Coronavirus (COVID-19) Interim Guidelines

# Introduction and Use

OLD DOMINION EMS ALLIANCE

**(UPDATED 5/4/2020)**

Old Dominion EMS Alliance
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## **Intention**:

The following guidelines serve to provide direction to localities within the Old Dominion EMS Alliance region, concerning response to the current Coronavirus disease pandemic (COVID-19).

The use and implementation of these guidelines will be determined by the locality.

To determine which guideline to perform, localities must consider current prevalence of disease in their jurisdiction and strain on resources. With differing levels of needs, the Coronavirus Disease Interim Guidelines allow for fluidity and for escalation, if necessary, in this growing, dynamic situation.

For example, if a locality has no prevalence of disease and no strain on resources, the locality would consider performing level 1 guidelines (Normal Operations). If the status of the same locality worsens, the locality may consider escalating to guideline 2a then to 2b. These guidelines allow localities the flexibility to respond to their specific, unique needs.

Level 3 and Level 4 guidelines exist but are not included at this time. Level 3 and Level 4 may be released at a future date, but only if the status of the region's disease prevalence and resource availability quickly deteriorates.

Going forward, additions or adjustments to these guidelines will be indicated in the color **red**.

The Old Dominion EMS Alliance wishes to recognize the efforts of the Metro-Richmond Incident Management Team for their diligence in creating these guidelines.

# Drug Box Decontamination Procedure

## (Updated 5/1/2020)

Intention:

To limit further spread of disease and for the protection of pharmacy and/or emergency department personnel during drug box exchange operations.

Procedure:

- EMS should decontaminate the outside of the drug box following turnover of patient care and prior to drug box exchange.

- EMS should decontaminate any visual contaminates found within the interior and wipe trays as best as possible. This should be completed following turnover of patient care and prior to drug box exchange**.** **(Updated 4/9/2020)**

- EMS should limit touching the drug box, close the drug box when not in use and maintain the drug box at a distance of 6 feet away from the patient, when possible. **(Added 3/26/2020)**

- EMS should use an appropriate decontaminating agent, such as sanitizing wipes, in accordance to normal operating procedures. ODEMSA does not endorse any specific product and recommends EMS confirm with manufacturer's label to ensure the agent is appropriate for Coronavirus.

- Upon successful completion of the drug box decontamination procedure, EMS is permitted to proceed with drug box exchange. EMS will notify pharmacy OR emergency department personnel (wherever drug box exchange is performed), the drug box decontamination was completed.

- **For Confirmed COVID-19 Patients or PUI:** EMS should attach a portion of black or black/white triage tape (whichever is available by the EMS agency) to the handle of the drug box following the decontaminating procedure and prior to drug box exchange**.** **(Added 4/9/2020) (Updated 5/1/2020)**

# Coronavirus (COVID-19) Interim Guideline

# Level 1

## Definition:

**Coronavirus Interim Guideline Level 1** is for normal operations. Normal operations is defined as:

- No prevalence of disease in the locality AND
- No strain on resources.

If these criteria apply, the locality may implement Level 1 at their discretion.

Level 1

**SECTION:**

**GUIDELINE TITLE:** Interim Guidance during COVID-19 outbreak
Level 1

**REVISED:** version 03/18/2020

**PURPOSE:** Provide for a defined, consistent policy for the care of COVID- 19 patients during the declared emergency beginning March 2020. These guidelines are in effect for the duration of the declared state of emergency or the retirement or update to this interim guidance.

**Background**: Emergency medical services play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, patient care and transports by EMS present unique challenges because of the nature of the setting, the enclosed space during transport, the frequent need for rapid medical decision-making and interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

**Levels of Response:**

If the crisis expands, the service delivery model may change to meet demand.

Level 1: Normal operations
Level 2: Surge with minimal disease burden
Level 3: Diminished response with moderate disease burden
Level 4: Crisis standards of care

**Subsection:**

A. PSAP recommendations
B. Triage and destination considerations
C. PPE and precautions recommendations
D. Specific changes to patient care guidelines during care of COVID-19 patients
E. Cleaning of equipment and units
F. Exposure follow up

Continued

## SUBSECTION A: Public Safety Answering Points (PSAP) recommendations

PSAPs should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated.
Information on COVID-19 will be updated as the crisis evolves.

Information on a possible patient with COVID-19 should be communicated immediately to EMS provider before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

If PSAP receives call for information regarding testing and points of testing are available, it is reasonable to refer to VDH (1-877-ASK-VDH3).

An example of screening is below:

1. Have they (caller) been in contact with someone with confirmed COVID- 19 or traveled outside the country in the last 21 days? (yes/no)
2. Have they (caller) tested positive or have pending results for COVID-19 in the past 2 weeks? (yes/no)
3. Are they (caller) complaining of cough or SOB with fever (measured or subjective)? (yes/no)

**If positive (yes) for any one of the questions, follow PPE guidelines.**

- PSAP should notify crews to wear PPE.
- Provider to alert hospital that crew is wearing PPE.

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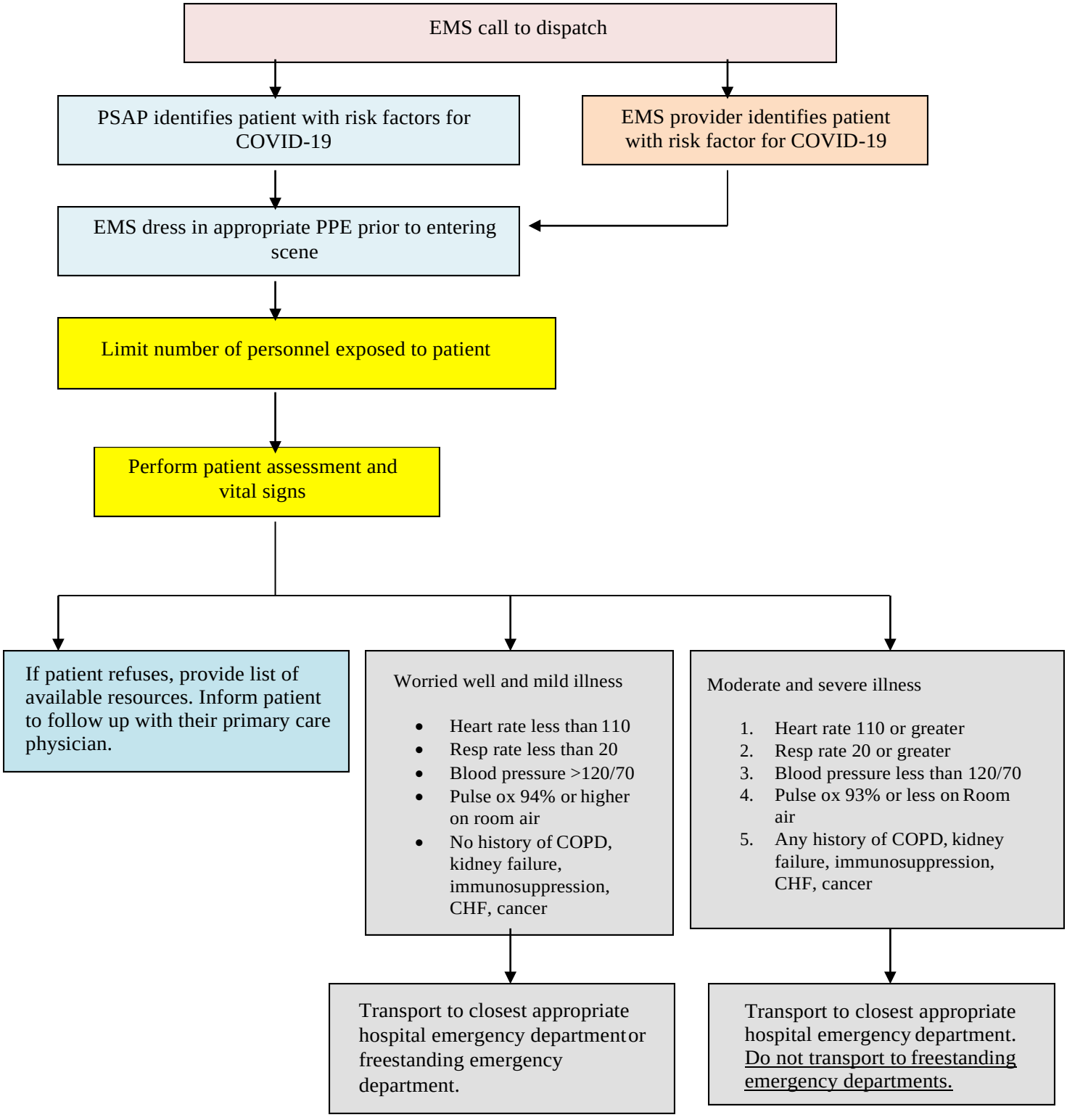
## SUBSECTION B: Triage and destination recommendations (level 1)



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## SUBSECTION C: PPE and precautions recommendations

EMS providers who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below.

**Recommended PPE and precautions include:**

1. Place surgical mask on patient.
2. N95 or higher-level respirator or surgical mask (if a respirator is not available). Surgical masks are an acceptable alternative during shortages of N95 or if not fit tested by agency.
    a. N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure.
3. Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
4. A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated.
5. Isolation gown.
    a. If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
6. Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
    a. If the transport vehicle does **not** have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
    b. When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.

[redacted]

   c. Close the door/window between these compartments before bringing the patient on board and keep these doors and windows tightly shut.
   d. During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
   e. If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
7. Keep the patient separated from other people as much as possible.
   a. Family members and other contacts of patients with possible COVID-19 should **not** ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a surgical mask.
8. Personnel should avoid touching their face while working.
9. EMS personnel should notify the receiving healthcare facility prior to arriving, and with as much notice as possible, notify facility that PPE is being worn
10. After transfer of patient care, remove and discard PPE and perform hand hygiene.
   a. Used PPE should be discarded in accordance with routine procedures.
11. Maintain appropriate PPE while in unit until unit is decontaminated.
12. Maintain appropriate PPE while performing decon of unit and stretcher (see subsection E: Cleaning of equipment and unit recommendations).
13. If available and feasible, return to station, shower, and change into a clean uniform.

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**Reuse of N95 during shortages**

Reuse of N95 respirators is permitted; however, there is no way of determining the maximum possible number of safe reuses for an N95 respirator as a generic number to be applied in all cases. Safe N95 reuse is affected by several variables that impact respirator function and contamination over time.

1. Discard N95 respirators following use during aerosol- generating procedures.
2. Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
3. Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions (MRSA, C Diff, RSV).
4. Hang used respirators or keep them in a clean, breathable container (paper bag).
5. Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the N95.
6. Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator with potentially contaminated hands, discard N95.
7. Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Adjustments N95 to sit comfortably on face with a good seal.
8. N95 respirators must only be used by a single wearer. Do not share.

Continued

**SUBSECTION D: Specific changes to patient care guidelines during care of COVID-19 patients**

Follow current patient care guidelines to treat patients based on primary impression with the following caveats:

**Considerations during Aerosol-Generating Procedures**

1. Bring patient's MDI with patient to hospital whenever possible.
2. If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
3. An N95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for the EMS provider present for or performing aerosol-generating procedures (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway pressure (BiPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)).
4. EMS providers should exercise caution if an aerosol-generating procedure is necessary.
5. BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air if available.
6. EMS agencies should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
7. If possible, the rear doors of the transport vehicle should be opened and the HVAC system and exhaust fan should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

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**SUBSECTION E: Cleaning of equipment and unit recommendations**

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

1. After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air exchange to remove potentially infectious particles.
    a. The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air exchange.
2. When cleaning the vehicle, EMS providers should wear a new disposable gown and gloves. A face shield or surgical mask and goggles should also be worn if splashes or sprays during cleaning are anticipated.
3. Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.
4. Routine cleaning and disinfection procedures to disinfectant to frequently touched surfaces should continue.
5. Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected.
6. Clean and disinfect reusable patient-care equipment before use on another patient.
7. Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.
8. Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

**SUBSECTION F: Exposure follow up**

EMS providers should be aware of the follow-up and/or reporting measures they should take after caring for a suspected COVID-19 patient:

1. EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
    a. Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to their supervisor, and/or designated infection control officer for evaluation.
    b. EMS providers should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify designated their infection control officer and/or occupational health services.
2. Confirmed cases will be investigated for their potential contacts with EMS. Hospitals and Health departments should be notifying the agency through the agency's designated infection control officer.
    a. The designated infection control officer will notify the exposed personnel.
        i. Exposure to COVID-19 does not equate to being infectious and/or contagious.
        ii. Agencies should develop procedures for exposed personnel and educate providers on their infection control policies.

# Coronavirus (COVID-19) Interim Guideline

# Level 2a

## Definition:

**Coronavirus Interim Guideline Level 2a** is defined as:

- Mild prevalence of disease with minimal disease spread in the locality AND
- Minimal strain on resources.

If these criteria apply, the locality may implement Level 2a at their discretion.

Level 2a

**SECTION:**

**GUIDELINE TITLE:** Interim Guidance during COVID-19 outbreak
Level 2a

**REVISED:** version 03/18/2020

**PURPOSE:** Provide for a defined, consistent policy for the care of COVID- 19 patients during the declared emergency beginning March 2020. These guidelines are in effect for the duration of the declared state of emergency or the retirement or update to this interim guidance.

**Background**: Emergency medical services play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, patient care and transports by EMS present unique challenges because of the nature of the setting, the enclosed space during transport, the frequent need for rapid medical decision-making and interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

**Levels of Response:**

If the crisis expands, the service delivery model may change to meet demand.

Level 1: Normal operations
Level 2: Surge with minimal disease burden
Level 3: Diminished response with moderate disease burden Level 4: Crisis standards of care

**Subsection:**

A. PSAP recommendations
B. Triage and destination considerations
C. PPE and precautions recommendations
D. Specific changes to patient care guidelines during care of COVID-19 patients
E. Cleaning of equipment and units
F. Exposure follow up.

Continued

## SUBSECTION A: Public Safety Answering Points (PSAP) recommendations

PSAPs should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Information on COVID-19 will be updated as the crisis evolves.

Information on a possible patient with COVID-19 should be communicated immediately to EMS provider before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

If PSAP receives call for information regarding testing and points of testing are available, it is reasonable to refer to VDH (1-877-ASK-VDH3).

An example of screening is below:

1. Have they (caller) been in contact with someone with confirmed COVID- 19 or traveled outside the country in the last 21 days? (yes/no)
2. Have they (caller) tested positive or have pending results for COVID-19 in the past 2 weeks? (yes/no)
3. Are they (caller) complaining of cough or SOB with fever (measured or subjective)? (yes/no)

**If positive (yes) for any one of the questions, follow PPE guidelines.**

- PSAP should notify crews to wear PPE.
- Provider to alert hospital that crew is wearing PPE.

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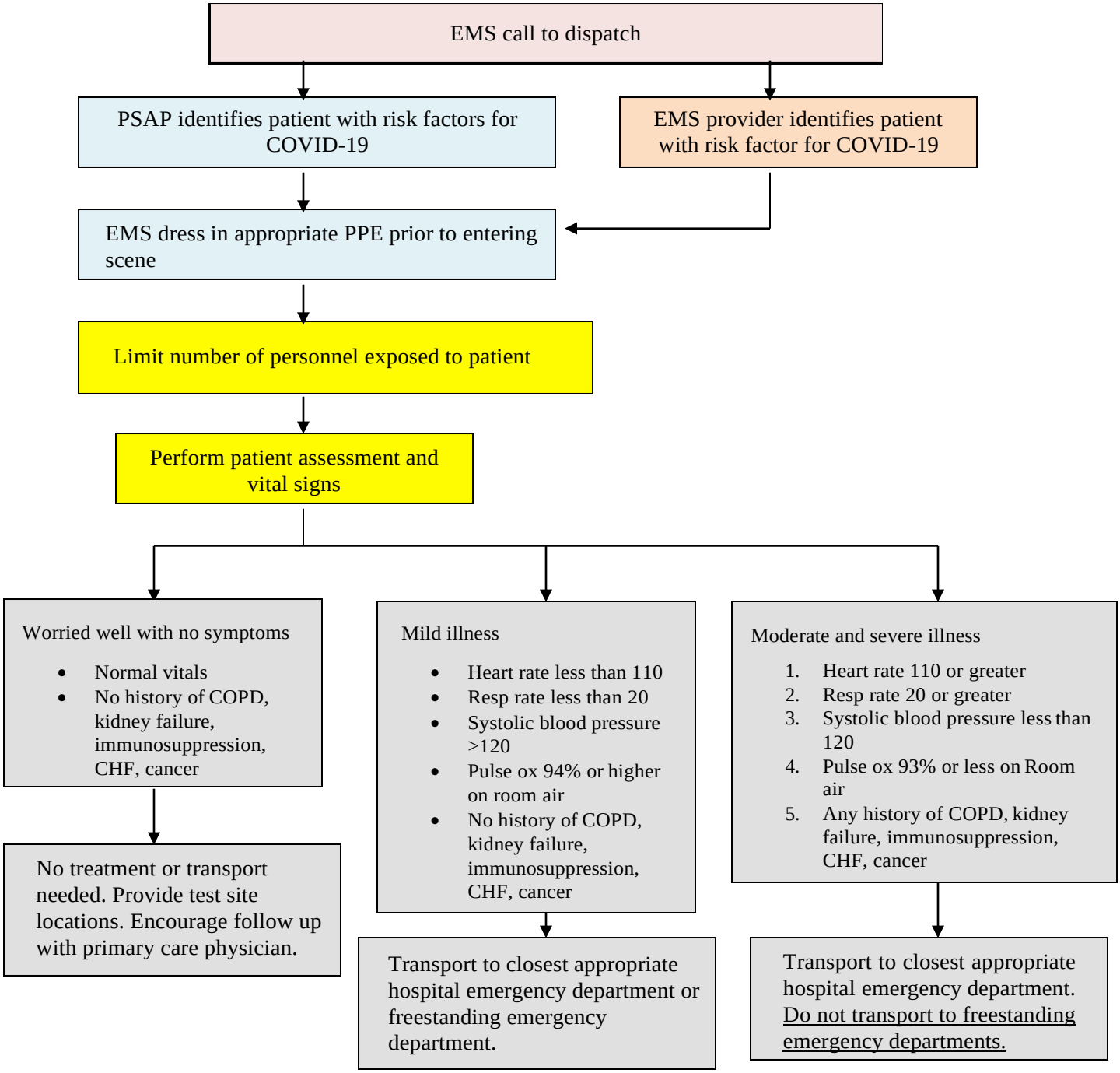
**SUBSECTION B: Triage and destination recommendations (level 2a)**




If patient refuses, provide list of available resources. Inform patient to follow up with their primary care physician.

Continued

## SUBSECTION C: PPE and precautions recommendations

EMS providers who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below.

**Recommended PPE and precautions include:**

1. Place surgical mask on patient.
2. N95 or higher-level respirator or surgical mask (if a respirator is not available). Surgical masks are an acceptable alternative during shortages of N95 or if not fit tested by agency.
    a. N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure.
3. Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
4. A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated.
5. Isolation gown.
    a. If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
6. Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
    a. If the transport vehicle does **not** have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
    b. When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.

[redacted]

   c. Close the door/window between these compartments before bringing the patient on board and keep these doors and windows tightly shut.
   d. During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
   e. If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
7. Keep the patient separated from other people as much as possible.
   a. Family members and other contacts of patients with possible COVID-19 should **not** ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a surgical mask.
8. Personnel should avoid touching their face while working.
9. EMS personnel should notify the receiving healthcare facility prior to arriving, and with as much notice as possible, notify facility that PPE is being worn
10. After transfer of patient care, remove and discard PPE and perform hand hygiene.
   a. Used PPE should be discarded in accordance with routine procedures.
11. Maintain appropriate PPE while in unit until unit is decontaminated.
12. Maintain appropriate PPE while performing decon of unit and stretcher (see subsection E: Cleaning of equipment and unit recommendations).
13. If available and feasible, return to station, shower, and change into a clean uniform.

Continued

[redacted]

**Reuse of N95 during shortages**

Reuse of N95 respirators is permitted; however, there is no way of determining the maximum possible number of safe reuses for an N95 respirator as a generic number to be applied in all cases. Safe N95 reuse is affected by several variables that impact respirator function and contamination over time.

1. Discard N95 respirators following use during aerosol-generating procedures.
2. Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
3. Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions (MRSA, C Diff, RSV).
4. Hang used respirators or keep them in a clean, breathable container (paper bag).
5. Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the N95.
6. Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator with potentially contaminated hands, discard N95.
7. Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Adjustments N95 to sit comfortably on face with a good seal.
8. N95 respirators must only be used by a single wearer. Do not share.

Continued

[redacted]

**SUBSECTION D: Specific changes to patient care guidelines during care of COVID-19 patients**

Follow current patient care guidelines to treat patients based on primary impression with the following caveats:

**Considerations during Aerosol-Generating Procedures**

1. Bring patient's MDI with patient to hospital whenever possible.
2. If possible, avoid nebulized treatments.
    a. Administer 4-8 puffs albuterol via MDI every 20 minutes for patients suspected to have COVID-19 (PUI).
3. Stop nebulized treatments while bringing patient into hospital.
4. EMS providers should exercise caution if an aerosol-generating procedure is necessary. A N95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS provider present for or performing aerosol- generating procedures (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway pressure (BiPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)).
5. BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air if available.
6. If possible, the rear doors of the transport vehicle should be opened and the HVAC system and exhaust fan should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

Continued

[redacted]

**SUBSECTION E: Cleaning of equipment and unit recommendations**

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

1. After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air exchange to remove potentially infectious particles.
    a. The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air exchange.
2. When cleaning the vehicle, EMS providers should wear a new disposable gown and gloves. A face shield or surgical mask and goggles should also be worn if splashes or sprays during cleaning are anticipated.
3. Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.
4. Routine cleaning and disinfection procedures to disinfectant to frequently touched surfaces should continue.
5. Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected.
6. Clean and disinfect reusable patient-care equipment before use on another patient.
7. Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.
8. Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Continued

[redacted]

**SUBSECTION F: Exposure follow up**

EMS providers should be aware of the follow-up and/or reporting measures they should take after caring for a suspected COVID-19 patient:

1. EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
    a. Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to their supervisor, and/or designated infection control officer for evaluation.
    b. EMS providers should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify their designated infection control officer and/or occupational health services.
2. Confirmed cases will be investigated for their potential contacts with EMS. Hospitals and Health departments should be notifying the agency through the agency's designated infection control officer.
    a. The designated infection control officer will notify the exposed personnel.
        i. Exposure to COVID-19 does not equate to being infectious and/or contagious.
        ii. Agencies should develop procedures for exposed personnel and educate providers on their infection control policies.

# Coronavirus (COVID-19) Interim Guideline

# Level 2b

## Definition:

**Coronavirus Interim Guideline Level 2b** is defined as:

- Increased prevalence of disease in the locality AND
- Strain on resources.

If these criteria apply, the locality may implement Level 2b at their discretion.

**SECTION:**

**GUIDELINE TITLE:** Interim Guidance during COVID-19 outbreak
Level 2b

**REVISED:** version 03/18/2020

Level 2b

**PURPOSE:** Provide for a defined, consistent policy for the care of COVID- 19 patients during the declared emergency beginning March 2020. These guidelines are in effect for the duration of the declared state of emergency or the retirement or update to this interim guidance.

**Background**: Emergency medical services play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, patient care and transports by EMS present unique challenges because of the nature of the setting, the enclosed space during transport, the frequent need for rapid medical decision-making and interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

**Levels of Response:**

If the crisis expands, the service delivery model may change to meet demand.

Level 1: Normal operations
Level 2: Surge with minimal disease burden
Level 3: Diminished response with moderate disease burden Level 4: Crisis standards of care

**Subsection:**

A. PSAP recommendations
B. Triage and destination considerations
C. PPE and precautions recommendations
D. Specific changes to patient care guidelines during care of COVID-19 patients
E. Cleaning of equipment and unites
F. Exposure follow up

Continued

**SUBSECTION A: Public Safety Answering Points (PSAP) recommendations**

PSAPs should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated.
Information on COVID-19 will be updated as the crisis evolves.

Information on a possible patient with COVID-19 should be communicated immediately to EMS provider before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

If PSAP receives call for information regarding testing and points of testing are available, it is reasonable to refer to VDH (1-877-ASK-VDH3).

An example of screening is below:

1. Have they (caller) been in contact with someone with confirmed COVID-19 or traveled outside the country in the last 21 days? (yes/no)
2. Have they (caller) tested positive or have pending results for COVID-19 in the past 2 weeks? (yes/no).
3. Are they (caller) complaining of cough or SOB with fever (measured or subjective)? (yes/no).

**If positive (yes) for any one of the questions, follow PPE guidelines.**

- PSAP should notify crews to wear PPE.
- Provider to alert hospital that crew is wearing PPE.

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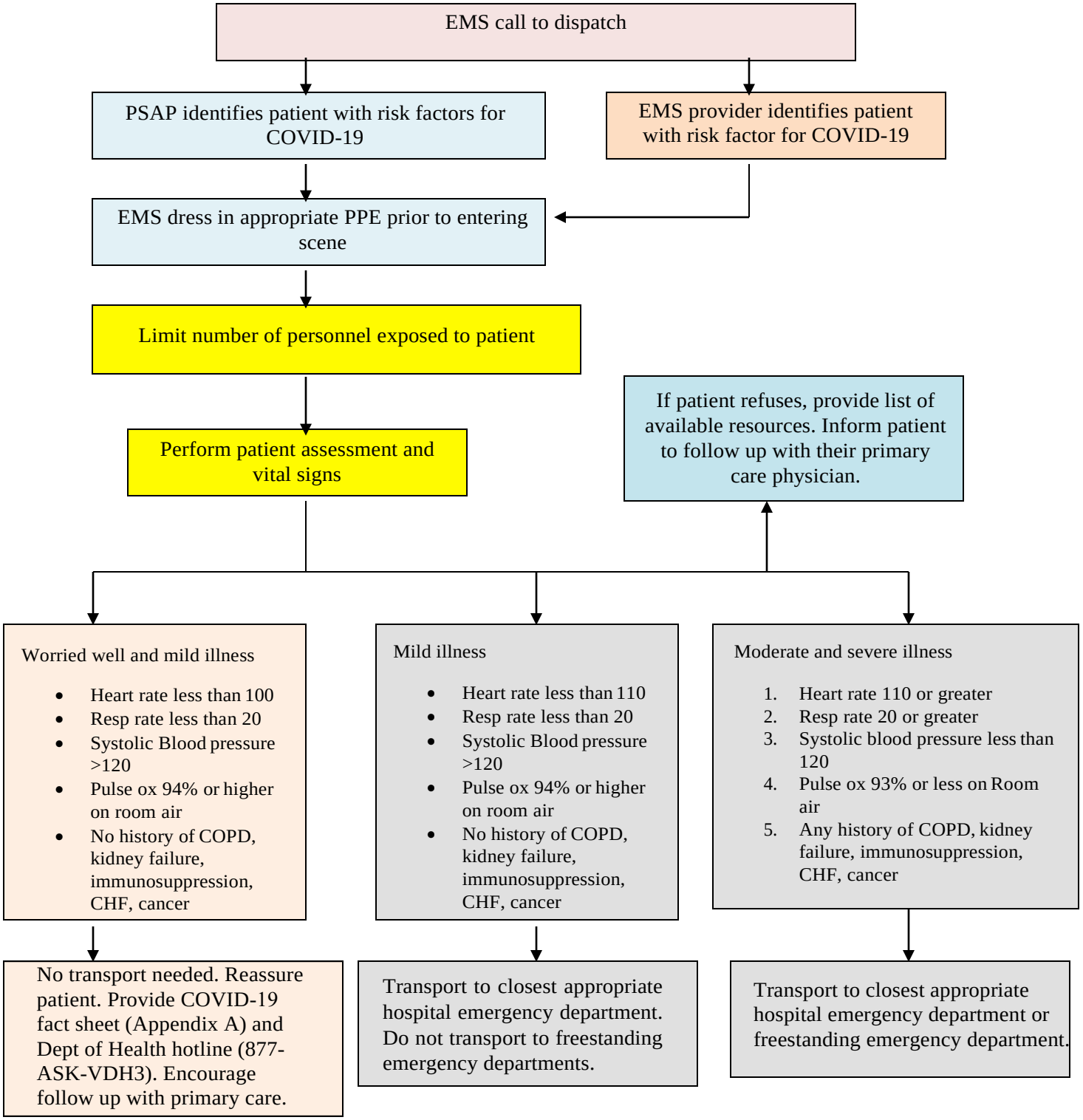
## SUBSECTION B: Triage and destination recommendations (level 2b)



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## SUBSECTION C: PPE and precautions recommendations

EMS providers who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below.

**Recommended PPE and precautions include:**

1. Place surgical mask on patient.
2. N95 or higher-level respirator or surgical mask (if a respirator is not available). Surgical masks are an acceptable alternative during shortages of N95 or if not fit tested by agency.
    a. N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure.
3. Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
4. A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated.
5. Isolation gown.
    a. If there are shortages of gowns, they should be prioritized for aerosol- generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
6. Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
    a. If the transport vehicle does **not** have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
    b. When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.

[redacted]

c. Close the door/window between these compartments before bringing the patient on board and keep these doors and windows tightly shut.
d. During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
e. If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.

7. Keep the patient separated from other people as much as possible.
    a. Family members and other contacts of patients with possible COVID- 19 should **not** ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a surgical mask.
8. Personnel should avoid touching their face while working.
9. EMS personnel should notify the receiving healthcare facility prior to arriving, and with as much notice as possible, notify facility that PPE is being worn
10. After transfer of patient care, remove and discard PPE and perform hand hygiene.
    a. Used PPE should be discarded in accordance with routine procedures.
11. Maintain appropriate PPE while in unit until unit is decontaminated.
12. Maintain appropriate PPE while performing decon of unit and stretcher (see subsection E: Cleaning of equipment and unit recommendations).
13. If available and feasible, return to station, shower, and change into a clean uniform.

Continued

## Reuse of N95 during shortages

Reuse of N95 respirators is permitted. There is no way of determining the maximum possible number of safe reuses for an N95 respirator as a generic number to be applied in all cases. Safe N95 reuse is affected by several variables that impact respirator function and contamination over time.

1. Discard N95 respirators following use during aerosol generating procedures.
2. Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
3. Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions (MRSA, C Diff, RSV).
4. Hang used respirators or keep them in a clean, breathable container (paper bag).
5. Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the N95.
6. Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator with potentially contaminated hands, discard N95.
7. Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Adjustments N95 to sit comfortably on face with a good seal.
8. N95 respirators must only be used by a single wearer. Do not share.

Continued

**SUBSECTION D: Specific changes to patient care guidelines during care of COVID-19 patients**

Follow current patient care guidelines to treat patients based on primary impression with the following caveats:

**Limiting Aerosol-Generating Procedures for potential COVID-19 patients**

1. Bring patient's MDI with patient to hospital whenever possible.
2. No nebulizers for patients who have screened positive.
    a. Administer 4-8 puffs albuterol via MDI every 20 minutes for all patients requiring bronchodilator treatment.
3. No CPAP or BiPAP without HEPA filtration for patients who have screened positive.
4. An N95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS provider present for or performing aerosol-generating procedures (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, bi-phasic positive airway pressure (BiPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)).
5. BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air if available.
6. If possible, the rear doors of the transport vehicle should be opened and the HVAC system and exhaust fan should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

Continued

## SUBSECTION E: Cleaning of equipment and unit recommendations

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

1. After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air exchange to remove potentially infectious particles.
    a. The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air exchange.
2. When cleaning the vehicle, EMS providers should wear a new disposable gown and gloves. A face shield or surgical mask and goggles should also be worn if splashes or sprays during cleaning are anticipated.
3. Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.
4. Routine cleaning and disinfection procedures to disinfectant to frequently touched surfaces should continue.
5. Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected.
6. Clean and disinfect reusable patient-care equipment before use on another patient.
7. Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.
8. Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Continued

**SUBSECTION F: Exposure follow up**

EMS providers should be aware of the follow-up and/or reporting measures they should take after caring for a suspected COVID-19 patient:

1. EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
    a. Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to their supervisor, and/or designated infection control officer for evaluation.
    b. EMS providers should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify their designated infection control officer and/or occupational health services.
2. Confirmed cases will be investigated for their potential contacts with EMS. Hospitals and Health departments should be notifying the agency through the agency's designated infection control officer.
    a. The designated infection control officer will notify the exposed personnel.
        i. Exposure to COVID-19 does not equate to being infectious and/or contagious.
        ii. Agencies should develop procedures for exposed personnel and educate providers on their infection control policies.

# Coronavirus (COVID-19) Interim Guideline

# Level 3

## Definition:

**Coronavirus Interim Guideline Level 3** is defined as:

- Further increasing disease prevalence
- Burden on resources
- Diminished 911 response

If necessary to escalate, Level 3 guidelines will be released at a future date based on the status of the region.

# Coronavirus (COVID-19) Interim Guideline

# Level 4

## Definition:

**Coronavirus Interim Guideline Level 4** is defined as:

- Crisis standards of care

If necessary to escalate, Level 4 guidelines will be released at a future date based on the status of the region.

# Appendix A

COVID-19 Fact Sheet
For Patient Distribution

# What to do if you are sick with coronavirus disease 2019 (COVID-19)

**If you are sick with COVID-19 or suspect you are infected with the virus that causes COVID-19, follow the steps below to help prevent the disease from spreading to people in your home and community. Call your doctor or the Virginia Department of Health at 877-ASK-CDH3 if you have questions or need to find testing locations.**

## Stay home except to get medical care

You should restrict activities outside your home, except for getting medical care. Do not go to work, school, or public areas. Avoid using public transportation, ride-sharing, or taxis.

## Separate yourself from other people and animals in your home

**People:** As much as possible, you should stay in a specific room and away from other people in your home. Also, you should use a separate bathroom, if available.

**Animals:** Do not handle pets or other animals while sick. See COVID-19 and Animals for more information.

## Call ahead before visiting your doctor

If you have a medical appointment, call the healthcare provider and tell them that you have or may have COVID-19. This will help the healthcare provider's office take steps to keep other people from getting infected or exposed.

## Wear a facemask

You should wear a facemask when you are around other people (e.g., sharing a room or vehicle) or pets and before you enter a healthcare provider's office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then people who live with you should not stay in the same room with you, or they should wear a facemask if they enter your room.

## Cover your coughs and sneezes

Cover your mouth and nose with a tissue when you cough or sneeze. Throw used tissues in a lined trash can; immediately wash your hands with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60-95% alcohol covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty.

## Avoid sharing personal household items

You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people or pets in your home. After using these items, they should be washed thoroughly with soap and water.

## Clean your hands often

Wash your hands often with soap and water for at least 20 seconds. If soap and water are not available, clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.

## Clean all "high-touch" surfaces every day

High touch surfaces include counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables. Also, clean any surfaces that may have blood, stool, or body fluids on them. Use a household cleaning spray or wipe, according to the label instructions. Labels contain instructions for safe and effective use of the cleaning product including precautions you should take when applying the product, such as wearing gloves and making sure you have good ventilation during use of the product.

## Monitor your symptoms

Seek prompt medical attention if your illness is worsening (e.g., difficulty breathing). **Before** seeking care, call your healthcare provider and tell them that you have, or are being evaluated for, COVID-19. Put on a facemask before you enter the facility. These steps will help the healthcare provider's office to keep other people in the office or waiting room from getting infected or exposed.

Ask your healthcare provider to call the local or state health department. Persons who are placed under active monitoring or facilitated self-monitoring should follow instructions provided by their local health department or occupational health professionals, as appropriate.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you have, or are being evaluated for COVID-19. If possible, put on a facemask before emergency medical services arrive.

## Discontinuing home isolation

Patients with confirmed COVID-19 should remain under home isolation precautions until the risk of secondary transmission to others is thought to be low. The decision to discontinue home isolation precautions should be made on a case-by-case basis, in consultation with healthcare providers and state and local health departments.

# Appendix B

## Stress Guidance for EMS Providers


ADVANCING SCIENCE AND PROMOTING UNDERSTANDING OF TRAUMATIC STRESS

# Managing Stress Associated with the COVID-19 Virus Outbreak

## Impact of the COVID-19 Outbreak on Individuals and Communities

The COVID-19 (coronavirus) outbreak has the potential to increase stress and anxiety, both because of the fear of catching the virus and also because of uncertainty about how the outbreak will affect us socially and economically. There are practical steps you can take to improve your wellbeing.

## Coping with the Stress of COVID-19

Dealing with stress reactions caused by the COVID-19 virus outbreak can improve your health, quality of life, and wellbeing. The following evidence-informed principles have been shown to be related to better outcomes in many adverse situations (Hobfoll et al., 2007). There are key actions within each element that might be especially helpful for those affected by the COVID-19 outbreak (Reissman et al, 2006; Gonzales, 2003). It's not necessary to have all elements in place but implementing some of the following suggestions may help you deal with the stress caused by the COVID-19 virus.

### *Increase Sense of Safety*

Reduce anxiety with healthy actions that make you feel safer. The Centers for Disease Control and Prevention (CDC) and other experts suggest the following good hygiene habits to limit the risk of infection:

- Wash hands frequently with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer.
- Cover your mouth and nose with a tissue when you cough or sneeze.
- Properly dispose of used tissues.
- Cough or sneeze into your upper sleeve, arm, or elbow if you don't have a tissue.
- Clean your hands after coughing or sneezing.
- Stay at home if you are sick.
- Avoid contact with those who are sick.
- Clean and disinfect objects or surfaces that may have come into contact with germs.
- Make plans for what will happen if someone in the home becomes ill or if quarantine or shelter-in-place measures are ordered.

Read more about prevention.

### *Stay Connected*

- Seek support from family, friends, mentors, clergy, and those who are in similar circumstances.
- Be flexible and creative in accessing support via phone, email, text messaging, and video calls.
- Talk to your supervisor about the possibility of working from home temporarily.

### *Cultivate Ways to be More Calm*

- Realize that it is understandable to feel anxious and worried about what may happen, especially when many aspects of life are being affected.
- If you find that you are getting more stressed by watching the news, reduce your exposure, particularly prior to sleep.
- While circumstances may be stressful and beyond your control, you can try to offset them with positive calming activities. Practice slow, steady breathing and muscle relaxation, as well as any other actions that are calming for you (yoga, exercise, music, keeping the mind occupied).
- Preparing for a range of possible scenarios and having adequate supplies should sheltering at home be necessary can help you feel more calm. For instance, you can put together a kit with supplies to last you and your family 3 – 5 days. Include supplies such as:
  - Water and food, vitamins, fluids with electrolytes, and food preparation items such as a manual can opener.
  - Prescribed medical supplies or equipment, such as glucose or blood pressure monitoring equipment; thermometer; medicines for fever, such as acetaminophen or ibuprofen; anti-diarrheal medication.
  - Hygiene supplies such as soap and water, alcohol-based hand wash, soap, tissues, toilet paper, and disposable diapers if necessary.
  - General supplies such as a flashlight and batteries, portable radio, and garbage bags.

Read more about pandemic preparedness.

### *Improve Your Sense of Control and Ability to Endure*

- Accept circumstances that cannot be changed and focus on what you can alter.
- Modify your definition of a "good day" to meet the current reality of the situation.
- Problem-solve and set achievable goals within the new circumstances in your life.
- Evaluate the absolute risk of contracting the virus and recognize the benefits of accepting a certain level of risk in order to maintain as much of your normal routine as possible.
- Those who have been faced with life-threatening situations recommended the following strategies:
  - Quickly recognize, acknowledge, and accept the reality of the situation.
  - Make a plan for dealing with feelings of being overwhelmed or overly distressed. Preparation can make you feel more in control if these feelings arise and help you move through them quickly.
  - Combat unhelpful emotions by using distraction or staying busy---both mentally and physically.

- Avoid impulsive behavior.
- Get organized.
- Increase positive coping behaviors that have worked in the past.
- Shift negative self-statements to statements that allow you to function with less distress. Try changing "this is a terrible time" to "this is a terrible time, but I can get through this."
- Rather than getting discouraged, focus on what you can accomplish or control.
- Seek out mentoring or information to improve your ability to make decisions and take actions when necessary.
- Try to engage in the situation as a challenge to be met, which can increase your ability to act both creatively and decisively (Gonzales, 2003).

### *Remain Hopeful*

- Consider the stressful situation in a broader context and keep a long-term perspective.
- Look for opportunities to practice being more patient or kind with yourself, or to see the situation as an opportunity to learn or build strengths.
- Celebrate successes, find things to be grateful about, and take satisfaction in completing tasks, even small ones.
- Give yourself small breaks from the stress of the situation by doing something you enjoy.
- Draw upon your spirituality, those who inspire you, or your personal beliefs and values.

## Resources

- Tools to help with symptoms are available—see Resources for Survivors and the Public Following Disaster and Mass Violence on our website: https://www.ptsd.va.gov/understand/types/resources_disaster_violence.asp
- If you need help right away call 1-800-273-8255
  Press "1" if you are a Veteran.

**References**

Gonzales, G. (2003). Deep survival. Who lives, who dies, and why. True stories of miraculous endurance and sudden death. W.W. Norton & Company. New York.

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ADVANCING SCIENCE AND PROMOTING UNDERSTANDING OF TRAUMATIC STRESS

# For Providers and Community Leaders: Helping People Manage Stress Associated with the COVID-19 Virus Outbreak

When the public learns of an outbreak of an infectious disease such as COVID-19, they may experience anxiety and show signs of stress, even if the objective risk of getting sick is very low. Concerns about transmission from person to person may affect accessibility of social supports and reduce community cohesion. Although public health authorities are working to contain the spread of the virus, disease outbreaks are unpredictable. If more cases occur, members of the public may well become increasingly concerned and some may begin to panic.

This stress is normal and may be more pronounced in people with loved ones in parts of the world hardest hit by the outbreak. Healthcare providers, community and religious leaders, and government officials all have a role to play in helping people cope effectively and manage their stress in the current climate of concerns about COVID-19 transmission. They can:

- provide the public with accurate and calming information about COVID-19 risk
- help the public recognize signs of stress in themselves and their loved ones
- teach them how to relieve anxiety reactions, and
- provide them with resources so they can seek further help if necessary

## Important Key Principles

There are five key principles for healthcare providers, community leaders, and others concerned with the psychological welfare of the public to follow when providing help in situations like the COVID-19 outbreak. Keep in mind that there is room for significant local variation and innovation in ways of embodying these principles in care efforts. The principles are:

*Promote a Sense of Safety.* Infectious disease outbreaks can challenge individuals' psychological sense of safety, leaving them worried about infection and, potentially, death. All interventions that help restore a sense of relative safety can help minimize psychological consequences. In the case of COVID-19, fears can be reduced through education about the means of virus transmission, what individuals can do to protect

themselves and their loved ones, and accurate information about the likelihood of severe illness and risk of death related to the illness.

*Promote a Sense of Self- and Community-Efficacy.* Infectious diseases like COVID-19 can engender feelings of helplessness about preventing infection, managing the course of illness, and protecting one's family. Feelings of helplessness and anger may also arise if people have concerns about the government's perceived transparency and capacity to manage public health (i.e., control the spread of disease). Therefore, it is important that individuals, families, and organizations be empowered to take control of the situation to the extent possible.

Encouraging active coping that aligns with public health guidance and messaging is also important. For example, encouraging people to read COVID-19-related information from trusted sources like the Centers for Disease Control and Prevention (CDC) website is likely to increase a sense of confidence in their ability to take action. Information about using technology to safely support and share information and resources helps promote community efficacy and a sense of control in responding to the situation.

*Promote a Sense of Connectedness.* Social support is a crucial resource in dealing with all stressors. In an outbreak---where people are urged to stay away from the sick, avoid large gatherings, and may even face quarantine of themselves or their loved ones---it can be challenging to maintain. Healthcare providers can help facilitate connectedness through the use of technology, including telephone support groups, text messaging and email mutual support forums, facilitated web-based chat rooms and video calling. These methods can be especially important for people separated because of quarantine. Healthcare providers can also help people work through the anger and guilt that they may feel about staying away from loved ones in cases of quarantine.

*Promote a Sense of Calming.* Both through personal contacts and public messages, healthcare providers and community leaders can help make a stressful time feel less turbulent. Healthcare providers can promote relaxation strategies via apps, brief advice, and training programs. They can also help correct inaccurate negative beliefs about the virus. For their part, public officials should work to reassure the public and stop the spread of rumors.

*Promote a Sense of Hope.* Public communication efforts can focus on what is being done to address the outbreak, resources that are available to help those affected by the COVID-19 virus, hopeful messages related to positive aspects of the large-scale response and the time-limited nature of the outbreak, and inspirational stories of healing and transcending challenging circumstances.

## Fostering Adaptive Functioning in the Public

With these key principles in mind, leaders can take concrete steps to maximize public trust, foster social connections, support community and individual wellbeing, and promote adaptive behavior change.

Healthcare providers should

- Clearly and authoritatively convey risk and resilience messages.
- Use a flexible style of communication that is tailored to the stress level and threat level of each person.

- Be culturally competent and thoughtful of people's views, priorities, and preferences.
- Address deficits in knowledge, trust, materials, and resources as they emerge.
- Contact the PTSD Consultation Program with questions about managing stress related to COVID-19 via email at PTSDconsult@va.gov or phone: 866-948-7880.

Community leaders should

- Develop and provide materials that include evidence-informed coping tips and self-care facts.
- Direct people to resources---websites, social media, news outlets---that provide authoritative information.
- Engender in the public a sense of safety and control.
- Increase the likelihood that communities and individuals will be able to create their own maps for navigating through the situation by empowering self-efficacy.
- Disseminate information that promotes social connectedness, calming---rather than fear---and feelings of safety and hope.
- Provide guidance about building resilience, including tips for increasing social support, maintaining optimism, setting goals, achieving emotional and social balance, and employing multiple types of problem-solving and coping.
- Incorporate hospice and faith communities in community response plans.
- Identify individuals at risk and facilitate access to appropriate mental health services.

**References**

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Gonzales, G. (2003). Deep survival. Who lives, who dies, and why. True stories of miraculous endurance and sudden death. W.W. Norton & Company. New York.

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# Appendix C

Updated Guidelines for
Respiratory - Asthma/COPD
Protocol (3-11) During
COVID-19 Pandemic

**SECTION:** **Airway and Respiratory**

**GUIDELINE TITLE:** Asthma/COPD during COVID-19 crisis

**REVISED:** 04/2020

Section 3-11

**OVERVIEW:**
For use on patients during COVID-19 crisis

Respiratory distress or dyspnea is one of the most common medical complaints witnessed in pre-hospital medicine. Most patients describe it as a sensation of shortness of breath or a feeling of "air hunger" accompanied by labored breathing. Dyspnea may be caused by pulmonary or cardiac disease or by any mechanism that causes hypoxia. It may be mild, manifesting only on exertion, or severe, occurring at rest. The most common causes of non-cardiac dyspnea in the pre-hospital environment involve asthma, chronic obstructive pulmonary disease (COPD), pneumonia, and bronchitis. The wheezing patient may present in different ways, some may not even complain of wheezing, but rather just with shortness of breath, cough, or chest tightness. Wheezing patients are often apprehensive and distressed and, at times, so severe that they may not be able to speak in complete sentences. Oxygenation may be compromised to the point that there is a decrease in the patient's level of consciousness. These signs are clues that the patient needs immediate and aggressive therapy. Treatment is aimed at maintaining the patient's $SpO_2$ to >90%.

Remember, **not all wheezing is from asthma**.

| HPI | Signs and Symptoms | Considerations |
|---|---|---|
| • Asthma, COPD, chronic bronchitis, emphysema, congestive heart failure<br>• Home treatment (oxygen, inhaler, nebulizer)<br>• Medications (theophyline, steroids, bronchodilators)<br>• Toxic exposure, smoke inhalation | • Shortness of breath<br>• Purse lip respirations<br>• Decreased ability to speak<br>• Increased respiratory rate and effort<br>• Use of accessory muscles<br>• Tripoding<br>• Wheezing, rhonchi, rales<br>• Fever, cough<br>• Tachycardia<br>• Hypoxia may be early indication of COVID infection | • Asthma<br>• Anaphylaxis<br>• Aspiration<br>• COPD (emphysema, bronchitis)<br>• Pleural effusion<br>• Pulmonary embolism<br>• Pneumothorax<br>• Cardiac (MI, HF)<br>• Pericardial Tamponade<br>• Upper respiratory infection<br>• Hyperventilation, anxiety<br>• Inhaled toxins |

| | A | B | EN | I | P |
|---|---|---|---|---|---|
| **1.** Perform general patient management . | • | • | • | • | • |
| **2.** Support life-threatening problems associated with airway, breathing, and circulation. | • | • | • | • | • |

| | A | B | EN | I | P |
|---|---|---|---|---|---|
| **3.** Administer oxygen to maintain $SPO_2$ 94-99%. Support respirations as necessary with a BVM. | • | • | • | • | • |
| **4.** Determine risk for COVID-19 infection. If suspicion, go to COVID asthma/COPD guideline (See guideline below). Risk factors include:<br>**a.** Asthma or COPD preceded by upper respiratory infection (fever, cough, congestion, runny nose)<br>**b.** Exposure to known or suspected COVID-19 case<br>**c.** Travel past 21 days<br>d. Documented or suspected community spread | • | • | • | • | • |
| **5.** Monitor pulse oximetry and capnography, if available. | | • | • | • | • |
| **6.** If in critical respiratory distress, provide BVM ventilation with patient's spontaneous efforts. If patient becomes unresponsive, perform BVM ventilation with an airway adjunct. If BVM ventilation is inadequate, secure airway with a definitive airway (supraglottic) or ENDOTRACHEAL TUBE [Level I and P only]. | | • | • | • | • |
| **7.** Administer BRONCHODILATOR METERED DOSE INHALER (MDI) 4-8 puffs every 20 minutes<br><br>OR<br><br>Albuterol 2.5 to 5.0 mg and Ipratoprium 0.25 to 0.5 mg via small volume nebulizer (2.5 mg albuterol and 0.25 mg Ipratopium if pt <10 kg). Repeat Albuterol and Ipratoprium in 5 to 10 minutes as needed. | | • | • | • | • |
| **8.** In the asthmatic patient, for severe respiratory distress that is non-responsive to standard medications, consider administration of Magnesium Sulfate 40 mg/kg IV over 5 to 10 minutes (max dose of 2 grams). | | | • | • | • |
| **9.** Establish venous access as needed. If greater than 1 year of age, administer Dexamethasone 0.6 mg/kg IV/IM/PO to max dose of 10 mg. In adults, administer dexamethasone 10 mg IV/IM/PO | | | • | • | • |
| **10.** Administer CPAP with 5 cm $H_20$ PEEP or BiPAP (9/5 cm $H_20$) for moderate to severe dyspnea. Titrate to effect | | • | • | • | • |
| **11.** Place on cardiac monitor and obtain 12 lead ECG per | | | | • | • |

| | A | B | EN | I | P |
|---|---|---|---|---|---|
| assessment. | | | | | |
| **12.** Transport and perform ongoing assessment as indicated. Stop all nebulized treatments during transfer into hospital. | | | | • | • |

| **For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread.** | A | B | EN | I | P |
|---|---|---|---|---|---|
| 1. **Wear appropriate PPE** and perform general patient management . | • | • | • | • | • |
| 2. Support life-threatening problems associated with airway, breathing, and circulation. | • | • | • | • | • |
| 3. Administer oxygen to maintain $SPO_2$ 94-99%. Support respirations as necessary with a BVM. If on oxygen via mask, place surgical mask over oxygen mask | • | • | • | • | • |
| 4. Place patient in a position of comfort, typically sitting upright. | • | • | • | • | • |
| 5. Monitor pulse oximetry and capnography, if available. | | • | • | • | • |
| 6. If available, administer Albuterol METERED DOSE INHALER 4-8 puffs every 20 minutes(MDI). No nebulized treatments. | | • | • | • | • |
| 7. Avoid nebulized treatments. CPAP, and BiPAP should be used as a treatment of last resort (ideally with HEPA filter in place) | | • | • | • | • |
| 8. If non-responsive to albuterol MDI or if not available, consider administration of<br>a. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.15 mg IM in patients less than 15 years of age.<br>b. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.15 mg IM for patients with history of coronary artery disease.<br>c. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.3mg IM for patients 15 years and older. | | | • | • | • |
| 7. If respiratory failure, provide BVM ventilation with patient's spontaneous efforts. If patient becomes | | • | • | • | • |

| For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread. | A | B | EN | I | P |
|---|---|---|---|---|---|
| unresponsive, perform BVM ventilation with an airway adjunct. If BVM ventilation is inadequate, secure airway with a definitive airway (supraglottic) or endotracheal intubation [Level I and P only]. Ideally, HEPA filter should be used. *Video assisted intubation preferred over direct laryngoscopy.* | | | | | |
| 8. In the asthmatic patient, for severe respiratory distress that is non-responsive to standard medications, consider administration of Magnesium Sulfate 40 mg/kg IV over 5 to 10 minutes (max dose of 2 grams). | | | | • | • |
| | | | | | |
| 9. Place on cardiac monitor and obtain 12 lead ECG per assessment. | | | | • | • |
| 10. Transport and perform ongoing assessment as indicated. Stop all nebulized treatments during transfer into hospital. | | • | • | • | • |

**PEARLS:**

1. Status asthmaticus is defined as a severe prolonged asthma attack non-responsive to therapy.
2. A silent chest in respiratory distress is a pre-respiratory arrest sign.
3. Magnesium Sulfate and Epinephrine should only be used for patents in severe, non-responsive distress that is refractory to initial treatments.
4. Patients with COPD, emphysema, and chronic bronchitis usually have a lowered baseline level of pulmonary function. These patients often have a history of chronic cough, sputum production, and dyspnea on exertion.
5. The classic presentation of a patient with emphysema is the appearance of the “pink puffer,” with rapid, shallow breathing through pursed lips, with a thin body habitus, a barrel chest, and the use of accessory muscles with respirations.
6. The classic presentation of a patient with bronchitis is the appearance of the “blue bloater”, with slow, deep, and labored breathing, a overweight body habitus, and, at times, cyanotic.

# Guidelines for steroid administration during COVID-19

**(Added 4/24/2020)**

## Adults

During COVID-19, administration of steroids is restricted only to adult patients with the following criteria:

1. Past history of COPD and/or Asthma
2. Presents with stridor and/or wheezing
3. No suspicion of COVID-19:
    a. Afebrile
    b. No upper respiratory infection symptoms (cough, congestion), preceding exacerbation

## Pediatrics

During COVID-19, there are no restrictions with the administration of steroids in pediatric patients. Continue per protocol.

# Appendix D

## Updated Guidelines for Cardiac Arrest Protocol (2-6)/(2-7) During COVID-19 Pandemic

The following guidelines are to be considered in **all** cardiac arrest patients.

The intention is to protect EMS providers, especially in situations where history or COVID-19 status is unknown.

The guidelines adhere to AHA recommendations.

**SECTION:**

Section 2

**GUIDELINE TITLE:** Cardiac arrest management during COVID-19 crisis

**REVISED:** 03/2020

**OVERVIEW:**
Cardiac arrest can be caused by ventricular fibrillation (VF), pulseless ventricular tachycardia (VT), pulseless electric activity (PEA), and asystole. VF represents disorganized electric activity, whereas pulseless VT represents organized electric activity of the ventricular myocardium. Neither of these rhythms generates significant forward blood flow. PEA encompasses a heterogeneous group of organized electric rhythms that are associated with either absence of mechanical ventricular activity or mechanical ventricular activity that is insufficient to generate a clinically detectable pulse. Asystole (perhaps better described as ventricular asystole) represents absence of detectable ventricular electric activity with or without atrial electric activity. The foundation of successful ACLS is high quality CPR, and, for VF/pulseless VT, attempted defibrillation within minutes of collapse. For victims of witnessed VF arrest, early CPR and rapid defibrillation can significantly increase the chance for survival to hospital discharge.

**Protocol Modifications**

Cardiac Arrest

1) Providers not actively engaged in care should maintain a 6 foot distance from the patient's head. Keep equipment 6 ft away or greater until needed.
2) For the initial phase of working the arrest, place a nonrebreather mask with high-flow O2 on the patient, ensure an adequate seal, and a place a surgical mask over the exhalation ports of the NRB. This will require close monitoring of the airway for vomiting or pooling secretions.
3) If airway management is indicated, it should be performed by the most experienced provider available.
4) Utilize the airway that minimizes exposure time and proximity to the provider. The order of preference is:
    a. Supraglottic airway (eg King, iGEL)
    b. ETT with video laryngoscopy
    c. ETT with direct laryngoscopy
5) If available, place HEPA filter on airway device.

6) **DO NOT** transport cardiac arrest patients unless: **(Added 4/15/2020)**
    a. There is a return of spontaneous circulation (ROSC).
    b. The scene is unsafe or not secure (public place).
7) A cease resuscitation order must be obtained prior to the termination of resuscitation efforts. **(Added 4/15/2020)**

# CARDIAC ARREST INTERIM GUIDANCE 4.23.2020

**Scene Entry:**
- □ 3 Personnel
- □ Hot Zone PPE

DNR?
- Yes → No Resuscitation Attempt
- No → Begin **Hands-Only CPR**

Attach Pads/ Analyze Rhythm
- Asystole/PEA → **Continue CPR**
- VF/pVT → **Defibrillate and Continue CPR**

**Pause** Compressions for **SGA** insertion with* **In-Line Filter** and **Capnography**

**Resume CPR** or deploy **Mechanical CPR Device**

**IV/IO** Access

**CPR** for 2 minutes

Pulse Check, Analyze Rhythm
- VF/pVT → **Defibrillate and Continue CPR for 2 minutes** → Administer **Epi** q 3-5/mins → Administer **Amiodarone**
- ROSC or 3 Rounds ACLS → ROSC
- Asystole/PEA → **Continue CPR for 2 min** → Administer **Epi** q 3-5/mins → **Treat Reversible Causes**

ROSC
- No → Contact **Medical Control** for Cease Resuscitation *or* Further Orders
- Yes → **Post-ROSC** Care x 5 Min → **Transport** and **notify receiving** facility early especially if COVID +

**Equipment Needed:**
- □ Surgical Mask
- □ In-line Filters *HEPA if available
- □ Oxygen/NRB
- □ Supraglottic Airways
- □ Suction
- □ BVM
- □ Mechanical CPR Device
- □ Cardiac Monitor
- □ IV/IO equipment
- □ Drug Box
- □ Cell Phone
- □ MDC
- □ Biohazard Bags
- □ Sharps Container

**Considerations**
- □ Public Place
- □ Unsafe Scene
- □ Family Care
- □ No ECMO

**Medical Control:**
- □ Begin call with 3rd round of meds
- □ Provide HPI and summary of care
- □ Have MC on phone prior to final pulse check

Providers may use their clinical discretion in extenuating circumstances