.
- ED staff should minimize waste of masks and make efforts to keep masks clean and dry.

- Extended use is preferred over reuse because it is safer to leave a mask in place, to reduce the risk of self-contamination through frequent donning and doffing of the same equipment.
- Face masks can be reused in a careful and limited way. See Appendix B: Extended Use and Reuse Guidelines
- Guidance applies to masks for a single person (no sharing).

General Guidelines

- All supplies of face masks will be stored in secured, designated areas and issued to staff at the start of their shift by their designated mask manager. When necessary, additional masks can be obtained from the designated mask manager.
- Aerosol Generating Procedures: If participating in an aerosol generating procedure on a COVID positive or rule out patient, such as an intubation, airborne precautions should be used (PAPR or N95 with eye protection) rather than a regular face mask
    - N95 may be used for extended use or reused after worn during an aerosol generating procedure ***if Appendix B: Extended Use and Reuse Guidelines*** are followed.
    - Replace the N95 when it has reached the end of its use through being damaged, distorted in shape/form, obviously soiled or moistened.
- Collection of Nasopharyngeal swab for testing is *not* considered an airborne procedure and therefore droplet precautions (face mask with eye protection) are to be used.
- ***ED staff must not place masks on chin, forehead or neck***. Masks used in this manner will be considered contaminated and must be discarded.
- Masks should be discarded at the end of each shift.

Doffing Face Mask Process*

1. Perform hand hygiene.
2. Remove the mask by holding the ear loops. The front may be contaminated, so remove slowly and carefully.
3. After removing mask, visually inspect for contamination, damage or distortion of shape. If contaminated, wet, damaged or distorted the mask should be discarded, ***and a new mask obtained from designated mask manager.***
4. If the regular mask was worn with a face shield and NOT visibly contaminated or damaged and *intended for reuse,* carefully store in a clean, dry location that is labeled (staff name and date).
5. Perform hand hygiene.

**Mask may be doffed per process when eating, during breaks, etc.* Version 3, March 30, 2020

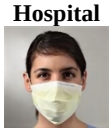
References: **Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH) https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html https://www.cdc.gov/niosh/topics/hcwcontrols/pandemic-planning.html**

Appendix A: HCP Process for COVID-19 Exposure and ILI Symptoms

5/21/2020

Known COVID-19 Exposure (e.g. family member or close contact with + COVID test) **Asymptomatic**	**Influenza Like Illness** **Symptomatic**
Persons who are not currently experiencing symptoms = Asymptomatic • Wear a mask at all times while in the healthcare facility for 14 days from last date of exposure. • Be restricted from contact with severely immunocompromised patients (e.g., BMT current admission, new leukemic without count recovery from induction, ANC count <500) during masking period. • Adhere to hand hygiene, respiratory hygiene, and cough etiquette in CDCs interim infection control guidance (e.g., cover nose and mouth when coughing or sneezing, dispose of tissues in waste receptacles), • Self-monitor for symptoms: Monitor for fever (≥100) with shortness of breath and/or cough. • Employee may return to work while test is pending.	• Follow sick policy for calling off (inform supervisor if COVID or ILI symptoms) • Complete the COVID-19 Employee Screening and Testing Form to be contacted for testing: https://hr.ucdavis.edu/departments/elr/unit-assigments-health • Contact PCP if symptoms warrant If Tested **Positive and Symptomatic:** *Symptom-based strategy* May return to work when at least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications ***and*** improvement in respiratory symptoms (e.g., cough, shortness of breath); ***and***, at least 10 days have passed since symptoms first appeared If tested **Positive and Asymptomatic**: *Time-based strategy (for persons who tested positive without symptoms)* May return to work when 10 days have passed since the date of their first positive COVID-19 diagnostic test assuming they have not subsequently developed symptoms since their positive test. If they develop symptoms, then the *symptom-based* strategy should be used. https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html If tested **Negative**: • HCP with ILI symptoms must remain home. • HCP may return to work when signs and symptoms of ILI are resolved for 24 hours without the use of antipyretics. • Return to work clearance through Employee Health is not necessary. • Follow policy #2150 Communicable Disease Management for Employees. If test **Declined**: HCP may return to work when signs and symptoms of ILI are resolved for 72 hours without the use of antipyretics. Employee may not return to work if tests are pending.

Appendix B: Extended Use and Reuse Guidelines Updated 4/10/20

<table>
<tr><th>Extended Use Process by PPE</th><th>Extended/ Reuse</th><th colspan="2">DEFINTIONS: Extended use Mask and/or Face shield/goggles -Continually wearing Mask and/or Eye Protection between multiple patients;
REUSE of Mask: Use mask, store and Reapply</th></tr>
<tr><td>Once a Day Mask given upon entry to Hospital
  </td><td>Mask Extended Use Yes

Mask Reuse YES</td><td colspan="2">Intended for REUSE for face to face with other employees, wearing in hallways, cafeteria or desk.
May take on and off throughout the day[1, 2]

Note: if worn for patient care must dispose of mask when removed unless exceptions apply below.

Follow guidelines for PPE Appropriate Use and Discard Indications

NOTE: DO NOT WEAR HOMEMADE OR COTTON MASKS INSIDE THE HOSPITAL</td></tr>
<tr><td colspan="4">Masking Policy for Extended Use and Reuse during Patient Care Interactions</td></tr>
<tr><td>Face Mask Alone
  </td><td>Mask Extended Use Yes

MASK REUSE NO</td><td>Mask Extended use or Continuous mask wear between patients allowed [1,2]

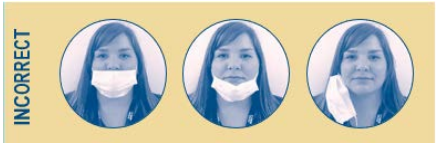
NOTE:
• Do not wear in a Droplet Precaution room without goggles/face shield
• Do not wear for aerosol generating procedures (AGP)</td><td rowspan="6"><u>PPE Appropriate Use and Discard Indications</u>

<u>1. PPE general use guidelines</u>
• Always perform hand hygiene before donning AND after doffing PPE
• Do not touch mask exterior. If mask is touched perform hand hygiene

<u>2. Mask Discard information</u>

For all scenarios, discard masks,
• If wet, soiled, or damaged
In patient care areas:
• Discard prior to leaving work area
• Discard if mask has been removed for ANY reason unless protected the whole time worn by a face shield
• Discard N95 mask after AGP if a long face shield was not worn

<u>3. Reuse and storage of N-95</u> is only allowed in brown paper bag. Put date and name on bag.

<u>Inappropriate mask use:</u>
Do NOT allow mask to hang off one ear, or sit below the nose or face
 

<u>4. Goggle or Face Shield use information</u>

• Do not touch exterior or face shield or goggles during use.

Remove and clean goggles or face shield
• if visibly soiled.
• May Reapply after disinfecting

Discard face shield or goggles
• If damaged

Inappropriate eyewear use:
• Do NOT wear goggles on top of head between uses

<u>Cloth Skull Cap/Hair Cover</u>
• Not considered PPE.
• Employee may wear own cloth skull cap to cover hair if desired as long dress code is followed.

Shoe Covers: Do not need to be worn.</td></tr>
<tr><td>Face Mask with Eye Protection (goggles or face shield)
  </td><td>Mask Extended Use Yes

MASK REUSE NO</td><td>For Droplet Precautions or areas multiple influenza like illness patients are seen

Extended use or Continuous wear of mask[1, 2] alone or with face shield[4] between patients is allowed</td></tr>
<tr><td>N95 Mask Alone
  </td><td>Mask Extended Use Yes

MASK REUSE NO</td><td>Mask Extended use or Continuous mask wear between patients allowed [1,2]

NOTE: Do not wear for AGP without goggles or face shield</td></tr>
<tr><td>N95 Mask with Face Shield
  </td><td>Mask Extended Use Yes

MASK REUSE YES, if Protected by Face Shield</td><td>For Aerosol Generating Procedure (AGP)s

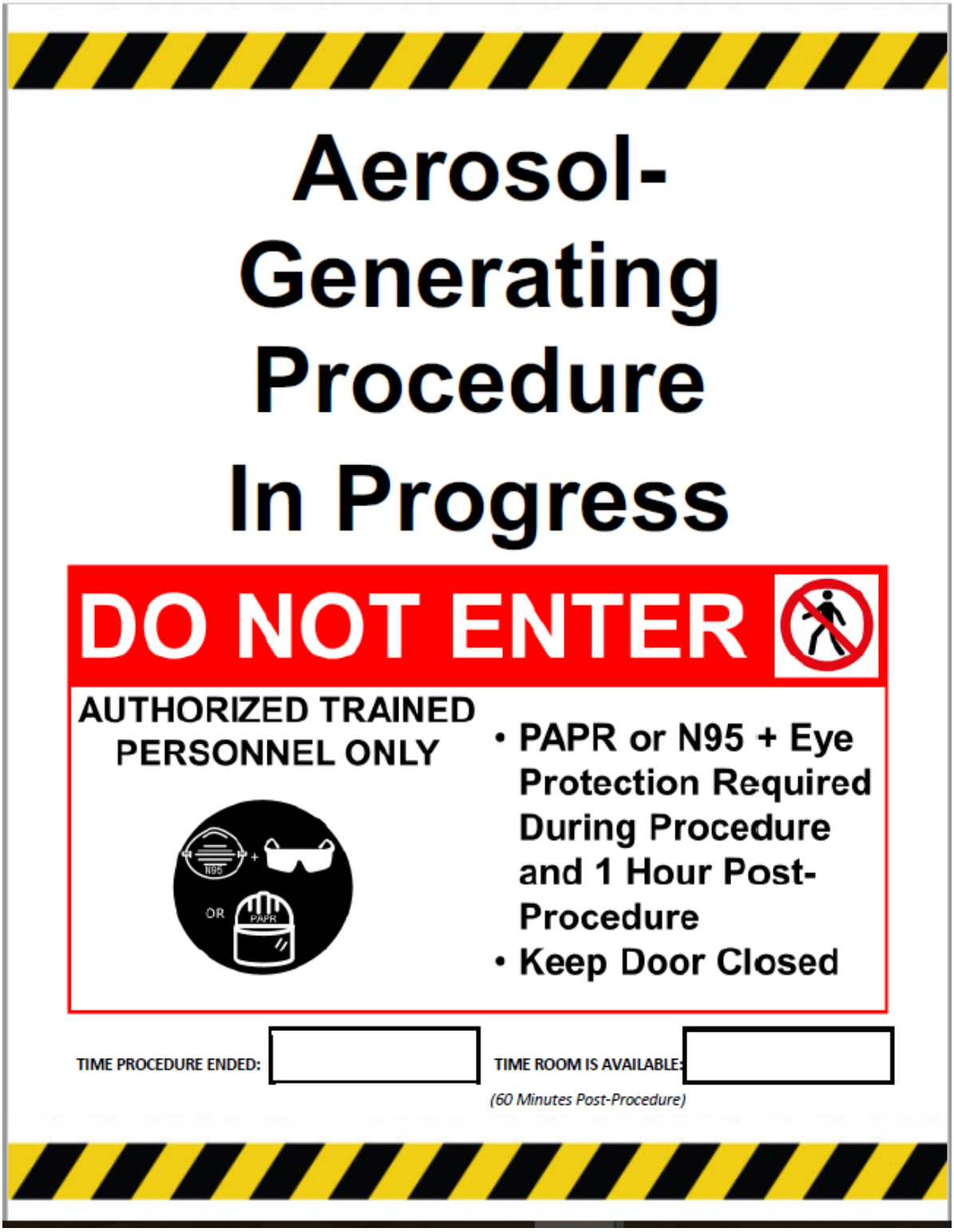
Extended use or Continuous wear of mask[1,2] alone or with face shield[4] between patients is allowed

N95 May be REUSED (taken off and stored until next use[3]) only if a long face shield protected the mask during use, mask is not damaged [2,] and fit can be maintained.</td></tr>
<tr><td>N95 Mask with Goggles
  </td><td>Mask Extended Use Yes

MASK REUSE NO</td><td>For Aerosol Generating Procedure (AGP)s

Extended use or Continuous wear of mask[1,2] and goggles[4] between patients is allowed</td></tr>
</table>

Appendix C: Aerosol Generating Procedure Sign

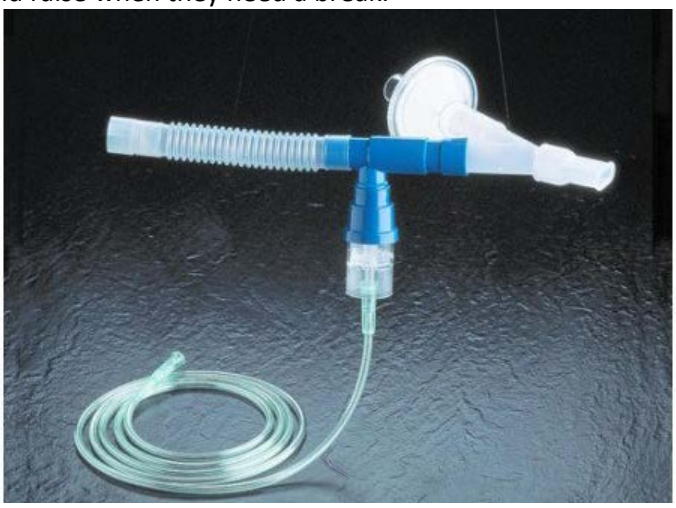


NOTE: Based on identified air exchanges some rooms may need less than an hour of PAPR or N95 use post procedure.

Appendix: D Cohorting and AGP Recommendations

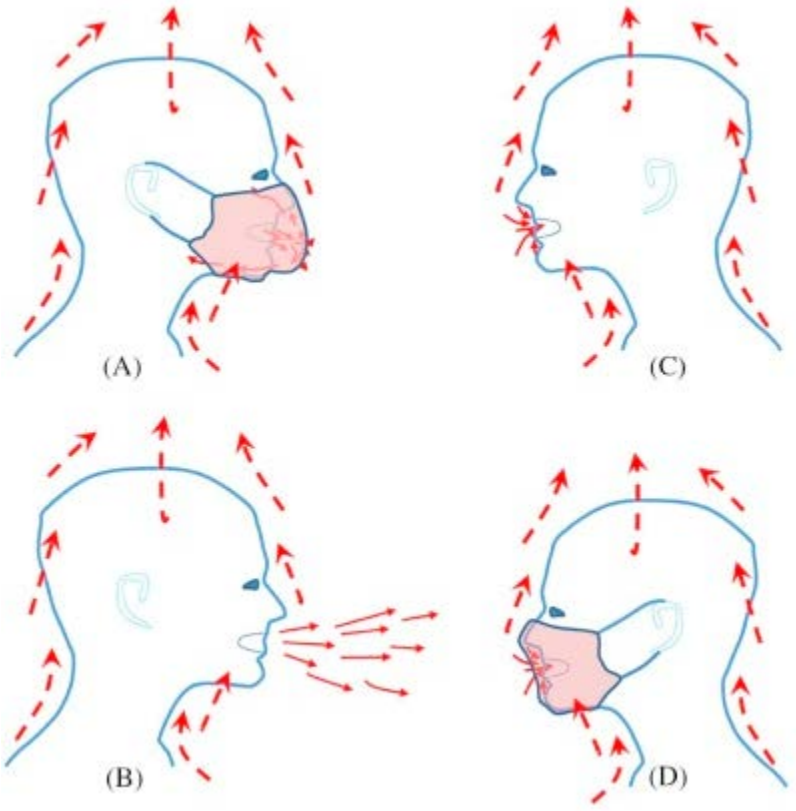
3/20/20

The following table is a guide based on the in vivo evidence available on bioaerosol dispersion distance to limit the exposure to people in the room during an APG:

Nebulizers	Avoid unnecessary nebulization and cough inducing aerosolized medication. Consider metered dose inhaler (MDI) with spacer or soft mist inhaler (SMI). RT to deliver nebulizer via filter (Respirgaurd image below). Patient will communicate via hand raise when they need a break. 
Oxygen Therapy and High Flow Nasal Cannula (HFNC)	Avoid using Venturi systems, which contain large open ports on the mask. When using HFNC, place a loop mask over HFNC when room cohorting. 

Tracheostomy Mist/Oxygen Delivery	Avoid using Venturi systems, which contain large open ports on the mask. Use HME and avoid heated mist. 
Non-Invasive Ventilation (BiPAP/CPAP)	Place 'blue elbow' connector between the mask and circuit. Place HME filter between blue connector and exhalation valve. Assure the mask properly fits the patient to avoid leaking. 

Manual Ventilation	Utilize HME filter between AmbuBag and mask or artificial airway.  

Chest Physiotherapy (CPT)	CPT procedures cause coughing to clear secretions. Consider first: High Frequency Chest Wall Oscillation (HFCWO) or Manual CPT with the patient donning a loop mask during procedure. Positive Airway Pressure (PAP), Oscillatory Positive Expiratory Pressure (OPEP), and IPV cannot be performed while wearing a loop mask and should be avoided while patient is cohorting. 

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Li, J. (2020). Evidence based recommendations on preventing nosocomial transmission for clinicians while taking care of coronavirus infected patients. *ISAM.* https://isam17.worldsecuresystems.com/BookingRetrieve.aspx?ID=138598.

Wei, J. & Li, Y. (2016). Airborne spread of infectious agents in the indoor environment. Am Journ Infect Cont. 44(9):S102-S108. https://www.sciencedirect.com/science/article/pii/S0196655316305314.

Zhonghua Jie He He Hu Xi Za Zhi. (2020). Expert consensus on preventing nosocomial transmission during respiratory care for critically ill patients infected by 2019 novel coronavirus pneumonia. *Chin Thoac*. 20;17(0):E020. doi: 10.3760/cma.j.issn.1001-0939.2020.0020. [Epub ahead of print].

Document Updates

5/21/20:

- Updated Isolation Removal Workflow
- Updated Appendix A – RTW criteria to reflect updated CDC guidance

5/13/20:

- Updated Discharge section
- Update to AGP list for clarification
- Update to Asymptomatic Surveillance Screening
- Update to PPE for COVID-19 Testing

5/8/20:

- Update to Home Care Services section
- Update to Isolation Removal Workflow
- Update to Symptomatic Diagnostic Testing

5/6/20:

- Added section: Ambulatory Visits for Patients with Suspected or Confirmed COVID-19
- Updated Visitor Management section
- Updated Employee Symptom Screening section to remove temperature checks
- Added language to Universal Masking about patients/visitors who should not be masked

4/29/20:

- Updated Appendix A – RTW language for asymptomatic
- Symptoms compatible with COVID-19 updated to reflect new CDC guidelines
- Updated Isolation Removal Workflow for adult units

4/24/20:

- Updated Appendix A – updated screening link, added test declined language
- Updated Isolation Removal Workflow to remove nursing supervisor
- Updated Isolation Removal Workflow to add 2 negative tests language
- Update to Asymptomatic Surveillance Screening

4/20/20:

- Updated Appendix A
- Added Isolation Removal Workflow for pediatric patients
- Updated Asymptomatic Surveillance Screening (added clarifying language)
- Added language to Symptomatic Diagnostic Testing
- Updated Universal Masking (minor changes for clarification)

4/16/20:

- Added section: Employee Symptom Screening
- Added section: Employee Universal Masking
- Added sections to Testing Strategy: Symptomatic Diagnostic Testing and Asymptomatic Surveillance Screening
- Updated Isolation Removal Workflow
- Updated date on Appendix A (to 4/14)

4/14/20 Updates:

- Updated Appendix A
- Clarification on visitor restrictions to include ED
- Clarification on isolation removal workflow (adult ICU's)

4/10/20 Updates:

- Updated Isolation Removal Workflow
- Updated Masking Guidelines for clarification
- Removed Extended Use of Disposable Face Masks section – refer to Appendix B
- Updated: Emergency Department (ED) Extended Use and Reuse Masking Procedure for Undifferentiated Patients to align with Appendix B Extended Use and Reuse Guidelines
- Notation added to bottom of Appendix C

4/6/20 Updates:

- Updated Pediatric COVID-19 Testing Algorithm
- Added Appendix B: Extended Use and Reuse Guidelines
- Reordered appendices

4/3/20 Updates:

- Updated Appendix A
- Updated Aerosol Generating Procedures Tables
- Addition to Discharge section regarding coordination for positive patients
- Updated Post Mortem Care to clarify it applies to positive and rule out patients
- Update to Risk Factors and Testing Considerations
- Added section: Isolation Removal Workflow
- Clarified language around masks for consistency
- Removal of definitions language under Management of HCP
- Removed Adult Testing Algorithm
- Added Home Care Services

4/1/20 Updates:

- Updated Masking Considerations section based on 4/1/20 email from Dr. Kirk
- Added: Emergency Department (ED) Extended Use and Reuse Masking Procedure
- Added "gown" (correction) to Ambulatory Care and Cancer Center section
- Addition to Inpatient Care and Rooming Guide regarding asymptomatic rule-out patients
- Re-ordered section: Moved Rooming Algorithm ahead of Inpatient Care and Rooming Guide language
- Updated Appendix A
- Updated Testing Strategy Chart
- Updated Guidance for Aerosol Generating Procedures (AGP) and AGP Table.
- Updated Testing Considerations

3/26/20 Updates:

- Added: Table of Contacts
- Updated Aerosol Generating Procedure table:
- Added to Guidelines for Patient Pairings with ILI, under list of immunocompromised patients we do not cohort: post transcatheter valve (MitraClip or TAVR)
- Added section: Masking Considerations
- Added section: Extended Use of Disposable Face Masks, N95 Respirators, Goggles/Face Shields
- Added section: Pregnant Provider COVID-19 Staffing Recommendations

- Added section: Specimen Collection Process
- Updated Attachment A: HCP Process for COVID-19 Exposure and ILI Symptoms (several changes)
- Added clarification language, “In an outpatient setting” to: Risk Factors and Testing Considerations