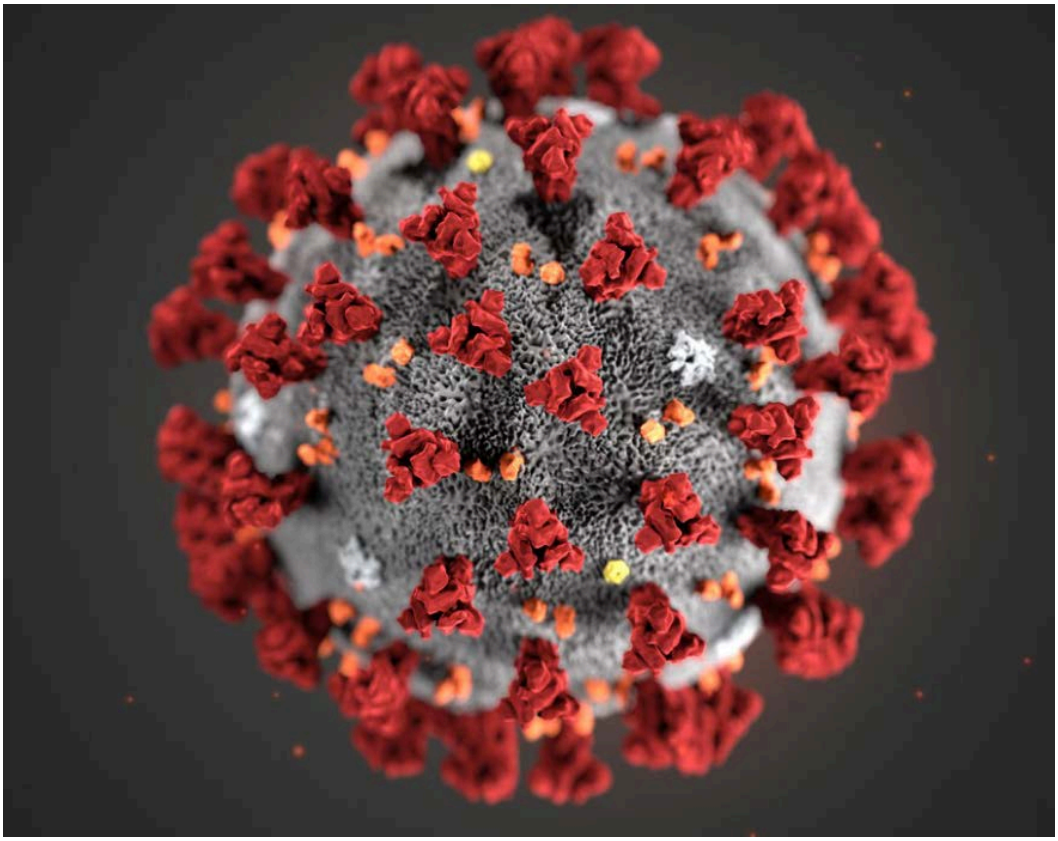
Kaiser Permanente Northern California
Mitigation Phase Playbook
Coronavirus Disease 2019 (COVID-19)



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Executive Summary

Coronavirus Disease 2019 (COVID-19) community transmission is occurring in California outside of the current containment zones that exist at Travis Air Force Base (AFB) and several Northern California community hospitals. Given the length of time community transmission is suspected to have been occurring, the ability of the virus to be transmitted in an asymptomatic manner, and the inability to identify original sources of the infection, containment of the virus to terminate the outbreak is not feasible.

The current national guidelines for addressing the COVID-19 outbreak are based on containment principles. It is critically important that California moves to a mitigation strategy immediately to slow the spread of the virus, reduce the surge on an already stressed healthcare system, provide the right level of care where the vast majority of Californians will only require time limited home isolation, expand testing capability to increase hospital capacity, and to tailor isolation in medical facilities to the known mode of transmission of this virus which is via droplets.

Mitigation will allow us to maintain the function of our healthcare system in the midst of an anticipated significant increase in disease burden expected to last several months based on China's experience.

This playbook provides the summary for a mitigation strategy in the State of California and the hospital systems. Each of the items listed in the mitigation strategy section have detailed operational plans to support them.

Virology

COVID-19 is caused by the Severe Acute Respiratory Syndrome Coronavirus Type 2 (SARS-CoV-2). Much is still to be determined about the virus, but the following characteristics of the virus based on multiple early reports are the following:

- Incubation Period: Estimated to be **2-14 days**
- Mode of Transmission: **Droplets which can spread 3-6 feet within a person coughing**. Reports out of China indicate most infections have occurred in close contacts with family, colleagues, or healthcare workers with a contagious individual. **Asymptomatic individuals have been documented to transmit the virus.** Some evidence of spread has occurred through contact with surfaces contaminated with droplets, but this does not appear to be the primary mode of spread.
- Transmissibility: The level of contagiousness is labeled the R_O. The R_O is estimated to be somewhere between 2-4 depending on the scientific paper. This means that one infected person will *on average* spread the virus to 2-4 individuals. This R_O would make COVID-19 more transmissible than standard influenza and potentially similar to the SARS.
- Severity: **80% of individuals with documented COVID-19 disease have asymptomatic/mild illness**. Different reports **estimate the mortality rate to be between 2-3%**.The mortality rate is likely lower since asymptomatic individuals are less likely to seek care and get tested.
- Convalescence: The period at which an individual is clinically recovered and no longer capable of transmitting the virus is still to be determined. **CDC has determined that viral shedding may occur for 15-30 days after onset of infection**.

Strategies for Viral Control

1. Containment: **Containment strategies are designed to halt the spread of an infection. Ultimately the goal is to isolate individuals with the infection as well as those potentially exposed to the infection with the goal of preventing spread to the general population**. If successful, a containment strategy can prevent further

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spread and terminate an outbreak. Containment requires a high degree of resource intensive measures that include the use of airborne isolation rooms, personal protective equipment, healthcare personnel, and potentially other equipment. Containment measures work when a relatively small number of patients are infected in concentrated locales. However, when an infection spreads into a community, then the measures can be counterproductive since they do not scale to diagnosis, treatment, or containment for large populations.

2. Mitigation: **Mitigation strategies are designed to divide the patients based on severity of symptoms, so individuals receive the right level of care in the right setting. They are designed to minimize the effects of an infection on a population when the infection can no longer be contained.** Mitigation strategies allow for the appropriate use and deployment of resources to respond to a large-scale outbreak that is already embedded in the community.

COVID-19 Epidemiology in California and the West Coast

1. Princess Cruise Ship Evacuees: More than 20 individuals of the cohort evacuated to Travis AFB have required transfer to hospitals because of COVID-19 positive test results. These individuals have had either minimal or no symptoms. Due to containment isolation precautions, they have required a significant amount of personnel and equipment resources, and most community hospitals can only take 1-2 patients given the resource intensive nature of care. No healthcare worker exposures have resulted from this cohort, no documented secondary transmission has occurred. However, all of these individuals met the current definitions of a PUI.
2. Community Transmission: There are two known COVID-19 cases in California with no known travel or other risk factors for COVID-19 acquisition. Solano and Santa Clara Counties each have one case, and both individuals have been hospitalized. Due to not meeting the standard definition of a PUI, multiple healthcare workers were exposed resulting in furloughing of large numbers of hospital staff. Hospital operations were significantly affected in the emergency department, intensive care units, and other allied personnel functions.

   These two individual cases are representative of community transmission. Both were exposed some 2-14 days prior to developing infection. Both likely exposed multiple individuals and transmitted the infection more than 1-2 weeks ago. Therefore, secondary and further generational spread has likely occurred in multiple locales in California. Due to the containment definition of a PUI, which has limited testing, and just the lack of available testing, it is likely these cases represent the most ill members of a much larger community cohort that is largely asymptomatic/mildly symptomatic and actively transmitting the infection in the locales.

   The Oregon and Washington experiences would indicate that community transmission is occurring widely on the West Coast of the continental United States.

Conclusions from the Virology and Epidemiology

COVID-19 is a disease that is primarily spread by droplets, is more easily transmitted than seasonal influenza, and can spread via asymptomatic individuals who would not normally seek medical care or evaluation. The West Coast epidemiology demonstrates that community transmission is already occurring. The testing strategy in the U.S. would only find severely ill individuals. Based on data from China and the length of time these two California individuals have been hospitalized (9-10 days), one would conclude:

- There is ongoing community transmission, likely now 2-3 generations from these two individuals

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- If only 20% of individuals seek medical attention, then there are multiple mildly ill/asymptomatic individuals in the community who are transmitting the virus now despite inpatient containment measures
- The current furloughing of healthcare workers will not stop the spread of the virus or secondary transmission because of the above. In fact, healthcare workers are likelyto be exposed in the very community to which they are furloughed given the evidence of community transmission in California.
- The current PUI definition is being rendered irrelevant because any individual might be at risk for the infection given the evidence of community transmission

Containment of COVID-19 is no longer possible with clear evidence of community transmission outside of the hospital containment zones. Containment measures are not designed to mitigate disease spread and have the opposite effect of placing strain on the healthcare system in the context of widespread disease. In order to preserve the health of the public, get the right care to the right patients, preserve the resources in terms of personnel and medical resources, a change to a mitigation strategy is critically important if California is to be successful in reducing the impact of COVID-19.

Mitigation Strategy Outlined

1. Use of Droplet Precautions: In healthcare settings, droplet precautions should be used. Use of a isolation mask, disposable gowns, gloves, and eye wear (goggles, safety glasses, or face shields) will provide protection for healthcare workers from this novel virus. This action will simplify workflows for larger volume of patients and preserve the use of N-95 respirators, powered air purifying respirators (PAPRs), and controlled air purifying respirator (CAPRs)for true airborne diseases such as tuberculosis. For high risk procedures such as intubation or bronchoscopy, airborne isolations would still be employed for suspect or confirmed COVID-19 patients.

   Single rooms are sufficient for droplet precautions. Thus, any single room in a hospital could be used and significantly increase California's ability to care for a larger number of hospitalized COVID-19 patients. That would preserve airborne isolation infection rooms (AIIR or negative pressure rooms) for airborne diseases.

2. Placement of Patients:
   a. Asymptomatic/Minimally Symptomatic: For patients with mild cold or minimal symptoms, they will be advised to stay at home (in home isolation) until well (resolution of fever, improvement in cough, *etc.*). They do not require specific testing. Evaluation will be done by phone or video visit. Follow up for worsening of symptoms can be done either via telemedicine via treatment protocols or self-transport to an appropriate clinic or emergency department based on severity of illness. The patients would be advised to not go to work or school as per our approach to influenza like illness. Supportive measures at home are effective.
   b. Designated Sites for Outpatient Evaluation: For those individuals with more significant cold, cough symptoms, evaluation at points of contact and designated sites which could include tents, mobile units, or particular clinic sites will be set up. For those individuals that need testing—self testing or healthcare worker administered testing using oropharyngeal/nasopharyngeal swabs would be done. This approach would allow for minimizing potentially infected persons through the entire clinic building and allow for efficient use and placement of personal protective equipment.
   c. Emergency Departments/Hospitals: A patient would be in a single room. Droplet precautions that include gloves, gowns, and eyewear would be used. If the number of hospitalized patients with COVID-19 increases significantly, cohorting would be possible with available testing. As an example, if two individuals were both known to be COVID-19 positive, then they could be placed in the same room. Cohorting would be determined based on infection prevention professionals in the hospital in conjunction with hospital leadership.

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d. Alternate Hospital Settings: If the existing hospital infrastructure is overwhelmed, opening mobile hospitals that are available from the National Guard or the Department of Defense should be strongly considered. Placement of the mobile hospital units would be on state land given the DoD's currentforce protection order. Medical staffing would be coordinated through the California Emergency Medical Services Authorityvia volunteers similar to what was done during the recent Northern California fire responses.
e. Visitor Restrictions: As per approaches taken during the H1N1 pandemic, hospitals could institute visitor restrictions. Those with active colds, cough would be asked to not visit. Those individuals who are not close contacts (*e.g.* family members) of the patient would be asked not to visit. Age restrictions are an additional option.
f. Discontinuation of Isolation: We would move to a strategy used for influenza. If there is resolution of symptoms (fever, reduction in cough, *etc.*) an individual could return to work or school. Outpatients would not require additional testing (OP/NP swabs). Isolation would continue in the hospital setting until discharge or if they were to stay in the hospital for a longer period of time OP/NP swabs that are negative per current CDC guidelines.

3. Testing: A testing strategy would focus on defining the presence and extent of ongoing community transmission and aid in the determination of the need for isolation in inpatient settings.
    a. Community Evaluation: During cold and flu seasons, we initially test inpatient and outpatient patients with suspected influenza. It is recommended we have testing available for both inpatients and outpatients at this time so we can define the extent of community spread, protect the hospital population who are not infected with COVID-19, and to efficiently use single rooms for isolation. Testing availability at the public health and community hospital level will be important to preserve hospital flow for either continuation or discontinuation of isolation. Once community spread is determined to be present, it is recommended that outpatient testing could be discontinued since the actions that need to be taken—home isolation, supportive self-care are clear, and there is no additional specific treatment for COVID-19 that would be altered by testing (unlike influenza where there are specific therapies available).
    b. Hospital and Emergency Department Testing: COVID-19 testing should remain in place and available for the inpatient setting through the entirety of the epidemic because the results will determine the need for isolation.
    c. Availability of Testing: Ideally COVID-19 testing would be available in the local public health department labs and eventually in hospital labs to facilitate efficient hospital workflows.

4. Healthcare Workers (HCWs): Given the presence of community transmission, HCWs are just as, if not more likely, to be exposed in the community as they are in the hospital. Furloughing of individuals who have had a breach in PPE or were not using PPE for an individual being ruled out or with confirmed COVID-19 needs to be reconsidered.
    a. Workplace Exposure to Suspect or Confirmed COVID-19 Patient: As per guidelines for exposure to influenza or other contagious diseases, the employee will perform delegated self-monitoring for fever, cough, and other symptoms. If they become ill, they should remain off work until their fever resolves and their cough and other symptoms are improving.
    b. Specific testing for COVID-19 would be done based on clinical severity as outlined above.
    c. Symptomatic HCWs: Individuals with COVID-19 like symptoms, without known occupational exposure, would be off work as per existing guidelines. If clinically appropriate based on disease severity, undergo testing for COVID-19. If positive, the HCW remains off work until their fever has resolved and cough is improving.
5. EMS/Transport: EMS and medical transport of suspected and confirmed cases of COVID-19 would use droplet precautions.

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Introduction and Purpose

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This paper provides the summary for a mitigation strategy in the State of California and the hospital systems. Each of the items listed in the mitigation strategy section have detailed operational plansto support them.

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COVID-19 Virology

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General Strategies for Viral Control

Containment

Containment strategies are designed to halt the spread of an infection. Ultimately the goal is to isolate individuals with the infection as well as those potentially exposed to the infection with the goal of preventing spread to the general population. If successful, a containment strategy can prevent further spread and terminate an outbreak. Containment requires a high degree of resource intensive measures that include the use of airborne isolation rooms, personal protective equipment, healthcare personnel, and potentially other equipment. Containment measures work when a relatively small number of patients are infected in concentrated locales. However, when an infection spreads into a community, then the measures can be counterproductive since they do not scale to diagnosis, treatment, or containment for large populations.

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Infection Control

Infection Control Planning Assumptions: Based on current data COVID-19 virology

- COVID-19 is primarily spread person-to-person via respiratory droplets between people who are in close contact. Respiratory droplets are too large to travel a long distance from the source.

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- Respiratory droplets may drop on surfaces or objects, but this is not thought to be the main way the virus spreads.
- Respiratory droplets may be aerosolized during aerosol-generating high-risk procedures such as intubation, bronchoscopy, sputum induction, etc.
- Little is known about the duration of viral shedding or infectivity of the virus, but those exhibiting active symptoms become more infectious after several days.
- The time of survival and the conditions affecting the viability of COVID-19 in the environment are currently unknown. However, COVID-19 can be killed by any disinfectants with kill claim for enveloped viruses when used properly.

Source Control, Screening Areas, and Visitor Restriction

- Patients with minimal symptoms will be advised to stay at home until well (resolution of fever, improvement in cough, *etc.*).Evaluation by phone or video visit will be encouraged.
    - Patients will be advised to home isolate and work restrict until well.
    - These patients do not require testing.
- Patients presenting to a medical facility with cough or shortness of breath will be advised to wear a mask
- Sick employees must stay home.
- Screening areas for COVID-19 **need not be** a private room. However, patients must be at least 3 feet apart (with patient and/or staff masked) and provided privacy.

PPE and Isolation: General Considerations

- Droplet Precautions, Contact Precautions, and Eye Protection for patients suspected or confirmed to have COVID-19. **Negative pressure room NOT required.**
    - Droplet Precautions for any patients with respiratory symptoms while being evaluated and treated.

- Those escorting patients/members with respiratory symptoms or suspected to have COVID-19 **need not wear mask**, if patient/member is **masked**.
    - If patient is unable to wear mask, staff must put on mask while escorting.
    - Staff must wear full PPE if in direct contact (touching or providing care) with patient during transport.

- **PAPR/CAPR or N95 Use and Additional Equipment**:
    - PAPR/CAPRsor N95s will only be used when performing or present in the room during high risk procedures on patients suspected or confirmed to have COVID-19.
    - Clean reusable components of PAPR/CAPR after each use.
    - Dispose of N95 after each use as per current infection prevention protocols.
    - Use disposable supplies if available; otherwise dedicate reusable supplies or equipment for patients suspected or confirmed to have COVID-19.
    - Reusable equipment must be cleaned routinely with hospital-approved disinfectant.

- **Initiate Airborne Precautions and wear PAPR/CAPR/N95** if performing or present in the room for high-risk procedures (intubation, bronchoscopy, sputum induction, suctioning, opening ventilator circuit, etc.) on patients suspected or confirmed to have COVID-19.
    - If available, perform high risk procedure in a negative pressure room; otherwise, a private room with closed door is adequate.
    - Work with Engineering to assist in conversion of rooms to negative pressure as possible
    - Limit high-risk procedures when impact to care is less obvious, i.e., nebulized medications without firm objective need, bronchoscopy when blind lavage will do, etc.

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- **Limit transport and movement of patients** outside of the room to medically necessary purposes.
    - Use alternative bedside procedures and imaging when possible.
    - Staff need not wear mask or other PPE if patient is wearing mask during transport.
    - Patient must be masked if ambulating outside the room or being transported for a procedure.

- **Avoid unnecessary testing and routine periodic evaluation of patients** in isolation
    - Decrease vital sign assessmentsto medically appropriate intervals to match clinical condition and improvement in condition.
    - Testing and imaging only when needed for clinical indications (diuresis, clinically evident bleeding, change in urine output, change in tidal volumes, oxygenation, etc.)
    - Utilize alternative diagnostic methods rather than resource- and staff-intense methods when appropriate (point of care ultrasound, etc.)

- **Use remote interaction with patients in isolation as appropriate**
    - 2-way intercom or phone
    - "Baby monitors" may suffice if patients unable to communicate
    - Remote telemonitoring equipment if available

Cohorting of COVID-19 Patients

- Patients on **Droplet Precautions** with [the same?] **known respiratory disease/condition** other than COVID-19 may be cohorted according to policy and with local IP/ID guidance.
- Patients **confirmed** with COVID-19 may be cohorted with local IP/ID guidance.

Cohorting of COVID-19 Patients and Reusable Equipment

- Patients **confirmed** with COVID-19 may be cohorted with local IP/ID guidance.
- Use disposable supplies if available; otherwise dedicate reusable supplies or equipment for patients suspected or confirmed to have COVID-19.
- Reusable equipment must be cleaned routinely with hospital-approved disinfectant.

Environmental Cleaning

- Rooms occupied by patients suspected or confirmed to have COVID-19 will be cleaned following protocols for routine daily and discharge cleaning.
- EVS will follow Droplet and Contact Precautions with eye protection while performing a daily and discharge protocols for cleaning of room currently occupied by patients suspected or confirmed to have COVID-19.
- Rooms of discharged patients suspected or confirmed to have COVID-19 on Droplet Precautions **need not be closed** for 1 hour prior to cleaning (other than as specified below).
- Negative pressure rooms used by patients suspected or confirmed to have COVID-19 on **Airborne Precautions due to aerosol-generating procedures must be closed for at least 1 hour prior to cleaning. Room may be cleaned without waiting for 1 hour if EVS is wearing N95 mask.**

Communications

Patient Education and Outreach

- Email outreach to all members with generalized recommendations about COVID-19
- Prominent language content and visibility about COVID-19 across all patient technological platforms

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- Outreach to members that explains shift to virtual care and education about what to expect should patients need to access care. Communications will develop materials that are appropriate for multiple audiences and translation of the information as appropriate.

Physician and Staff Education

- FAQs for Appointment and Advice Call Center staff fielding a variety of questions to answer
- Talking points and workflow to physicians about referral to Appointment and Advice Call Center for travel documentation
- Front Office Staff training to COVID-19 workflows
- Engage clinic directors to educate back office staff in COVID-19 workflows
- Functional communications about business operations, staff and service availability and regulatory agency imperatives
- We will provide standard talking points and information for leaders to cascade
- Clinical and operational questions
    - Epidemiology and outbreak updates
    - Workflow communications
    - Frequently asked questions
    - State of the response communications

Human Resources

Healthcare Worker Exposure

- If there is an exposure of an employee toa COVID-19 patient, the employee will self-monitor for symptoms of fever and upper respiratory tract infection.
- If the employee does not have symptoms of fever or upper respiratory tract infection, the employeemaycontinue to work.
- If the employee experiences any symptoms of fever or upper respiratory tract infection, they will be tested for influenza and COVID-19 and furloughedaccording to the same practices used for influenza during flu season.
- If the employee testspositive for COVID-19, they may not return to work until they are both fever free for 24 hours without fever-reducing medication, andtheir cough is improving [or TBD re: timing of shedding whichever is longer [TBD]. If the employee tests negative for COVID-19, they can resume work.

COVID-19 Screening Workflows

Facility Access Points

- Access to the medical facility will be limited to main portals of entry
- Ambassadors will be stationed at main portals of entry
- Ambassadors will conduct Safety Checkpoints at portals of entry
    - Patients who endorse cough or shortness of breath will be directed to put on a mask before they are directed to the appropriate venue

Visitor Access

- Limit one person to accompany the member for the appointment or visit the member while hospitalized
    - Only household contacts will be allowed to visit the medical facility

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    - Individuals with symptoms of upper respiratory infection will be restricted from visiting
    - Instruct visitors and caregivers to wear a mask when outside the patient room and to clean hands before entering and leaving the patient room
    - Discourage visitors and caregivers from public locations within the medical facility (e.g. waiting room, cafeteria)
- Pediatric Patients
    - Limit visitors to a single caregiver when possible

Call Center/Online Strategies

Online Messaging and Appointment Booking

- Prominent messaging on kp.orgwith advice and clear instructions on COVID-19 questions/concerns
- Enhance online booking infrastructure and guidelines to channel patients with respiratory symptoms to the Appointment and Advice Call Center with preferential booking of Telephone Appointment Visit or Video Appointment Visit in Adult Family Medicine, Pediatric and Gynecology service lines
    - In the event of surge, there is an option to turn off online Direct Appointment Booking and route all requests through the Appointment and Advice Call Center where trained staff can provide higher level of support

Appointment and Advice Call Center Messaging

- Taped information on COVID-19 for all members who call
- If Asymptomatic: FAQs addressing questions and miscellaneous concerns
- If Symptomatic: members with symptoms concerning for COVID-19 will be directed towards Telephone Appointment Visit or Video Appointment Visit when medically appropriate in Adult Family Medicine, Pediatric, and Gynecology service lines

Appointment and Advice Call Center Staffing

- Staff protocols to provide information at the appropriate level and improve advice rates
- Increased RN staffing and Clinical staffing (virtual or physical) to assist with increased volume of calls for URI symptoms
- All hands on deck to assist with increased call volumes as needed

Outpatient Clinics

Appointment Supply Management

- Telephone appointment visits (TAV)/Video Appointment Visits (VAV)for booking in a timely manner
    - Outpatient clinics will increase TAV and VAV capacity by increasing available physicians andshift diverting physicians into the COVID-19 TAV/VAV queue
    - During surge, will further increase TAV and VAV capacity by creating regional pool of physicians from different KP facilities

Conversion of Existing Appointments to Telephone Appointment or Video Appointment Visit

- Adult Family Medicine, Pediatrics, Gynecology

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    - Medical Assistant will review clinic schedule daily to route chief complaints of cold/cough/respiratory symptoms to Telephone Appointment Visit or Video Appointment Visit when possible
- Subspecialties
    - Will review clinic schedule daily to assess opportunities for conversion to Telephone Appointment Visit or Video Appointment Visit for specialized or chronic disease care
    - Review lab ordering practices to avoid bringing fragile patients onsite if it is not necessary

COVID-19 Clinic Workflows

- Planned Arrivals
- Incidental Arrivals
    - Greeter will distribute masks to patients with recent international travel or with cough or respiratory symptoms at point of entry
    - Patients with cough will be moved out of waiting room and into private room as quickly as possible
    - Consult with Infectious Diseases as necessary

COVID-19 Clinic Surge Strategies

- Build a COVID-19 expert consulting team to staff Telephone Appointment and Video Appointment Visits

Hospital Facilities

Emergency Department

- Screening Areas
    - Cohort patients in the screening area during assessment:
        - Droplet/contact/eye precautions
        - 3-foot minimum distance from other patients
        - Reasonable privacy considerations
        - PPE must be changed between patients
        - Recommend all visitors be excused from the screening area with the exception of an adult family member for a pediatric patient or a necessary caregiver for an adult patient
        - Physician notification of patient arrival to screening area by staff or ANM.
            - Physician assessment in screening area using droplet/contact/eye precautions for minimally symptomatic patients to determine if discharge to home is possible after rapid evaluation and treatment or if outpatient assessment is possible after Medical Screening Exam (MSE) during times of extreme surge consistent with EMTALA obligations
- Patient Assessment
    - Patient escorted and roomed in single ED treatment room following escorting guidelines
    - Droplet/contact/eye precautions and airborne precautions as indicated
    - High risk procedures will be performed in a negative pressure room if available; otherwise, a private room with closed door is adequate
    - Contact designated Infectious Diseases physician for further guidance on COVID-19 testing, treatment and disposition
- Patient Discharge
    - Contact ID for COVID-19 testing recommendations
    - Discharge with appropriate prescriptions, COVID-19 discharge instructions and follow-up
    - Give patient isolation mask and escort out of ED when appropriate transportation available

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Adult Inpatient

- Hospital Census
  - Assess resource management and potential discharge barriers daily
  - Regional command center support to monitor capacity at each medical facility

- Level of Care
  - Maximize appropriate level of care for every patient (ex: Telemetry guidelines to ensure appropriate telemetry floor beduse)
  - Minimize use of Foley, restraints, oxygen, continuous pulse oximetry as clinically indicated

- Cohorting of COVID patients
  - Attempts should be made to cohort COVID patients with one team of clinical providers to minimize exposure to staff
  - Create a specialized rotating team of clinical providers who manage COVID patients
  - Cohort COVID patients in rooms and on medical floors within the hospital

- Care of patient
  - Limit staff entering patient's room to essential personnel
  - Limit exams, labs draws, and imaging to essential testing only
  - Utilize remote methods of communication as appropriate (cell phone, monitors, etc.)

- Staffing
  - Monitor staff with healthcare exposures and/or furlough
  - Flex staff administrative time to clinical time as needed
  - Regional staffing pool to support medical facilities with staffing contingencies

- Guiding Principles
  - Standardize best-practice clinical and operational workflows
  - Mitigate spread in our communities
  - Protect healthcare workers
  - Resource stewardship in all decisions
  - Collaborate agnostic of service line and tailor to nuances
  - Identify potential unintended consequences and try to mitigate
  - Seek technology; incorporate KPHC and IT to make it easier to do the right thing
  - Align to the current Infection Control Mitigation Plan for COVID-19 located here
  - Identify and reduce redundancy, waste, and inefficiencies in workflows and practice to optimize resources

- Infection Control Guidelines
  - Use of Droplet Precautions: Use Droplet Precautions, Contact Precautions, and Eye Protection for patients suspected or confirmed to have COVID-19**. Negative pressure room is NOT required**.
  - Those escorting patients/members with respiratory symptoms or suspected to have COVID-19 **need not wear mask**, if patient/member is **masked**
  - If patient is unable to wear mask, staff must put on mask while escorting
  - Staff must wear full PPE if in direct contact (touch)
    - **PAPR/CAPR or N95 Use**: PAPR/CAPRs or N95s will only be used when performing or present in the room during high risk procedures on patients suspected or confirmed to have COVID-19

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- Single rooms are sufficient for droplet precautions. Thus, any single room in a hospital could be used and significantly increase California's ability to care for a larger number of hospitalized COVID-19 patients. That would preserve airborne isolation infection rooms (AIR or negative pressure rooms) for airborne diseases. **Negative pressure room is NOT required.**

- Guidelines for Staffing
  - Staffing for patients who are COVID-19 positive or a PUI:
    - **Staffing with a negative pressure isolation room (if required):**1:2 assignment
  - Staffing on units:
    - Provide a private room for the patient. Patients **confirmed** with COVID-19 may be cohorted with local IP/ID guidance
    - Use clinical judgement to determine acuity for the patient assignment
    - Consider a monitor for PPE observation in high-risk patients
    - Escalate questions and scenarios that come up to manager that require consideration
  - Before employees provide high risk care to a PUI or COVID patient:
    - Validate competency on isolation precautions
    - Validate competency on proper donning and doffing technique
    - Validate N95 fit testing (if using N95)

- Hospital Workflows Defined Specific to Access
  - Patients may be admitted to the Inpatient units in at least three different ways:
    - Direct ED Admit
    - Direct admit from a Medical Office Building
    - Ambulance transfer

Direct ED Admit Workflow

Step 1: Identify

- House Supervisor (HS) RN receives notification of COVID positive or Person Under Investigation (PUI) to be admitted

Step 2: Escalate

- House Supervisor notifies the Administrator on Call (AOC) to activate command center, if not already activated, of incoming patient. As COVID cases in the U.S. increase, command center activation may not be indicated

Step 3: Isolate

- House supervisor coordinates the team to transfer patient to the admitting unit: Ensure the current appropriate PPE is ordered

- Team: consists of:
  - Personnel to support transport to inpatient unit
  - Receiving MD
  - Receiving RN
  - Assistant Nurse Manager
  - Infection Control (or designee after hours)

Step 4: Isolate

- House Supervisor arranges transportation for admit, and huddles with transporting and receiving staff. Transfer patient to unit once team is briefed.
- Confirm patient will be masked during transport

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- PPE for staff not required for masked patients
- Confirm transfer path is clear and secure
- Arrange for transportation in a dedicated elevator

Step 5: Protect Caregiver/Family/Friends
- Notify restriction on visitors for patients suspected or confirmed to have the COVID-19 virus
- Sick family or caregivers who arrive with patients should not be permitted to stay with the patient unless the patient is pediatric
- Designated visitor must wear a mask when outside of the patient room

Step 5.1: Protect Admitting RN and Admitting MD
- Refer to current *Inpatient Workflow below and admit per outlined admission process

Inpatient Admission from Medical Office Building (MOB) Workflow

Step 1: Identify
- House Supervisor (HS) RN receives notification of COVID positive or Person Under Investigation (PUI) to be admitted from admitting MD

Step 2: Escalate
- House Supervisor notifies the Administrator on Call (AOC) to activate command center, if not already activated, of incoming patient. As COVID cases in the U.S. increase, command center activation may not be indicated

Step 3: Isolate
- AOC or HS coordinates the patient transfer from MOB through the local command center
- AOC or HS will communicate local command center instructions on how to transfer the patient to the unit

Step 4 Isolate
- House Supervisor arranges transportation for admit, and huddle with transporting and receiving staff. Transfer patient to unit once team is briefed
- Follow the recommendations of the AOC or local command center on transportation and point of entry to hospital

Steps 5 and 5.1 are same as Direct Admit Workflow

Step 5: Protect Caregiver/Family/Friends
- Notify restriction on visitors for patients suspected or confirmed to have the COVID-19 virus
- Sick family or caregivers who arrive with patients should not be permitted to stay with the patient unless the patient is pediatric
- Designated visitor must wear a mask when outside of the patient room

Step 5.1: Protect Admitting RN and Admitting MD
- Refer to current *Inpatient Workflow below and admit per outlined admission process

Inpatient Admission via Ambulance Transfer

Steps 1-3 same as Direct Admit to Inpatient

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Step 1: Identify

- House Supervisor (HS) RN receives notification of COVID positive or Person Under Investigation (PUI) to be admitted

Step 2: Escalate

- House Supervisor notifies the Administrator on Call (AOC) to activate command center, if not already activated, of incoming patient. As COVID cases in the U.S. increase, command center activation may not be indicated

Step 3: Isolate

- House supervisor coordinates the team to transfer patient to the admitting unit: Ensure the current appropriate PPE is ordered

- Team: consists of:
    - Personnel to support transport to inpatient unit
    - Receiving MD
    - Receiving RN
    - Assistant Nurse Manager
    - Infection Control (or designee after hours)

Step 4: Isolate

- House Supervisor arranges transportation for admit, and huddles with transporting and receiving staff. Transfer patient to unit after team is briefed
- Use KP bed to move the patient into the hospital from the point entry
- Bring PPE for the transfer team and patient
- Follow workflow for transfer of patient from the ambulance into the medical center

Steps 5 and 5.1 are same as Direct Admit Workflow

Step 5: Protect Caregiver/Family/Friends

- Notify restriction on visitors for patients suspected or confirmed to have the COVID-19 virus
- Sick family or caregivers who arrive with patients should not be permitted to stay with the patient unless the patient is pediatric
- Designated visitor must wear a mask when outside of the patient room

Step 5.1: Protect Admitting RN and Admitting MD

- Refer to current *Inpatient Workflow below and admit per outlined admission process

Inpatient Workflow: What to do when the patient gets to the unit

Once Notification is received from ED or clinic of need for bed for known or suspect COVID-19 patient, the following steps are taken:

Step 1: Prepare room for admit

- Secure isolation supplies (isolation masks, gowns, eye protection, gloves, hand sanitizer. If high risk procedures are anticipated, N95 respirators, PAPR/CAPRs and storage station for after use); if applicable gather PAPR/CAPR supplies if a high-risk procedure is anticipated
- Confirm dedicated or disposable patient-care equipment (e.g., blood pressure cuffs, stethoscope)
- Ensure communication device located in room and phone number known
- Post Droplet and Contact Precautions signs on the door outside the patient's room

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Step 2: Arrange transportation for admit: Huddle with transporting and receiving staff

- Confirm patient will be masked during transport
- Confirm that primary caregiver / household contacts that are accompanying the patient are masked within the facility

Once patient enters the unit the staff will:

Step 3.1: Prepare to enter room:

- Perform hand hygiene
- Put on a gown; fasten at the neck and back
- Put on isolation mask
- Put on eye protection (face shield or goggles)
- Put on gloves

Or,

Step 3.2: Prepare to enter room ifusing PAPR/CAPR/ N95

- Perform hand hygiene
- Follow Donning Protocols

Infection Control procedures while performing patient care inside room

- Remember to keep hands away from face and head
- Limit surfaces touched to minimize contamination
- Change gloves throughout care delivery if torn or heavily contaminated
- Perform hand hygiene between glove use
- Place all waste generated from the room of a known or suspect COVID-19 patient into a red biohazard bag and leave in the room

Caregivers

- Must be able to go to and from the patient room with minimal distractions
- Enforce guidelines that restrict visitors to PUI or COVID positive patients
- Receive recent education on infection control practices and wear PPE per policy
- Commit to collaborating to minimize the spread of infection by:
    - Hand hygiene before entering and leaving the patient room
    - To minimize contamination, wear proper PPE when providing all care to the patient
        - Contact
        - Droplet
        - Airborne (as indicated)
        - Isolation

Equipment and Supplies

- Minimize opportunities for contamination both internally and externally through transfers
- Use dedicated or disposable patient-care equipment (e.g., blood pressure cuffs, stethoscope)
- If must use reusable equipment, clean & disinfect after use according to manufacturer's instruction

Removal of waste and transportation

- Cleaning of transportation (e.g. ambulance gurney, larger bed, wheelchair) or other medical devices (e.g. portable x-ray, cardiac ultrasound, etc.)
    - Clean equipment within the room maintaining > 3 feet distance from masked patient before leaving the room and before doffing the PPE

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- If a cleaning distance of > 3 feet from the patient cannot be maintained in the patient room, the equipment should be wiped down and moved to a nearby empty room and then fully cleaned. That second room would then require terminal cleaning for COVID-19
- Waste will be removed from room per EVS protocol, packaged, stored and hauled away from our facilities in accordance with the requirements of the medical waste vendor

Preparing to exit room if using isolation mask or N95 respirator

- Remove gown and gloves inside the room, place in red biohazard waste
- Remain at least 3 feet from patient while removing PPE
- Perform hand hygiene
- Put on clean gloves
- Remove goggles/face shield and place in red biohazard waste bag/container
- Remove gloves and perform hand hygiene
- Put on clean gloves and exit the room
- Remove gloves and perform hand hygiene
- Put on clean gloves and remove mask/N95 in anteroom or hallway if no anteroom. Discard in red biohazard waste bag/container

Preparing to exit room ifusing PAPR/CAPR/N95

- Remove gown and gloves inside the room, place in red biohazard waste. Remain at least 3 feet from patient while removing PPE
- Perform hand hygiene and put on clean gloves
- Wipe outside of PAPR/CAPR device with quaternary ammonium, alcohol, or bleach wipe, or equivalent. Begin with cleanest area in back first, moving around to front
- Remove gloves and perform hand hygiene
- Put on clean gloves and exit the room
- Remove gloves, perform hand hygiene and put on clean gloves to remove hood/helmet
- Place all PAPR/CAPR supplies into biohazard carrying container for transport to reprocessing location

Transport

- Bag soiled reusable components in container with a biohazard label and place in a designated secure area to be transported to SPD for reprocessing
- No PPE is required in transporting soiled PAPR/CAPR that are inside a clean biohazard transport container

Waste Management

- All waste from COVID-19 patient both PUI and confirmed needs to be placed in a red biohazard bag
- **PUI/SUSPECT** COVID-19 patient waste should be placed in a biohazardous (red bag) waste or pharm/sharps container for disposal as medical waste. Currently there are no additional medical waste vendor requirements for PUI/SUSPECT COVID-19 patient waste; manage in accordance with the site's current medical waste workflow
- ***CONFIRMED*** COVID-19 patient medical waste [biohazardous (red bag), pharm/sharps waste] is required to be managed separately from all other site generated medical waste when removed from the treatment room. Site-specific workflows are required for transporting, packing, and storing for off-site treatment; and on-site treatment in steam sterilizer
  - Off-site shipment of confirmed COVID-19 patient medical waste (red bag and pharm/sharps containers) for treatment and disposal must be packaged and marked "C: with a circle in accordance with the requirements of the site's medical waste vendor
  - On-site treatment of confirmed COVID-19 patient medical waste (red bag only) being treated via steam sterilization will be done in accordance with site's written procedure for transporting and loading COVID-19 waste in the sterilizer

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Environmental Cleaning

- EPA-registered hospital disinfectants should be used per instructions for use (IFUs)
- EVS personnel to wear isolation mask, gown, gloves and eye protection and follow COVID-19 donning and doffing protocols

PAPR/CAPR Cleaning, if used

- If blood and/or body fluids contaminate the filter of the CAPR, dispose of per medical waste policy
- Don PPE prior to cleaning PAPR/CAPR
- Wipe down the inside and outside of the entire equipment with hospital approved disinfectant wipe
- Begin with the cleanest area inside the helmet/hood then clean outside. Follow manufacturer's instructions for use to ensure all components of device are cleaned
- Remove PPE and perform hand hygiene
- Be sure proper contact time of disinfectant is achieved, and the unit is dry
- Return clean ready to use device to designated clean area

Respiratory Therapy Workflows Specific to COVID-19

A. Guidelines for Direct Care

- Full PPE should be observed when in direct contact with patient, less than 3 feet (gown, gloves, eye protection, and mask)
- PAPR/N95 should be worn during **high risk procedures** (intubation, nebulizer treatment, Bipap (not CPAP), bronchoscopy, sputum induction, open suctioning (not closed suctioning on vent-see standard ATD list).
- Perform high risk procedure(s) in a negative pressure room if available; otherwise, a private room with door closed is adequate.
- Nebulization of medication is considered high risk and should be reviewed for appropriateness before administration
- Patients on Droplet Precautions may be cohorted

B. Equipment

- Use disposable equipment when possible
- A disposable stethoscope should be placed in patient room
- Identify/ Inventory/Procure Respiratory equipment needed (ventilators, tracheostomy sets, etc.)
- RT Managers to order supplies as needed but not in excess to ensure adequate availability throughout NCAL
- Home CPAP units maynot be brought into facilities for use by patients who are confirmed positive or suspected for COVID-19. Utilize hospital CPAP machines.
- Continue current workflow for cleaning/disinfecting of equipment

C. Therapies

- Every shift all ordered Respiratory Therapy modalities should be evaluated for necessity
- Oxygen need only be administered if necessary and should be weaned as applicable
- When possible, small volume nebulizer should be converted to metered dose inhaler with spacer
- High Risk procedures (intubation, bronchoscopy, sputum induction, nasotracheal suctioning) should be reviewed with the HealthCare Team for necessity

D. Staff Floating

Ideal state: Recommend to limit floating from adult to newborn to reduce risk

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CT Workflows Specific to COVID-19

A. See CT Workflow PowerPoint in **Appendix** for additional information

B. Notification received from ED or Inpatient unit of need for CT exam for known or suspect COVID-19 patient

Step 1: Prepare CT Suite for patient arrival *IDENTIFY ONE CT UNIT TO UTILIZE*

- Secure isolation supplies (isolation masks, gowns, eye protection, gloves, hand sanitizer); if applicable gather N95 respirators or PAPR/CAPR supplies
- Confirm dedicated or disposable patient-care equipment (e.g. blood pressure cuffs, stethoscope)
- Notify EVS to prepare for terminal clean of CT Suite (Room # XXX)

Step 2:Arrange transportation to CT: Huddle receiving staff (CT Team)

- Confirm patient will be masked during transport
- Confirm PPE for transportation staff
- Confirm maintenance of cleared/secure pathways
- Arrange for transportation in a dedicated elevator. If patient is masked during transportation, elevator does not need terminal clean.
- Confirm that primary caregiver / household contacts that are accompanying the patient are masked within the facility

Step 3:Follow Infection Prevention Mitigation Plan for use of N95 or **PAPR/CAPR**

Prior to Entering the Patient room

- Prior to entering the patient room, check in at the nurses' station to inform RN that you are there to perform an imaging study
- Sign into the logbook. Make sure to clearly write all of your information into each field of the sign in sheet.
- There will be a RN staff 24 hours 7 days a week to monitor and assist with donning and doffing of PPE
- All needed PPE is located in the anteroom area of the patient's room

Infection Control procedures while performing patient care inside room

- Remember to keep hands away from face and head
- Limit surfaces touched to minimize contamination
- Change gloves throughout care delivery if torn or heavily contaminated
- Perform hand hygiene between glove use

Place all waste generated from the room of a known of suspect COVID-19 patient into a red biohazard bag and leave in the room.

Removal of waste and transportation

- Cleaning of transportation (e.g. ambulance gurney, larger bed, wheelchair) or other medical devices (e.g. portable x-ray, cardiac ultrasound, etc.)
    - Clean equipment within the room maintaining > 3 feet distance from masked patient before leaving the room and before doffing the PPE
    - If a cleaning distance of > 3 feet from the patient cannot be maintained in the patient room, the equipment should be wiped down and moved to a nearby empty room and then fully cleaned. That second room would then require terminal cleaning for COVID-19.
- Waste will be removed from room per EVS protocol, packaged, stored and hauled away from our facilities in accordance with the requirements of the medical waste vendor
- EVS will prepare to terminal clean the CT suite and room will remain out of service for duration

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Cleaning the portable x-ray unit

- Wipe down the body of the portable x-ray unit
- Wipe down the touchscreen of the portable x-ray with Clorox wipes
- Can clean unit with Sani-cloth wipes

Special considerations:

- After Imaging the patient, leave the imaging plate in the room
- WAIT 1 Hour before cleaning;use disinfectant and follow manufacturer's drying recommendations.When this is completed, asset is ready for use and can be removed from the room
- Ensure signage is posted prominently:
    - Portable Please Do Not Remove This Portable From its Current Location Unless Instructed by A Member of the Radiology Management Team
- Use the provided C-Arm Drape to cover the Portable x-ray unit
    - Cover the base of the Portable x-ray unit with a C-Armor Cover
    - Cover the exposure button with the provided blue cover
    - Double bag the imaging cassette

OR Workflows

Perioperative Services provides a comprehensive plan for all urgent/emergent surgical care based on the following scenarios:

- Workforce Shortages due to Coronavirus
- Hospital Bed Shortages
- Supply/Medication/Sterile Instrumentation Shortages

Scenarios	
Critical Workforce Shortage: Prioritizing Surgical Cases according to impact	
1	Mild Workforce Impact: Prioritize cases on volume according to staff numbers.
2	Moderate Workforce Impact : Prioritize to urgent /emergent
3	Severe Workforce Impact: Regional cohorts of OR and Beds dedicated to surgery
Hospital Bed Access	
1	Mild Workforce Impact: Prioritize cases on volume according to bed numbers in individual Medical Centers
2	Moderate Workforce Impact: Prioritize to urgent /emergent based on beds available. Perform only out-patient elective surgery
3	Severe Workforce Impact: Regional cohorts of OR and Beds dedicated to surgery and surgical sub-specialties
Operating Room/Sterile Processing/Supply Chain	
1	Leadership from KFH/HP and TPMG attend daily Supply Chain Daily Update and COVID-19 Daily Planning Workgroup
2	Escalate and track critical shortages of staff, supply, and medication to trigger prioritization of surgery

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3	Update logistic of Perioperative Playbook and add supplies/medications to Workflow for Surgical Services (Patient Category) Document ***this week***

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Intensive Care Unit

- Optimize hospital flow to allow for ICU decompression
  - Use strict telemetry monitoring criteria for transfer of patients from ICU level of care.
  - Discharge workflow optimization needed. Use Advanced Practice Provider resources if needed.
- Expand care delivery outside of ICU using standardized assessment and treatment protocols
  - Decrease unnecessary aerosol medication administration (scheduled inhalers and prn aerosol/nebulized treatments only if needed)
  - Flex noninvasive rescue ventilation, chronic ventilators, some infusions to non-ICU hospital beds
- ICU Surge Strategies
  - Flex nursing ratios if staff shortages occurin the cases of emergency need
  - Mitigate possible post-exposure furloughs and potential increase in workload for RT department
  - Regional ICU command center to provide oversight of ICU capacity
  - Alternate care locations for patients in need of high-level critical care
- ICU Personal Protective Equipment Considerations
  - Closed inline ventilator circuit suctioning does not require PAPR/CAPR/N94 use
  - Initiate airborne precautions for high risk procedures (intubation, bronchoscopy, sputum induction, suctioning, opening ventilator circuit, etc.) on patients suspected or confirmed to have COVID-19

Adult and Pediatric Code Blue

- General Principles
  - **All providers entering the room should be appropriately trained in use of the appropriate PPE. All appropriate PPE must be in place prior to entry.**
  - In a non-trauma code, begin chest compressions with all healthcare providers donning the required PPE prior to entering the room.
  - The patient should be initially ventilated with a bag-valve mask by a healthcare provider wearing appropriate PPE. Do not begin intubation until all personnel are wearing the appropriate PPE.
  - During intubation, all persons present in the room should wear a PAPR or CAPR.
  - Prior to any transfer, the patient should receive new bed linens.
  - If intubated, the patient be placed on a ventilator, so that there is a filtered contained circuit.
  - If transfer of the patient is required after intubation, all persons in the room should doff and degerm prior to moving the patient. Then, if in close contact with the patient during transfer, each person should don a new gown, gloves, eye protection and respiratory protection.
  - All equipment will remain in room after code event
  - Await infection preventionist direction in removal of cart, contents and other equipment brought into the room
  - If Interosseous needed: wipe with bleach solution/ wipe and leave on crash cart until further direction given
    - Glidescope: wipe down with bleach solution/wipe and leave in room until further direction given

Pediatrics

Inpatient Planning

Based on most current information about the virus:

1. COVID-19 can cause respiratory illness requiring hospitalization
2. Nosocomial spread has been documented with COVID-19
3. Our goals of inpatient admission for patients with confirmed or suspected COVID-19 is to:

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a. Provide excellent patient care
b. Limit spread of COVID-19 to health-care workers thru appropriate PPE and isolation
c. Diagnose COVID-19 quickly and accurately

Inpatient Workflow

I. Notification received from ED or clinic of need for bed for known or suspect COVID-19 patient
    a. Prepare private room for admit
        i. Secure isolation supplies (isolation masks, gowns, eye protection, gloves, hand sanitizer); if applicable gather N95 and / or PAPR/CAPR supplies
        ii. Confirm dedicated or disposable patient-care equipment (e.g., blood pressure cuffs, stethoscope)
        iii. Obtain HCW and Visitor tracker logs
        iv. Ensure communication device located in room and phone number known
        v. Post Droplet and Contact Precautions and eye protection signs on the door outside the patient's room

II. Arrange transportation for admit: Huddle with transporting and receiving staff
    a. Confirm patient will be masked during transport
    b. Confirm PPE for transportation staff
    c. Confirm maintenance of cleared/secure pathways
    d. Arrange for transportation in a dedicated elevator.
        i. If patient is masked during transportation, elevator does not need terminal clean.
    e. Confirm that primary caregiver / household contacts that are accompanying the patient are masked within the facility

III. Patient arrival in hospital room
    a. Preparing to enter room
        i. Perform hand hygiene
        ii. Put on a gown; fasten at the neck and back
        iii. Put on isolation mask
        iv. Put on eye protection (face shield or goggles)

IV. Infection Control procedures while performing patient care inside room
    a. Remember to keep hands away from face and head
    b. Limit surfaces touched to minimize contamination
    c. Change gloves throughout care delivery if torn or heavily contaminated
    d. Perform hand hygiene between glove use

V. Caregiver instructions / expectations
    a. Must go straight to/from room (e.g. not stop and eat in the cafeteria, etc.)
    b. Agree to an active check for symptoms daily and to restrict visitation if symptoms develop
    c. Receive instruction on infection control practices and wear PPE as instructed:
        i. Clean hands before entering and leaving the patient room
        ii. Wear mask when outside the patient room
        iii. To minimize contamination on their clothes and body, wear gown and gloves when providing direct care such as feeding, bathing, etc.

VI. Refer to separate PPE and waste removal protocols for additional details.

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Maternal Child Health

OB Telephone Advice Screening

- Pregnant patients without ILI (Influenza Like Illness) will receive AACC (Appointment and Advice Call Center) and L&D Telephone advice per standard workflows.
- Pregnant patient with ILI calling the AACC:
    - AACC will screen patient and manage per protocol
    - AACC RN will transfer patients with an obstetrical concern to the L&D home facility for telephone advice and phone consultation with the OB MD
- Pregnant patient with ILI calling L&D
    - L&D RN will screen patient for obstetrical concern and manage per telephone advice protocol
    - L&D RN will transfer patient with ILI and NO obstetrical concern to the AACC RN for telephone advice and management per AACC protocol

Arrival to L&D

- Pregnant patients arriving to L&D without ILI will be screened for risk of infection using ED screening workflows
    - L&D triage and observation per standard workflows
- Pregnant patients arriving to L&D with ILI without an obstetrical concern may be redirected to the ED for screening and isolation
- Pregnant patients arriving to L&D with ILI and an obstetrical concern will be masked and roomed immediately. Family members will also be masked.
    - L&D triage and observation per standard workflows
    - Notification of ANM and House Supervisor to assist in escalation of Suspected COVID / PUI (Patient Under Investigation) workflow

Arrival to ED

- Pregnant patients arriving to the ED without ILI will be screened for risk of infection using ED screening workflows
    - Treat or transfer to L&D triage depending on gestational age and reason for ED visit per standard workflows
- Pregnant patients arriving to the ED with ILI without an obstetrical concern will require ED screening and isolation workflows per standards of ILI
    - OB MD consultation in the ED will occur per standard workflows
- Pregnant patients arriving to the ED with ILI and an obstetrical concern will be masked and escorted to L&D for evaluation.
    - Notify L&D ANM and House Supervisor to assist in escalation of PUI workflow and transfer of the patient to the L&D unit

Labor and Delivery

- Patients in labor with ILI will be cared for by as few staff as possible to minimize exposure
- Isolation rooms will be used if available for labor and delivery
- The labor patient will remain masked for the duration of labor and delivery.
- The medical team will wear Personal Protective Equipment (PPE) as defined by the IP workflows and the L&D unit guidelines to prevent contamination with bodily fluids
- Patient's requiring Cesarean Section for delivery will be masked during surgery and moved to an isolation room or single patient room for recovery, rather than the open bay/multi-bed Post-Anesthesia Recovery (PAR).

After Delivery

- Although it is well recognized that the ideal setting for the care of a healthy newborn while in the hospital is within the mother's room, the risk of serious complications in newborns infected with COVID-19 is unknown.

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Recently COVID-19 infection was reported in a 30-hour old newborn. It is suspected that transmission occurred postnatally. The risk of prenatal transmission is unlikely, but unknown.

- To reduce the risk of COVID-19 transmission to the newborn, we recommend that facilities consider temporarily separating the mother who is ill with suspected or confirmed COVID-19 from her baby following delivery during the hospital stay.
    - Separation is favored if:
        - Mother tests positive for COVID-19, or
        - Mother meets Centers for Disease Control and Prevention (CDC) criteria for PUI (patient under investigation)
    - Separation is **not** favored if:
        - Mother is asymptomatic, or
        - Mother does not meet CDC criteria for PUI
- The risks and benefits of temporary separation of the mother from her baby should be discussed with the mother by the health care team, and decisions about temporary separation should be made in accordance with the mother's wishes.
    - Infants separated from their mothers may be housed in a private room, as available, with an asymptomatic family member or healthy caregiver with the door closed since data about asymptomatic transmission of COVID-19 is limited.
    - Healthy family or staff members present to provide care (e.g., diapering, bathing) and feeding for the newborn, should use appropriate PPE including gown, gloves, face mask, and eye protection.
    - If there is no family member to care for the infant, the infant will need to be placed in an incubator in the nursery away from other infants. Contact and droplet precautions with eye protection should be worn by all medical personnel providing care to the infant.
    - The mother or any symptomatic adult requires a surgical mask if they are within 3-6 feet of the infant
- The optimal length of temporary separation in the hospital has not been established and will need to be assessed on a case-by-case basis after considering factors to balance the risk of mother-to-infant COVID-19 transmission versus maintaining maternal-infant bonding. Some considerations might include:
    - if the mother has been afebrile without antipyretics for >24 hours, and
    - the mother can control her cough and respiratory secretions.
- If co-location (aka as "rooming in") of the newborn with his/her ill mother in the same hospital room occurs in accordance with the mother's wishes OR is unavoidable due to a hospital's configuration, nursery constraints, lack of availability of isolation rooms, or other reasons, facilities should consider implementing measures to reduce COVID-19 exposure of the newborn including:
    - using physical barriers (e.g., a curtain between the mother and newborn)
    - keeping the newborn more than 6 feet away from the ill mother
    - ensuring a healthy adult is present to care for the newborn.
    - If no healthy adult is present in the room to care for the newborn, a mother with suspected or confirmed COVID-19 should put on a facemask and then practice hand hygiene before each feeding or other close contact with her newborn. The facemask should remain in place during contact with the newborn.

Breastfeeding Recommendations

We do not know whether mothers with COVID-19 can transmit the virus via breast milk though the risk if suspected to be low since COVID-19 is transmitted through respiratory droplets. Whether and how to start or continue breastfeeding should be determined by the mother in coordination with her family and healthcare provider.

- A mother with confirmed COVID-19 or who is a symptomatic PUI should take all proper precautions to avoid spreading the virus to her infant, including:
    - Washing her hands before touching the infant
    - Wearing a face mask, if possible, while feeding at the breast

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    - If expressing breast milk with a manual or electric breast pump, the mother should wash her hands before touching any pump or bottle parts and follow recommendations for proper pump cleaning after each use
    - Consider having someone who is well feed expressed breast milk to the infant
- If needed, a dedicated breast pump should be provided. Prior to expressing breast milk, mothers should practice hand hygiene.
- After each pumping session, all parts that come into contact with breast milk should be thoroughly washed and the entire pump should be appropriately disinfected per the manufacturer's instructions.

Nursery

- When a newborn of a mother with suspected or confirmed COVID-19 is housed in a room instead of the mother's room, the newborn can be cared for by a non-ill person using droplet and contact precautions with eye protection. The infant should be closely observed for signs of infection.
- Symptomatic mothers, caregivers, and family members should not enter the infant's room.
- A newborn that develops signs of possible illness should remain in droplet and contact precautions with eye protection and examined by a physician.

Visitation

- Visitors should be limited to persons who are necessary for the patient's emotional well-being and care, preferably a single visitor during the hospital stay. Visitors who have been in contact with an infected patient before and during her hospitalization are a possible source of COVID-19 for other patients, visitors, and staff. All visitors should be screened for signs and symptoms of fever and acute respiratory illness before being allowed to enter the hospital or unit, and only asymptomatic persons should be allowed to visit. Masks should be used liberally for family members if there is a question of exposure to the infected patient.
- Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy while in the patient's room.
- Visitors should be instructed to limit their movement within the facility.

Reference: https://www.cdc.gov/coronavirus/2019-ncov/hcp/inpatient-obstetric-healthcare-guidance.html

Ambulance

General Strategies

- Ambulance personnel PPE will be per EMS protocols
- Kaiser Permanente medical facilities will provide an area outside the medical facilities for EMS personnel to doff their personal protective equipment and clean their ambulance
- One medical facility staff member will meet ambulance personnel at a designated location outside the medical facility
- Medial facility staff member will escort the patient and accompanying family to designated COVID-19 evaluation and assessment area within the facility
- When direct admit is possible, patient and accompanying family will be escorted to inpatient setting

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Laboratory/Testing

Community Evaluation

- Testing should be available for both inpatients and outpatients for community surveillance
- Once community prevalence is established, outpatient testing should be discontinued
    - Supportive treatment based on symptomatology will be recommended

Hospital Evaluation

- COVID-19 testing should be available in local public health department labs medical facility labs for the duration of the COVID-19 outbreak
- Once community prevalence is established, outpatient testing should be discontinued
    - Supportive treatment based on symptomatology will be recommended
- Inpatient testing will continue for the duration of the outbreak because decisions regarding isolation will be made based on these results.

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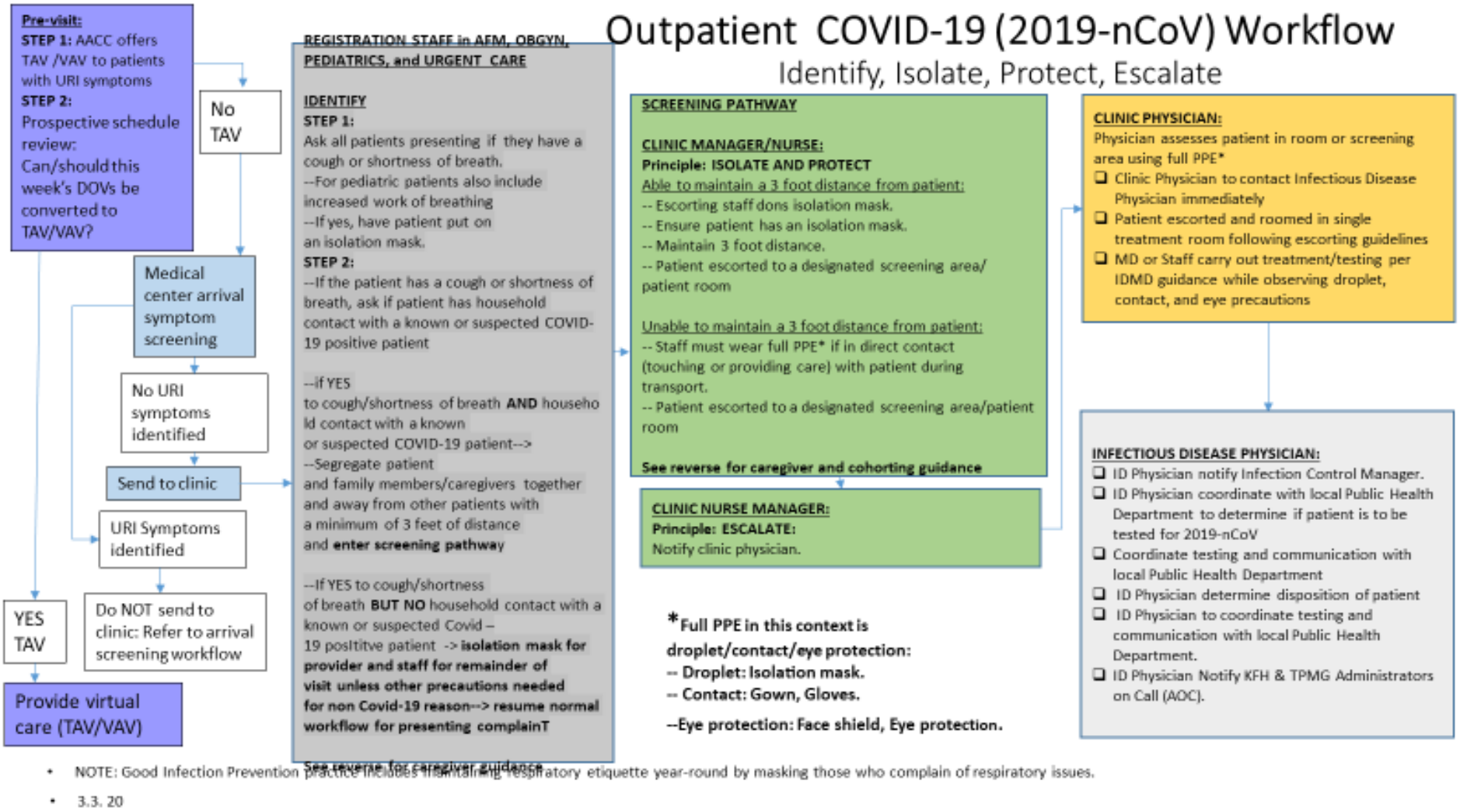
Appendices

Ambulatory – Covid-19 Mitigation Workflow Diagram



- NOTE: Good Infection Prevention practice includes maintaining respiratory etiquette year-round by masking those who complain of respiratory issues.
- 3.3. 20

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Additional Guidance

- **IDENTIFY: NOTE FOR CAREGIVERS:**
- - Limit visitors to a single caregiver when possible.
- - While in ED, instruct caregiver to remain with patient.
- - Instruct caregivers to wear an isolation mask when outside the patient room and to clean hands before entering and leaving the patient room.
- - If more than a single caregiver recommend that, if possible, additional visitors leave the medical facility after screening. Strongly discourage additional visitors /caregivers remain in public locations (e.g., waiting room, cafeteria) in medical center.

- **ISOLATE AND PROTECT NOTE FOR CAREGIVERS:** Recommend all visitors be excused from the screening area with the exception of an adult family member for a pediatric patient or a necessary caregiver for an adult patient. See Note for Caregivers.

- **SCREENING AREA COHORTING:** Patients may be cohorted in the screening area while being assessed provided the following are maintained:
  - 3 foot minimum distance from other patients.
  - Reasonable privacy considerations.
  - PPE must be changed between patients.

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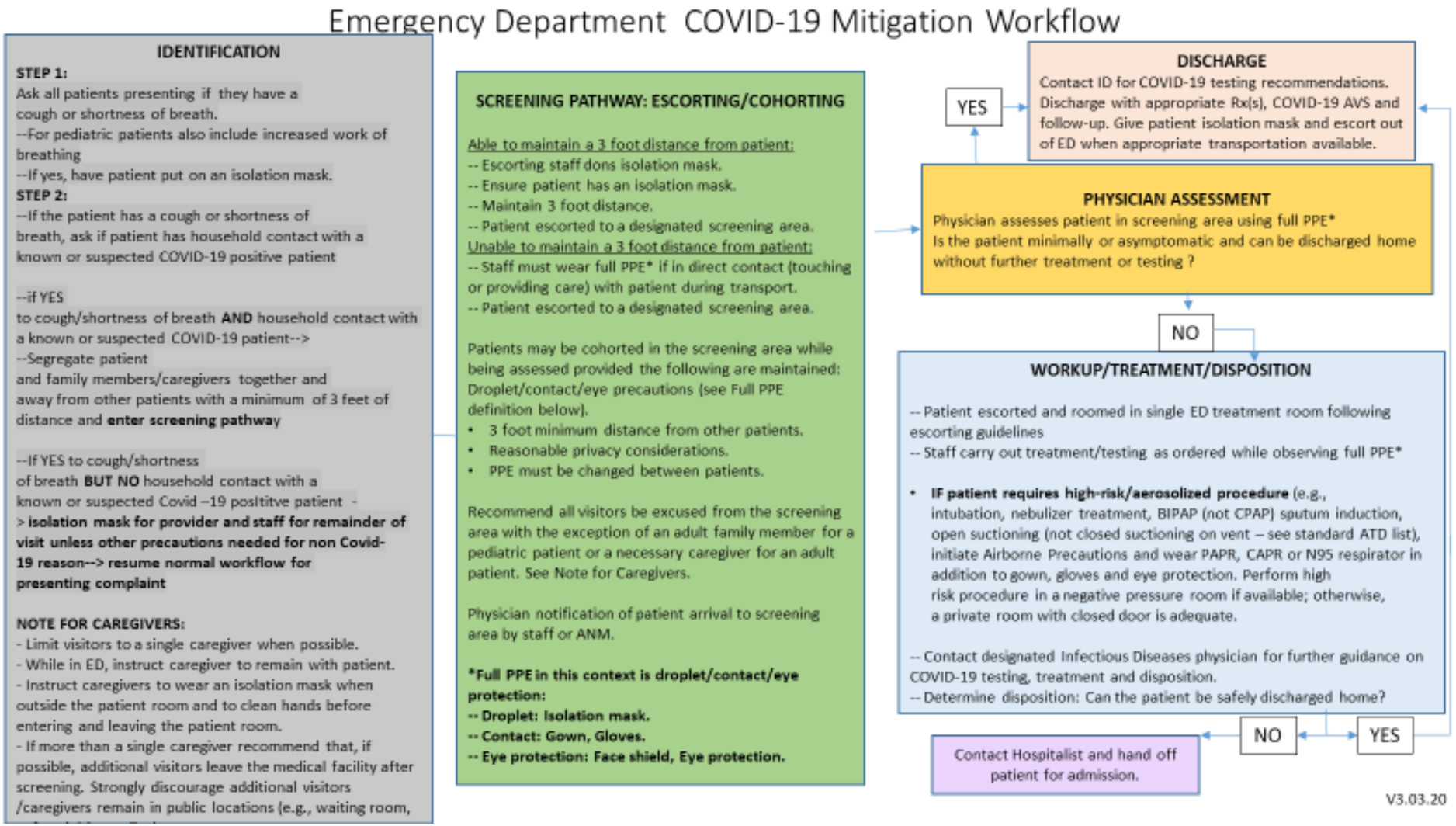
Emergency Department – Covid-19 Mitigation Workflow Diagram



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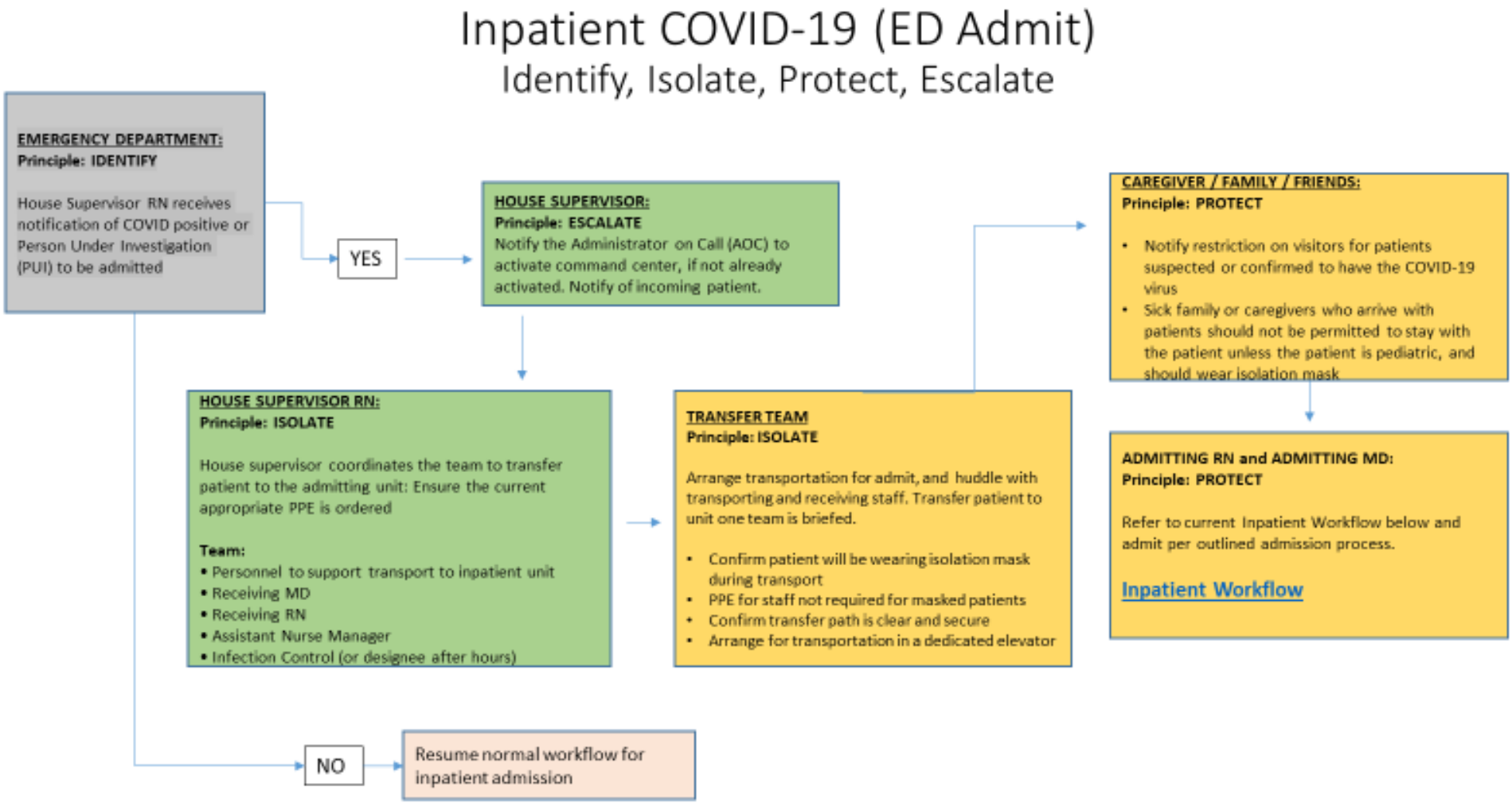

V3.3.20PCS NOTE: Good Infection Prevention practice includes maintaining respiratory etiquette year-round by masking those who complain of respiratory issues

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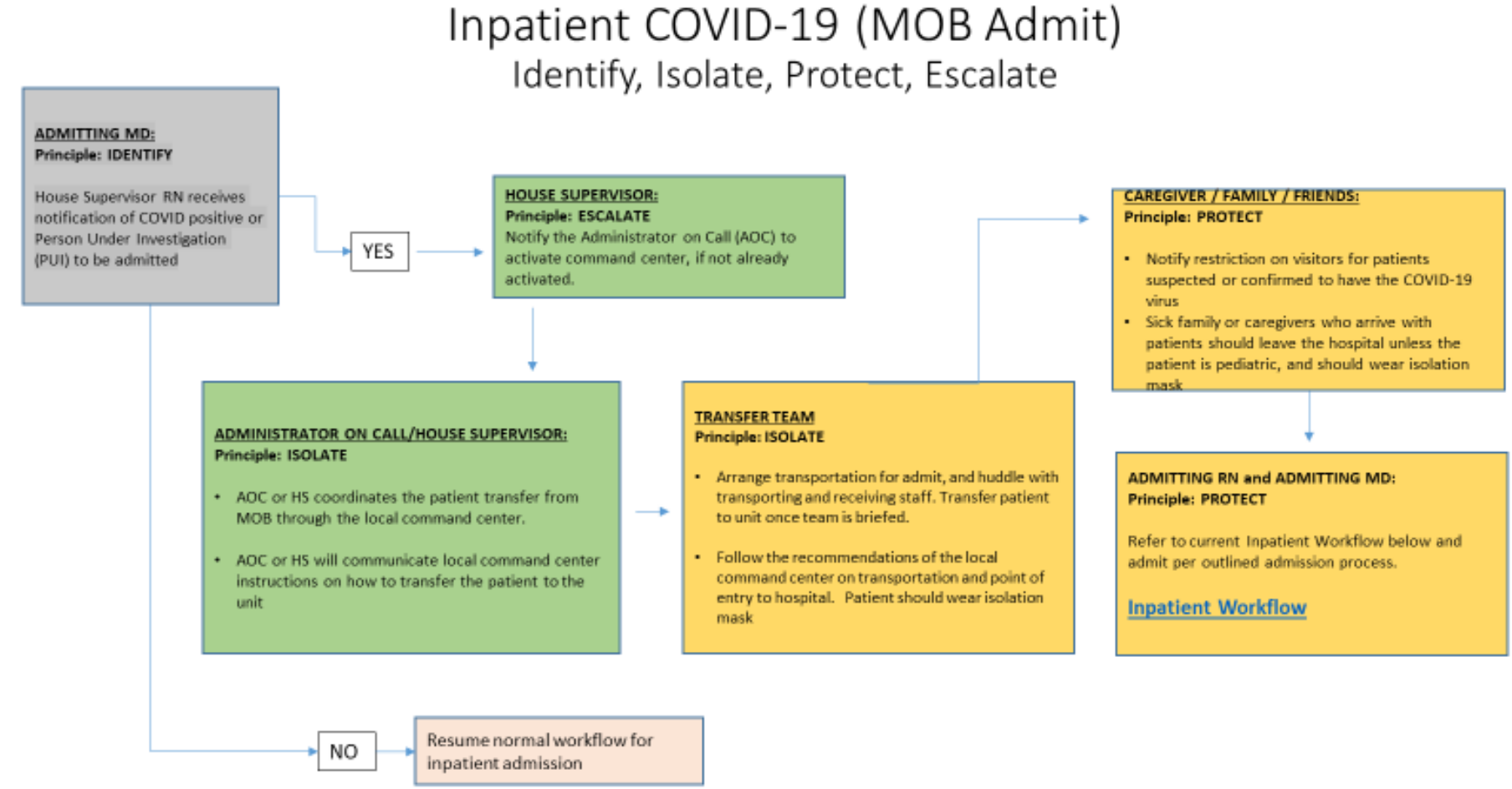
Inpatient –Admission from Medical Office Building (MOB) Workflow Diagram



V3.3.20PCS NOTE: Good Infection Prevention practice includes maintaining respiratory etiquette year-round by masking those who complain of respiratory issues

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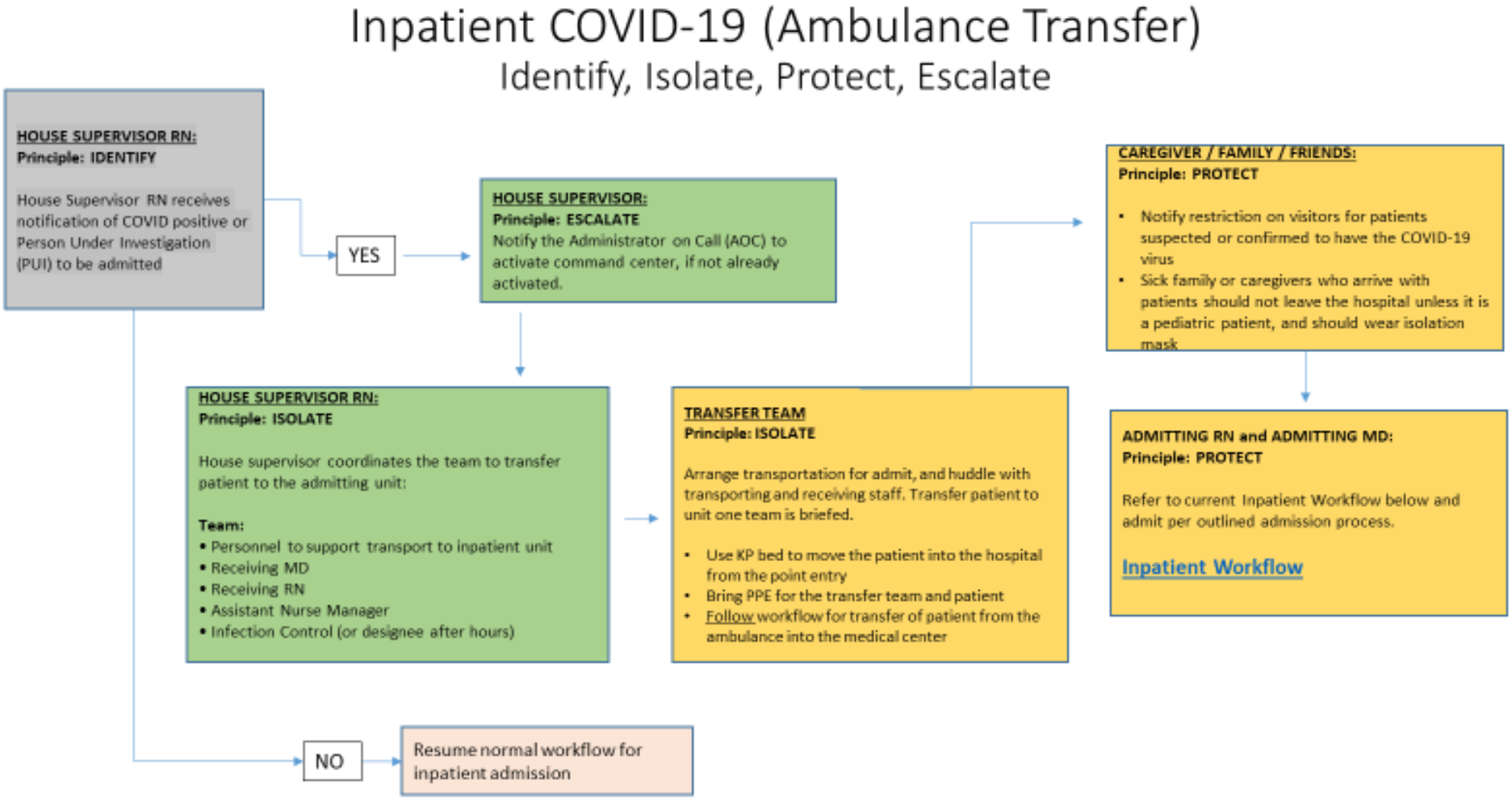

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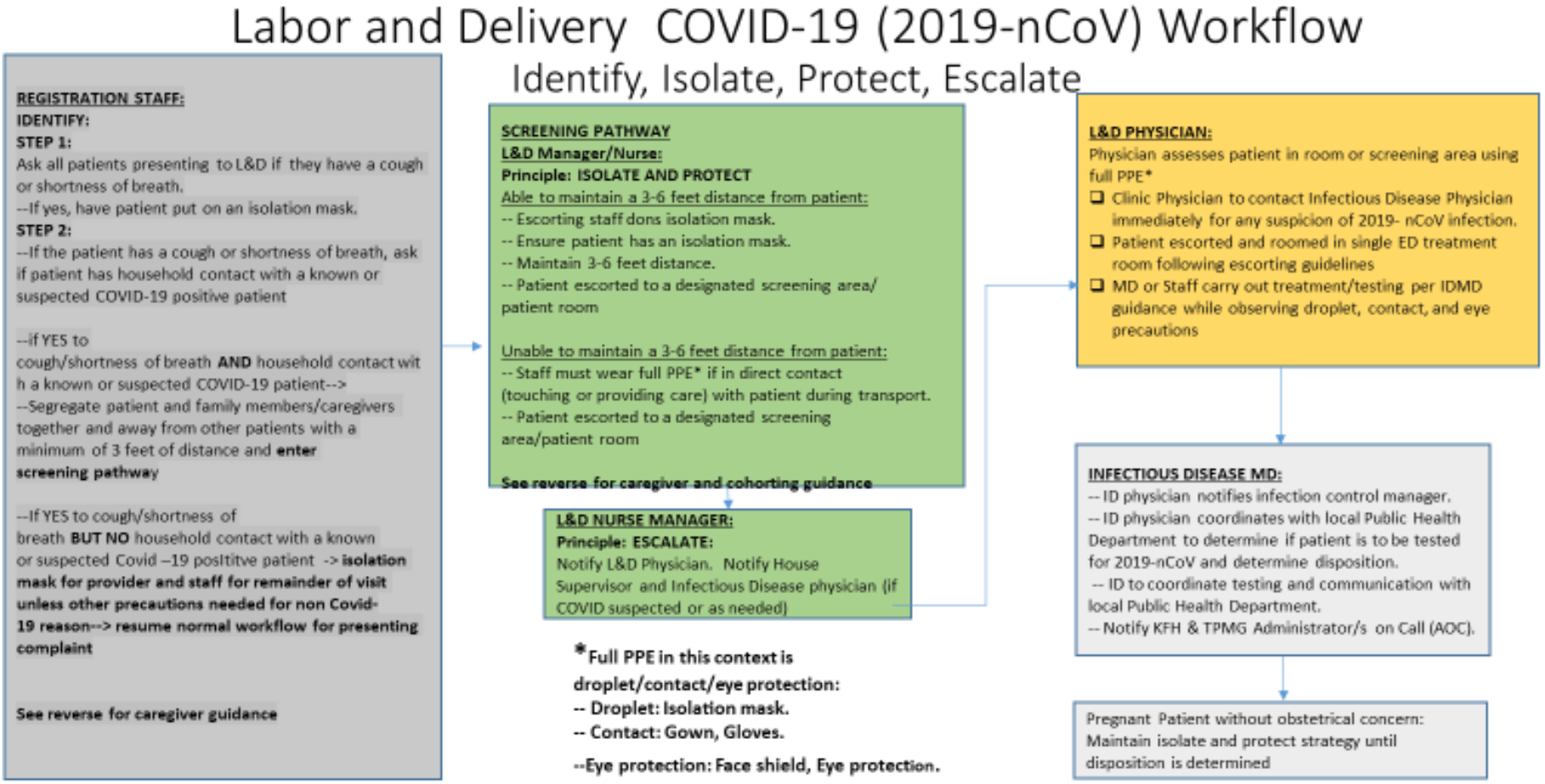

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Additional Guidance

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  - 3 foot minimum distance from other patients.
  - Reasonable privacy considerations.
  - PPE must be changed between patients.

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RESPIRATORY Therapy COVID-19 (2019-nCoV Workflow)

Identify, Isolate, and Treat

Maintain department isolation:

Isolate & Protect

Patient who is confirmed positive or suspected for Covid-19 requires full PPE*

- Door is to remained closed
- Patient to wear isolation mask if able
- If the patient is masked the healthcare practitioners need not wear a mask during transport
- Full PPE* should be observed when in direct contact
- See high risk/aerosolized procedure note next box

PROVIDING RESPIRATORY THERAPY SERVICES

Guidelines for Direct Care

- Full PPE* should be observed when in direct contact with patient, less than 3 feet (gown, gloves, eye protection, and isolation mask)
- Patients may be cohorted while being assessed provided the following are maintained:
  - Droplet/contact/eye precautions (see Full PPE definition below)
  - 3-foot minimum distance from other patients
  - Reasonable privacy consideration
  - PPE must be changed between patients
- **IF patient requires high-risk/aerosolized procedure** (e.g., intubation, nebulizer treatment, BIPAP (not CPAP), sputum induction, open suctioning (not closed suctioning on vent – see standard ATD list), initiate Airborne Precautions and wear PAPR, CAPR or N95 respirator in addition to gown, gloves and eye protection. Perform high risk procedure in a negative pressure room if available; otherwise, a private room with closed door is adequate.
- Nebulization of medication is considered high risk and should be reviewed for appropriateness before administration

Equipment

- Use disposable equipment when possible
- A disposable stethoscope should be placed in patient room
- Home CPAP units should not be brought into facilities for use by patient who are confirmed positive or suspected for COVID-19. Utilize hospital CPAP machines.

Therapies

- Every shift all ordered Respiratory Therapy modalities should be evaluated for necessity
- Oxygen need only be administered if necessary and should be weaned as applicable
- When possible, small volume nebulizer should be converted to metered dose inhaler with spacer
- High Risk procedures (intubation, bronchoscopy, sputum induction, nasotracheal suctioning) should be reviewed with the HealthCare Team for necessity

DISCONTINUING RESPIRATORY CARE:

Patient has met Care Plan Goals and no longer needs Respiratory Therapy intervention

- All disposable items after patient use should be placed in red biohazard bag
- All non-disposable equipment should be disinfected per infection control guidelines

***Full PPE in this context is droplet/contact/eye protection:**
-- Droplet: Isolation mask.
-- Contact: Gown, Gloves.
--Eye protection: Face shield, Eye protection

NOTE: Good Infection Prevention practice includes maintaining respiratory etiquette year-round by masking those who complain of respiratory issues
V3.3.20

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CT – COVID-19 Mitigation Workflow

Step 1: Prepare CT Suite for patient arrival *IDENTIFY ONE CT UNIT TO UTILIZE*

- Secure isolation supplies (N95 respirators, isolation masks, gowns, eye protection, gloves, hand sanitizer); if applicable gather PAPR/CAPR supplies
- Confirm dedicated or disposable patient-care equipment (e.g., blood pressure cuffs, stethoscope)
- Notify EVS to prepare for terminal clean of CT Suite (Room # XXXX)

Step 2:Arrange transportation to CT: Huddle receiving staff (CT Team)

- Confirm patient will be masked during transport
- Confirm PPE for transportation staff
- Confirm maintenance of cleared/secure pathways
- Arrange for transportation in a dedicated elevator. If patient is masked during transportation, elevator does not need terminal clean.
- Confirm that primary caregiver / household contacts that are accompanying the patient are masked within the facility

Step 3:Follow Infection Prevention Mitigation Plan for use of N95 or PAPR/CAPR

Prior to Entering the Patient room

- Prior to entering the patient room, check in at the nurses station to inform RN that you are there to perform an imaging study.
- Sign into the log book. Make sure to clearly write all of your information into eachfield of the sign in sheet.
- There will be a RN staff 24 hours 7 days a week to monitor and assist with donning and doffing of PPE.
- All needed PPE is located in the anteroom area of the patient's room.

Infection Control procedures while performing patient care inside room

- Remember to keep hands away from face and head
- Limit surfaces touched to minimize contamination
- Change gloves throughout care delivery if torn or heavily contaminated
- Perform hand hygiene between glove use

Place all waste generated from the room of a known of suspect COVID-19 patient into a red biohazard bag and leave in the room.

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Removal of waste and transportation

- Cleaning of transportation (e.g. ambulance gurney, larger bed, wheelchair) or other medical devices (e.g. portable x-ray, cardiac ultrasound, etc.)
    - Clean equipment within the room maintaining > 3 feet distance from masked patient before leaving the room and before doffing the PPE.
    - If a cleaning distance of > 3 feet from the patient cannot be maintained in the patient room, the equipment should be wiped down and moved to a nearby empty room and then fully cleaned. That second room would then require terminal cleaning for COVID-19.
- Waste will be removed from room per EVS protocol, packaged, stored and hauled away from our facilities in accordance with the requirements of the medical waste vendor.
- EVS will prepare to terminal clean the CT suite and room will remain out of service for duration

Cleaning the portable x-ray unit

- Wipe down the body of the portable x-ray unit
- Wipe down the touchscreen of the portable x-ray with Clorox wipes
- Can be cleaned with Sani-cloth wipes
- Wipes can be found in the PPE area

Special considerations:

- After Imaging the patient, leave the imaging plate in the room
- WAIT 1 Hour before cleaning, after cleaning equipment can be removed
- Ensure signage is posted prominently:
    - Portable Please Do Not Remove This Portable From its Current Location Unless Instructed by a member of the Radiology Management Team
- Use the provided C-Arm Drape to cover the Portable x-ray unit.
- Cover the base of the Portable x-ray unit with a C-Armor Cover
- Cover the exposure button with the provided blue cover.
    - Double bag the imaging cassette

CT Unit OR portable x-ray unit: After completion of exam, wait one hour before cleaning, use disinfectant and follow manufacturer's drying recommendations.When this is completed, asset is ready for use.

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Portable X-rayand C-arm – Covid-19 Mitigation Workflow

STOP..... PLEASE READ INFORMATION BELOW -Please Do Not Remove This Portable From its Current Location Unless Instructed by A Member of the Radiology Management Team. Make Sure to Follow All Standard and Droplet Cleaning Precautions After use.

- Prior to entering the patient room, check in at the nurses' station to inform RN that:
- You are there to perform an imaging study.
- Sign into the log book. Make sure to clearly write all of your information into each field of the sign in sheet.
- There's a RN staff 24 hours 7 days a week to monitor and assist with donning and doffing of PPE.
- All needed PPE is located in the anteroom area of the patient's room.

Preparing to enter the patients room

Preparing to enter CT Suite using **N95 Respirator**	Preparing to enter CT Suite using **PAPR/CAPR**
• Perform hand hygiene • Put on a gown; fasten at the neck and back • Put on N95 Respirator • Put on eye protection (face shield or goggles) • Put on gloves	• Perform hand hygiene • Put on PAPR/CAPR belt/battery pack • Put on a gown; fasten at the neck and tie back underneath unit • Turn on unit • Put on PAPR hood/CAPR helmet • Put on gloves

Step 2: Preparing to enter the patient's room:

- Use the provided C-Arm Drape to cover the Portable x-ray unit.
- Cover the base of the Portable x-ray unit with a C-Armor Cover
- Cover the exposure button with the provided blue cover.
- *Double bag the imaging cassette*

Step 3: While in the patient's room:

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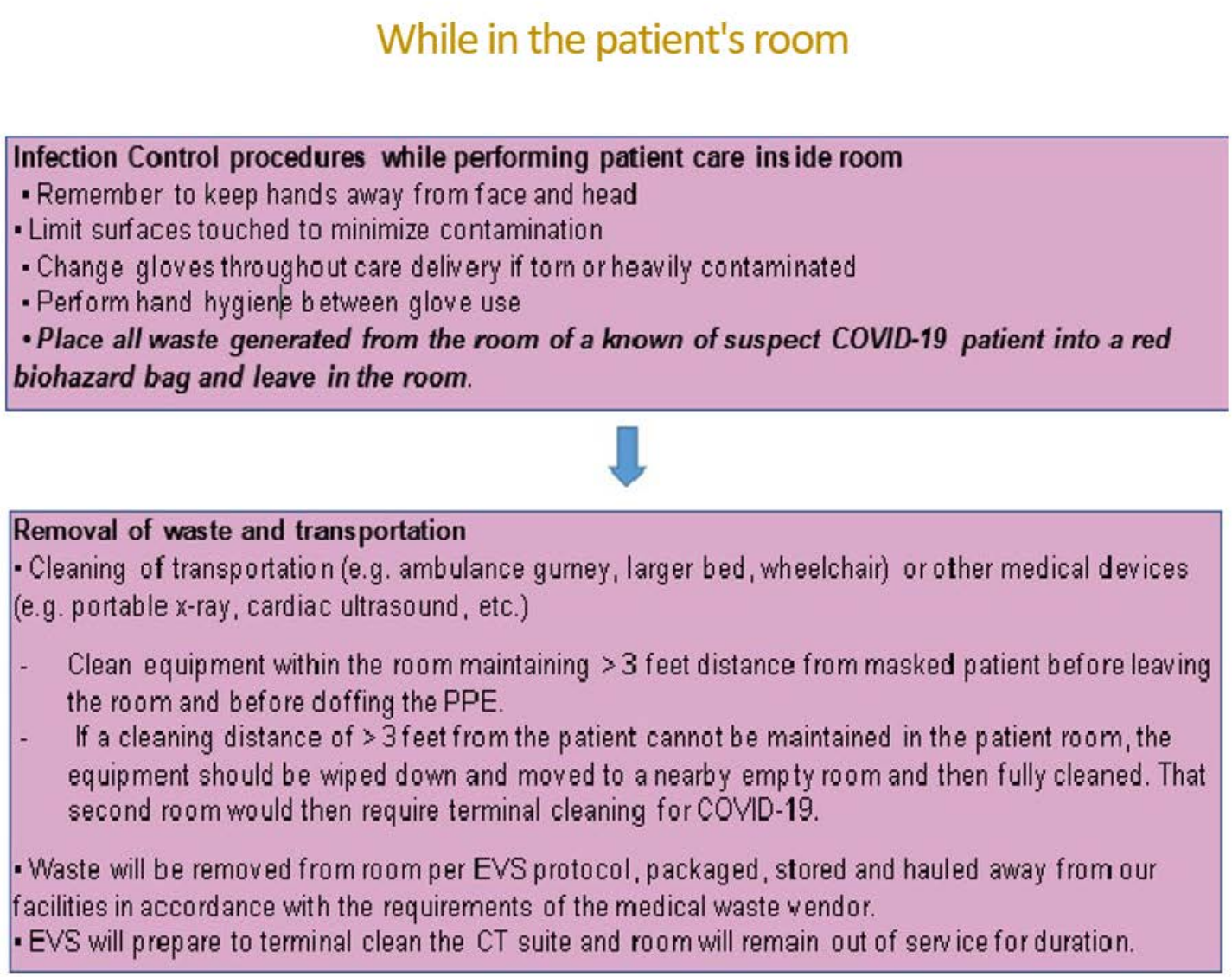

Step 4: Cleaning the portable x-ray unit:

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After Imaging the patient, leave the imaging plate in the room –

WAIT 1 Hour before cleaning, after cleaning equipment can be removed

Preparing to Exit the patients room

WEAR RECOMMENDED PPE AND PROPER DONNING/DOFFING PROTOCOLS. ASK NURSE MANAGER IF YOU HAVE QUESTIONS

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Cleaning the portable x-ray unit.

Wait 1 hr.

WEAR RECOMMENDED PPE AND PROPER DONNING/DOFFING PROTOCOLS. ASK NURSE MANAGER IF YOU HAVE QUESTIONS

Wipe down the body of the portable x-ray unit

Wipe down the touchscreen of the portable x-ray with Clorox wipes (See Below).

- can be cleaned with Sani-cloth wipes (See Below).
- wipes found in the PPE area
- equipment may be used after manufactures drying time recommendations.