

COVID-19 Strategies for Emergency Medical Services Surge



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Under the Governor's Executive Orders related to COVID-19, The Public Health Director, in consultation with the Public Health Medical Advisory Group (MAG), has been authorized to direct Emergency Medical Systems (EMS) and other health partners to plan for, and deploy strategies to manage surge during the COVID-19 Pandemic. This document was developed by an Oregon Health Authority (OHA) committee of experts chaired by the State EMS Medical Director. This guidance may be of value to individual agencies, counties or regions experiencing a surge even when the whole state is not in crisis. Including, for example, a rural, geographically isolated EMS agency, which may experience a severe staffing shortage due to illness or quarantine after an exposure.

The document does not contain legal requirements but rather set out best practices gleaned from local, national and international experiences during disasters. This guidance is likely to evolve as we learn together.

We know that each EMS systems is unique and that what works for one may not work for another. This guidance is neither exhaustive nor required. Regions may benefit from different strategies in different situations, and should customize within the context of local Ambulance Service Areas (ASA), medical surge, and disaster plans and consider area culture, resources, strengths and limitations.

Strategies in this document are presented to take into account the extent of healthcare surge, resources available and the stage of EMS response. Emergency response is complex. Clearly, the strategies outlined in this guidance will not come into play in every situation, nor in a predictable sequence. Medical surge may wax and wane, and recommendations may overlap necessitating clear triggers to implement or retire some strategies.

On page 3 of this document you will find a matrix that breaks down elements of an EMS response for conventional, contingent, and crisis care situations. Each element of this matrix represents an individual strategy that links to detailed recommendations in the document like a table of contents.

Non-Discrimination in Health Care

Regardless of the extent of any emergency decisions to respond, transport or provide care may not be based on factors such as race, ethnicity, disability, ability to pay or any other factors that are protected under federal or state laws or regulations. **Perceived social worth is not an ethically defensible criteria for changing a treatment option.** Health care disparities exist across the U.S. and systemic issues around race, class and access continue in our healthcare system. A long history of health care disparities, systemic racial bias and socio-economic status limit access to healthcare across the U.S. A. It is important to acknowledge the potential for bias in decision making and that people of color, tribes and people with disabilities have been and are impacted by health inequities and continue to be disproportionately impacted during this COVID-19 pandemic

Search by category

	Conventional	Contingent	Crisis
Dispatch	Implement EIDS For medical call	Implement EIDS for all calls	Implement EIDS for all calls
		Implement pandemic card	Implement pandemic card
		Medical triage at PSAP	Medical triage at PSAP
		Alternative staffing at PSAP	Alternative staffing at PSAP
Response	Per ASA plan	Enhanced triage at scene	
		Deploy non-transport vehicle for patient assessment	
		Extended response times to certain calls	
		No response to certain calls	
		Increase capacity Additional units	Extended response to all calls
		Alternate response within jurisdiction	
		Closest unit regardless of jurisdiction	
Transport & Destination	Per standing orders	Transport to alternate destination	Batch transports
			Non-ambulance transports
	Specialty hospital or hospital of choice	Limit patient hospital destination choice	Closest hospital +/- transfer for specialty care
Staffing & Equipment		Alternate staffing & equipment	Non-EMS personnel staffing
Level of Care	Per ASA Plan	Modified per MD	Limited as staff and equipment allow
PPE	Per current OHA guidelines	Strategies to increase availability	Strategies for alternate PPE
Regulation	Normal regulatory structure	Modify regulations: Waivers & emergency rules	Suspend enforcement of regulations

Dispatch — Emerging Infectious Diseases Screening (EDIS) Guidance — Medical

The following strategies are intended to be used by PSAP call centers if widespread community transmission of COVID-19 has occurred to identify calls that may pose a risk to first responders.

1. PSAPs should implement an EIDS, or screen for fever, cough or difficulty breathing for the following Medical Priority Dispatch System (MPDS) or equivalent cards. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR) are indicated.

2.

MPDS or equivalent card number	
6	Breathing Problems
26	Sick Person
0	Medical directors' discretion

3. PSAPs may screen all callers for any of the following symptoms: fever, cough, difficulty breathing.

a. Ask the following questions:

- i. Does the person have fever or symptoms of lower respiratory infection, such as cough or shortness of breath? OR
- ii. Is patient located at a long-term care facility flagged by local public health authority (LPHA) as having an active COVID-19 outbreak?

4. **If the patient meets the above criteria, then PSAPs should:**

- a. Provide medical care per protocol.
- b. Alert responding agencies of the possibility of a respiratory pathogen as soon as possible.
- c. Follow LPHA policies for reporting and follow up of health care workers with contact to suspected cases.
- d. **For ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry [CDC Quarantine Station Contact List](#) for planning guidance**

5. If they do not meet criteria, discontinue questioning and follow appropriate case entry instructions.

6. If call volumes increase to the point that screening interferes with the timely processing of calls, consider suspending EIDS screening.

[Click here to search by category](#)

Dispatch — EIDS Guidance-All

The following strategies are intended to be used by PSAP call centers if widespread community transmission of COVID-19 has occurred, to identify calls that may pose a risk to first responders.

1. PSAPs should implement an EIDS or screen for fever, cough or difficulty breathing for ALL calls, when feasible, if local triggers determined by the PSAP director have been met. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR) are indicated.
 - a. For ALL calls (police, fire, and EMS) ask the following questions:
 - i. Does the person have fever or symptoms of lower respiratory infection, such as fever, cough or shortness of breath? OR
 - ii. Has the person had recent close contact with someone with SARS-CoV-2 infection? OR
 - iii. Is the patient located at a long-term care facility flagged by local public health authority as having an active COVID-19 outbreak?
2. **If the patient meets the above criteria, then PSAPs should:**
 - a. Provide medical care per protocol.
 - b. Alert responding agencies of the possibility of a respiratory pathogen as soon as possible.
 - c. Follow LPHA policies for reporting and follow up of health care workers with contact to suspected cases.
 - d. **For ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry [CDC Quarantine Station Contact List](#) for planning guidance**
3. If the patient does not meet criteria, discontinue questioning and follow appropriate case entry instructions.
4. If call volumes increase to the point that screening is interfering with the timely processing of calls, consider suspending EIDS screening.

Pandemic card: This provides strategies on how to implement pandemic screening for PSAP's. It is meant to be used for dispatch systems that do not provide a pandemic card.

1. Implement new All Caller Interrogation (ACI) which now includes EVERY call:
 - a. What is the address or location of the problem?
 - b. About how old is the patient?
 - c. Is the patient male or female?
 - d. Is the patient conscious?
 - e. Is the patient breathing normally?
 - f. **(NO NO GO: Patient conscious = NO, Patient breathing normally = NO, start CPR = GO!)**
 - g. What is the problem?
 - h. What is the phone number you're calling from?

NOTE: Ask questions, i, j, & k BEFORE going to the appropriate Chief Complaint Card.

- i. Does the person have fever or symptoms of lower respiratory infection, such as cough or shortness of breath?
 - j. Has the patient been in contact with anyone with known COVID-19?
 - k. Is patient located at a long-term care facility flagged by local public health authority as having an active COVID-19 outbreak?
2. **If Yes to i., j., or k., give appropriate pre-arrival instruction (PAIs) COVID-19 Pandemic Vital Points Card**
3. If the patient does not meet criteria in #2 above, THEN proceed to the Chief Complaint card.
4. PAIs are:
 - a. Advise the patient to remain where they are.
 - b. Advise the patient to separate from other persons, if possible.
 - c. Advise the caller (if not the patient) to stay at least six (6) feet away from the patient until responders arrive.
 - d. Have all others who have been in contact with patient remain where they are, provided it is at least six (6) feet away.

Implementation

Responder Awareness Police & Fire (PI/P2/Fire) — On all Priority 1 and Priority 2 Police calls AND Fire calls (PA-Public Assist, etc.), ask the same Emergency Medical Dispatch (EMD) COVID-19 questions (1.i, j, and k, above). A supervisor or lead staff should be in contact with each of you, provide you the training outline, and answer any questions you may have regarding this new temporary call taking process for those types of calls.

CAD documentation and broadcasting — Make sure that for any potential COVID-19 patient, you broadcast “USE UNIVERSAL PRECAUTIONS” over the radio.

Documentation: On medical calls, attempt to get a name and phone number because the responding agency may have additional questions for the caller and wish to contact them directly, particularly if there is a concern of COVID-19.

What is the best way to document these calls now that you are required to ask these additional questions on medical/police/fire calls? After reviewing multiple calls, here are some examples. Again, this is important because you are helping responders see this information from the CAD entry on their mobile data computers. This helps them plan and prepare for how they want to handle the situation, and to properly identify appropriate Personal Protective Equipment (PPE) for the call. This includes police, fire and EMS agencies

5. **Example 1: Positive or Yes Answers -**

- a. ****COVID-19 patients at this facility****
- b. ****Both RP and son have been fighting a low-grade fever, diarrhea and sore throats****
- c. ****RP has been exposed to COVID-19****
- d. ****Male in parking lot require medical; thinks it might be COVID-19 related****
- e. ****Patient wheezing – No to other COVID-19 questions asked****

6. **Example 2: Negative or No Answers -**

- a. ****They tested RP for COVID-19 on Monday- it was Negative, No contact, No travel****
- b. ****No to ALL COVID-19 questions****
- c. ****No to all screening questions – COVID-19****
- d. ****Negative fever, Negative travel, Negative COVID-19 contact ****
- e. ****No to COVID questions****

7. **Example 3: When it may be difficult to get these questions answered effectively:**

- a. 2nd hand or 3rd party caller, not at the location - (be sure to get premise contact and phone number if we need to call)
- b. In progress or rapidly progressing police calls (1 & 2's) - focus on safety admonishments first, but ASAP, we need to tell the caller you have priority responder safety questions to ask regarding COVID-19. Document the responses in the call and then go right back to appropriate call taking questions as you would do normally.

PSAP Pandemic Card Implementation Matrix

	LEVEL 1	LEVEL 2	LEVEL 3
PSAP	<p>Ask additional screening questions and document in CAD call. (EDIS card)</p> <p>Advise responding units to “Use Universal Precautions” if answers to the screening questions are “yes- positive”.</p>	<p>Altered dispatch plan</p> <ul style="list-style-type: none"> • Some calls will not get a response to the scene. • Make possible connection to alternate resources. • Referred caller to telemedical resources or a clinician in PSAP • Offer other services available. <p>Fire Liaison on site at PSAP</p> <ul style="list-style-type: none"> • Make calls to patients not receiving services. • Make calls to patients receiving delayed response. • Help with resource allocation (move up of transport units). 	<p>Further altered dispatch plan</p> <ul style="list-style-type: none"> • Some calls will not get a response to the scene. • Make possible connection to alternate resources • Referred caller to telemedical resources or a clinician in PSAP. • Offer other services available. <p>Fire Liaison on site at PSAP</p> <ul style="list-style-type: none"> • Make calls to patients not receiving services. • Make calls to patients receiving delayed response. • Help with resource allocation (move up of transport units).
Fire Agency	No Change	<p>Fire only to Code 1 calls (will ask for transport unit as needed)</p> <p>No Response or Delayed response to Fire Only Code 1 call (e.g.- “Assault Exposure, Fall, Sick/Unknown, Suspected Death, Toxic Exposure, Trauma/ Eye”)</p>	<p>No response or Delayed response to all Code 1 calls.</p> <p>Fire only response to certain calls (TBD) (unit will request transport unit as needed)</p> <p>Fire response code 3 to (TBD) calls, with transport unit.</p>
Transport-Ambulance and Medics	No Change	No response to Code 1 calls unless Fire Agency requests dispatch	<p>No response to (TBD) calls unless requested by unit on scene</p> <p>Respond with Fire units on (TBD) Code 3 calls</p>

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Dispatch — Medical triage at PSAP Guidance

The following strategies are intended to be used by PSAP call centers if widespread community transmission of COVID-19 has occurred, to identify calls that may be transferred to a medical advice line for further triage under crisis care guidelines.

ADULT PATIENTS > 15y/o

Implementation of this guideline is solely at the discretion of the PSAP's medical director. If at any time the person performing call triage feels there is a life-threatening emergency, dispatch EMS and stop further expanded questioning regarding infectious disease screening.

Some examples of this type of emergency may be (but not limited to):

- Severe difficulty breathing (struggling for breath, unable to speak or cry, severe retractions, wheezing, gasping)
 - Caller states patient is blue, not responding or in distress, bluish lips or tongue
 - Person performing triage feels life threatening emergency is unfolding for any reason
-

Otherwise, a call received by call center or 911 dispatch should start with normal case entry questions.

If a caller voices a complaint of chest pain, abdominal pain, or any symptoms other than a fever, cough, respiratory or infectious disease signs and symptoms, continue as per normal protocol.

If the caller believes they have influenza, COVID-19, or any other respiratory infection, continue with protocol below. Common respiratory symptoms include fever, cough, headache and muscle aches. Chest pain is *not* a common symptom.

If the patient with infectious respiratory symptoms has any of the following symptoms, continue with normal call processing:

- Shortness of breath/difficulty breathing
- Recurrent vomiting/unable to keep fluids down
- Chest pain
- Unable to ambulate/profound weakness

If the patient has any of the following medical conditions, continue with normal call processing:

- Asthma, COPD, Emphysema, CHF
- Immunosuppression (HIV, current chemotherapy, other immunosuppressive drugs)

If the patient with infectious respiratory symptoms meets any of the following criteria, continue with normal call processing:

- Over 65 years of age
- Lives alone, with no family available to provide assistance or transportation.
- Other exclusions defined by the medical director

If the patient is not included in a high-risk category (as listed above) and there is no other reason to send an ambulance per other normal protocols (e.g., patient has chest pain) then:

- Offer to connect them to the **local clinical referral line** for further help and information.
- Offer the option of recalling 911 dispatch or call center if the condition worsens or changes.

Response — Enhanced Triage Guidance

The following strategies are intended to be used by EMS if widespread community transmission of COVID-19 has occurred, to mitigate the risk of EMS exposure.

ALL PATIENTS

Nothing in this guideline should be interpreted to override the EMS professional's judgment as to the acuity of the patient and their need for treatment. Implementation of this guideline is completely at the discretion of EMS medical directors, who must provide specific guidance.

For call dispatched as:

MPDS or equivalent card number	
6	Breathing Problems
26	Sick Person
0	Medical directors' discretion

Specific Changes: Initial Patient Encounter

1. All patients are initially assessed from distance of six (6) feet to reduce potential for exposure of personnel to COVID-19 or other infectious illness. There will be situations in which this option will be automatically excluded by the acuity of the call.
2. Patients with potential infection will be asked to apply a surgical mask that will be supplied by EMS from a distance of six (6) feet.
3. Bystanders and family will be asked to maintain the minimum, same separation from personnel.
4. If a remote or virtual method of providing the initial interview is available, such as telemedicine or videoconferencing, it is acceptable for conducting the initial triage.

Approach to the patient

1. When circumstances permit, only one provider will directly assess the patient.
2. If circumstances allow, interview the patient outside the residence in open air.
3. The minimal expected amount of equipment will be brought to the patient's side, however, SpO2 is required.
4. The interview should be done from the maximal distance that still allows for clear communication.
5. Avoid standing directly in front of the patient.

[Click here to search by category](#)

Patient Assessment

1. Temperature becomes a crucial first vital sign if positive, but does not exclude infection if negative. If possible, use non-oral thermometers.
2. Respiratory rate and SpO₂ must be accurately recorded.
3. The use of stethoscope will be discouraged as it brings the provider closer to the patient and is a source of infection spread.
4. Recording of the BP is best done by automatic device.
5. Avoid asking the patient to open mouth.
6. Auscultation of breath sounds will not routinely be done. Asking the patient to take a deep breath may stimulate cough.
7. Movement to the ambulance: allow the patient to self-ambulate, if appropriate.

EMS Actions

Assess patient for the following:

- Patient has symptoms of lower respiratory infection, such as fever, cough, or shortness of breath, OR
- Patient has had contact with someone with known COVID-19, OR
- Call location is a long-term care facility known to have COVID-19 cases.

If the patient meets any of the above criteria, then:

1. Involve the fewest EMS personnel required to minimize possible exposures.
2. Ensure that the patient is masked.
3. Provide medical care per protocol.
4. Ensure that personnel use contact, droplet, AND airborne precautions, as follows:
 - a. Wear a single pair of disposable patient examination gloves
 - b. Wear disposable isolation gown. If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, and care activities where splashes and sprays are anticipated.
 - c. Use respiratory protection (i.e., N-95 or higher-level respirator). If running low on respirators, facemasks are an acceptable alternative. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols.*
 - d. Wear eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face).
5. Use caution with aerosol-generating procedures and ventilate ambulance if possible.
6. Notify the receiving hospital (according to local protocols) of potential infection as soon as possible.
7. Disinfect using EPA registered [Disinfectants for Use Against SARS-CoV-2](#).

Transport — Treat and not Transport/Transport to Alternative Destination Guidance

The following strategies are intended to be used by EMS if widespread community transmission of COVID-19 has occurred, to identify patients that may be eligible for treatment without transport, or transport to an alternate care site for patients with suspected COVID-19 under crisis care guidelines.

ADULT PATIENTS > 15y/o

Nothing in this guide should be interpreted to override the EMS professional's judgment as to the acuity of patients and their need for treatment and transport. Implementation of this guideline is completely at the discretion of EMS medical directors, who must provide specific standing orders to implement a treatment without transport, or treatment and transport to alternative destination pathway.

For call dispatched as:

MPDS or equivalent card number	
6	Breathing Problems
26	Sick Person
0	Medical directors' discretion

If the patient has any of the following symptoms other than fever, cough, respiratory or infectious disease symptoms, continue as per normal protocol.

- Chest pain, other than mild with coughing
- Shortness of breath with activity
- Syncope
- Diaphoresis
- Cyanosis
- Respiratory Distress
- Recurrent vomiting/unable to keep fluids down
- Inability to ambulate/profound weakness
- Other exclusions defined by the medical director

If the patient with infectious respiratory symptoms has any of the following findings, continue as per normal protocol:

- >65 y/o
- Respiratory Rate <8 or >20
- O2 Saturation < 94%
- Heart Rate >100 bpm
- Systolic BP <100
- GCS < 15

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The patient meets criteria for EMS non-transport if:

- The patient has a support system.
- The patient is competent.
- The patient consents to not being transported.
- The EMS provider coordinates follow-up care with local public health authorities, primary care providers, community paramedicine programs, or other mechanisms.

Patients who meet dispatch criteria, have none of the symptoms or findings requiring adherence to normal protocol, but do not meet criteria for non-transport, may be transported to an alternate destination* for the care of COVID-19 patients.

Patients with symptoms or findings requiring adherence to normal protocol should be transported to hospital per normal protocol.

*Under CMS blanket waiver, EMS can transport to hospital-licensed alternate care sites as well as additional non-licensed sites, including urgent care facilities.

Transport to Alternate Care Sites

The purpose of this section is to provide strategies for EMS systems when making modifications to system plans to address the demand on healthcare resources and the expanded healthcare delivery system during the evolving COVID-19 pandemic. The EMS system must have flexibility to adapt to the changes being made in the healthcare delivery model. When the healthcare system has expanded to include the establishment of Alternate Care Sites (ACS) and COVID-19 Isolation Facilities (CIF), EMS systems may be called to transport patients from these sites to a higher level of care. As the system becomes more taxed, EMS may need to have the flexibility to triage the patient and transport to a site other than a traditional hospital emergency department.

Definitions:

Alternate Care Sites (ACS)

Provide round the clock care for patients too ill to recover at home, but who are not ill enough to require acute, in-patient care. They are typically staffed by providers equivalent to urgent care/hospitals. An ACS has nursing staff capable of accepting patients requiring in-patient ward care but patients who are not anticipated to require intensive care, acute interventions (Stroke/STEMI), or resuscitation.

COVID Isolation Facilities (CIF)

Are facilities where people who have mild COVID-19-related illness, or who test positive for the COVID-19 virus but remain asymptomatic, are housed to decrease potential exposures to household and community contacts. The level of care is focused on providing for basic needs (comfort, hydration, food, laundry) and symptom relief.

Deployment of non-transport vehicle for patient assessment

- When the transporting ambulance system is unable to keep up with volume of 911 calls, non-transport vehicles can be dispatched without an assigned transporting unit for patient assessment and initial treatment, if necessary.
- Non-transporting vehicles could be fire department assets, ambulance supervisor vehicles, or specialized teams assembled for a particular event.
- When there is a known temporary surge in a particular category of 911 call types (i.e. influenza-like illness) specialized rapid assessment teams could respond without a transporting unit assigned to assess the needs of the patient and begin treatment, if needed.
- Non-transport team vehicles must be stocked with, at a minimum, all Basic Life Support (BLS) assessment and treatment equipment required by the State of Oregon, with the exception of transport equipment.
- Specialized rapid assessment team vehicles must be staffed with at least one paramedic and must carry all BLS and ALS assessment and treatment equipment required by the State of Oregon, with the exception of transport equipment.
- Specialized rapid assessment teams may use the Treat and not [Transport/Transport to Alternative destination Guidance to determine patient disposition](#).

Increase Ambulance Response Capacity

Conventional: All ambulances are committed to calls, surge units not activated

- Deployment of non-transport vehicle for patient assessment on Code 1 or Alpha calls
- No transports of Code 1 or Alpha calls between healthcare facilities
- Activate additional swing and surge units
- Closest fire suppression company only on unknown if injuries motor vehicle accident (MVA)

Contingent: All ambulances are committed to calls including surge units

- Battalion Commander (BC) to respond to dispatch center
- Closest fire suppression company only to Alpha and Bravo calls for patient evaluation
- Closest fire suppression company only multiple accidents in the same area: have initial response triage all, as long as all are non-injury or minor injury
- Activate all additional swing and surge units
- Call mutual aid from unaffected adjacent ASAs
- Request mutual aid agencies activate all additional swing and surge units
- Request air ambulance crew to staff ambulances, if available.
- Deploy single ambulance to multiple calls that have been screened by non-transport units (batch transports).

Crisis: All ambulances committed, and may be for an extensive amount of time

- No response to Code 1 or Alpha calls
- Dispatchers should advise callers of a long delay for Alpha & Bravo level calls as no ambulances are available
- Closest fire suppression company only to Bravo, Charlie and Delta calls for evaluation, if no BLS units are available.
- Use air ambulance as needed for Delta and Echo calls if possible (mostly in rural area)
- Split providers on dual ALS ambulances
- Pair non-ambulance clinicians with EMS to expand capacity
- Start calling outlying nonadjacent ASAs for assistance as needed
- Contact Fire Defense Board chief to request conflagration and strike teams from Office of State Fire Marshal (OSFM)
- Contact county Office of Emergency Management (OEM) to request ambulance strike teams from Oregon Health Authority (OHA)
- Consider using rescue vehicles to transport if needed and/or other fire suppression companies
- Consider using Metro buses or school district buses to transport patients

Staffing & Equipment

Waiver for Staffing or Equipment OAR 333-255-0000

It may become necessary to consolidate or disperse staffing, and equipment to optimize the surge capability of an EMS system. Strategies include splitting dual ALS crews to double the amount of individual ALS units that can be deployed. This is usually done by replacing one paramedic with an Emergency Medical Technician (EMT) to double the amount of ALS units available. Further considerations include using all ambulances as BLS transports while providing ALS intercepts as necessary. Other strategies might include splitting BLS crews with one nonmedical driver and one EMT per transporting unit to increase the availability of BLS units.

Planning around contingent strategies for staffing and equipment use, and any necessary waivers to implement them, should be considered during conventional operations well in advance of situations in which they would be needed. Use this waiver when contingent, and crisis plans call for variations in staffing and equipment outside of OAR 333-255-0000.

Waivers do not have to be in place during response in the contingent, and crisis setting if waiting for them would otherwise interfere with the public good.

Complete a Request for Exemption or Variance to Oregon Administrative Rule Due to COVID-19 Emergency Response form in order to/if you would like to apply for a variance to staffing or equipment regulations.

[Request for Exemption or Variance to Oregon Administrative Rule Due to Covid-19 Emergency Response](#)

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Destination

In conventional operations, the choice of ambulance destination is usually driven by the geography of the region and specialty care availability at a hospital. This may place an undue strain on the EMS system during healthcare surge. Ambulances leaving their service area to go to a specialty hospital, or a hospital of choice, can prolong response times to time-sensitive emergencies. Strategies to keep EMS units available in their service areas in times of surge should be considered based on time and distances to specialty care centers, the capabilities of local hospitals, and the ability to transfer patients to specialty centers. Surge strategies for EMS must take local conditions under consideration and include well-defined triggers for entering contingency and crisis care standards.

The following matrix presents an outline for destination search strategies modeled on familiar time-sensitive emergencies and specialty care centers. It The matrix is only meant as a model and is not inclusive of all specialty care destinations or time-sensitive conditions. Surge measures can only be designed in conjunction with local hospitals and regional referral centers.

	Conventional	Contingent	Crisis
General	Specialty hospital or hospital of choice	Limit patient hospital destination choice	Closest hospital +/- transfer for specialty care
Trauma	<u>Physiological or anatomic:</u> highest level trauma center <u>Mechanism of action:</u> closest trauma center <u>Comorbidities</u> provider discretion	<u>Physiological or anatomic:</u> highest level trauma center <u>Mechanism of action:</u> provider discretion <u>Comorbidities</u> Closest hospital +/- transfer	<u>Physiological or anatomic:</u> closest trauma center <u>Mechanism of action:</u> Closest hospital +/- transfer <u>Comorbidities</u> Closest hospital +/- transfer
Stroke	<u>Severity and time criteria +</u> Comprehensive Stroke center <u>Severity and time criteria -</u> Primary Stroke center <u>Geographic isolation:</u> Acute Stroke ready hospital	<u>Severity and time criteria +</u> Comprehensive Stroke center <u>Severity and time criteria -</u> closest Stroke center <u>Geographic isolation:</u> Closest hospital +/- transfer	<u>Severity and time criteria +</u> closest Stroke center <u>Severity and time criteria -</u> Closest hospital +/- transfer <u>Geographic isolation:</u> Closest hospital +/- transfer
STEMI	<u>EKG+ symptom + time</u> PCI Center <u>EKG+ symptom - time</u> Fibrinolysis ready hospital <u>Post Fibrinolysis</u> Transfer to PCI Center	<u>EKG+ symptom + time</u> PCI Center <u>EKG+ symptom - time</u> Fibrinolysis ready hospital <u>Post Fibrinolysis</u> Delay transfer	<u>EKG+ symptom + time</u> Fibrinolysis ready hospital <u>EKG+ symptom - time</u> Closest hospital +/- transfer <u>Post Fibrinolysis</u> +/- transfer
OHCA	<u>+/-ROSC</u> 1st choice: PCI + Resuscitation center 2nd choice: PCI only Center 3rd choice: Closest hospital + transfer	<u>+ROSC</u> 1st choice: PCI only Center 2nd choice: Closest hospital with ICU 3rd choice: Closest hospital + Delay transfer	<u>+ROSC</u> 1st choice: Closest hospital with ICU 2nd choice: Closest hospital +/- transfer

Stroke time criteria: LKW= \leq 24hrs and CSC \leq 30min farther than PSC

STEMI time criteria: PCI \leq 30min

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PPE Use Strategies

PPE strategies for healthcare personnel can be found at:
[Interim Guidance: Use of Personal Protective Equipment in Resource-Constrained Settings](#)

This guidance is specific to PPE in the context of the COVID-19 pandemic in healthcare settings and outlines strategies for optimizing the supply of PPE when PPE resources are constrained. The guidance comprises four components while applying the hierarchy of hazard controls system:

- Engineering and administrative control measures to optimize PPE use
- Use of a tiered, sequential approach to optimize PPE supply
- Monitoring of PPE availability to guide optimal PPE use
- Provide training to healthcare personnel on PPE use

The guidance organizes specific strategies for optimizing the supply of PPE use into four tiers, with each successive tier representing increasingly resource-constrained situations. Within each tier, the strategies are further organized by three elements that can be considered: PPE type, the duration of its use, and any engineering or administrative controls specific to the PPE type (See Table 1). Generally, Tier 1 and 2 strategies align with CDC's contingency capacity strategies, while Tier 3 and 4 strategies correspond to CDC's crisis capacity strategies. Employers must provide effective protections to healthcare providers during resource-constrained situations.

For details on these conventional, contingent and crisis strategies for PPE use in resource-constrained settings, please see OHA and Oregon-[OSHA's Interim Guidance: Use of Personal Protective Equipment in Resource-Constrained Settings](#).

[Click here to search by category](#)

Changes to patient care protocols

The following strategies are offered to patient care protocols during a COVID-19 pandemic. These recommendations are based on emerging and changing best practices and offers options that could be implemented at a local level. Application of the guidance will vary by system as feasible and appropriate, depending on your system, structure, and resources availability, feasibility and appropriateness.

Contingent Care Guidance

Universal Patient Care

Refer to directions on triage and initial patient contact.

If the patient has a suspected or known COVID-19 infection, fluid administration should be minimized, unless otherwise medically indicated (e.g., abnormal vital signs, tachycardia, hypotension, significant dehydration with vomiting or diarrhea, SBP <90 or MAP <65).

Respiratory Distress

Nebulized medications should be used as a last resort. Consider other appropriate treatments first. However, a patient with severe respiratory distress and wheezing can still receive nebulized treatments. Perform treatments on scene and consider performing outside, if possible. Treatments should not be performed during transport. Consider delaying transport if you need to administer nebulizer treatments to minimize exposure of EMS personnel.

If available, use an albuterol Metered Dose Inhaler (MDI) in lieu of nebulizer treatments. If patient has own MDI, bring it with you for use en route. Four (4) puff dose of an albuterol MDI is equivalent to one (1) nebulized treatment; if available, use a spacer. If the patient has a spacer at home, bring it with you.

If MDI treatment is not sufficient, instead of nebulized treatments for asthma or wheezing, consider:

- Epinephrine
 - » Adults: 0.3mg - 0.5 mg Epi 1:1000 IM every 5 minutes, repeated once
 - » Pediatrics:
 - < 30 kg 0.15 (0.15 ml) mg IM, up to 0.3 mg, every 20 minutes for 3 doses
 - > 30 kg 0.3 (0.3 ml) mg IM, up to 0.3 mg, every 20 minutes for 3 doses
 - » Consider using lower doses (0.1 - 0.3 mg IM) for patients > 40 years old or with known coronary artery disease.
- Magnesium:
 - » Adults: 2 grams IV over 20 minutes
 - » Pediatrics: 50 mg/kg up to 2 grams IV over 20 minutes
- Terbutaline (1mg/ml)
 - » Adults: 0.25 mg subcutaneously, PRN every 20 minutes for 3 doses.
 - » Pediatrics: 0.01 mg/kg subcutaneously (MAX 0.25 per dose), PRN every 20 minutes for 3 doses.
- Dexamethasone:
 - » Adult: 10 mg IV/IM/PO
 - » Pediatrics: 0.6 mg/kg IV/IM/PO to a maximum of 10 mg

Contingent Care Guidance

If not receiving inhaled treatment and if tolerated, patient should be masked throughout transport. Maximize area ventilation during transport of these patients. As able, open doors; use exhaust fans; ensure ambulance cab and patient care areas are NOT set to recirculate air; and ensure mobile vents are angled down and toward the back of the ambulance, etc.

Bag Valve Mask (BVMs) should be equipped with Viral/HEPA filters, as available.

General Airway Protocols

The most experienced airway provider with highest level of comfort and likelihood of first-pass success should assume control of airway management in known or suspected COVID-19 patients.

The use of Supraglottic Airways (SGA) is considered a continuously aerosolizing procedure. When using a BVM, a viral/HEPA filter must be placed between the mask and the bag, if available.

NIPPV (CPAP/BiPAP)

This should be considered an aerosolizing procedure when performing advanced airway management and EMS should don appropriate PPE. Viral/HEPA filter should be used on NIPPV machines. Attempt to minimize performance of this procedure (only when needed for respiratory distress.)

Advanced Airway Management

If a patient responds to supplemental oxygen (nasal canula or non-rebreathing mask, but continues to have hypoxia, does not have severe respiratory distress and can maintain an adequate airway, consider deferring advanced airway management to the hospital and notify the Emergency Department (ED) of a potential need for airway management upon arrival.

The preferred pre-oxygenation method, for perfusing patients, is with a BVM with proper facemask-seal with viral/HEPA filter. Consider Delayed Sequence Intubation (DSI) as the preferred method of intubation if unable to achieve proper pre-oxygenation levels. If no issue with pre-oxygenation, Rapid Sequence Intubation (RSI) can be used.

In perfusing patients, do not squeeze BVM bag before intubation attempt but hold facemask with good two-handed technique with PEEP set at 5-10 cm H₂O until initiating advanced airway attempt to maximize recruitment of alveoli.

In perfusing patients with no or inadequate respiratory effort, bag patient at a standard rate.

For patients in cardiac arrest, bag patient per standard cardiac arrest protocol.

Ensure viral/HEPA filter is attached to BVM before intubation attempt, if available.

Intubation with video laryngoscopy (VL) and bougie is strongly preferred over direct laryngoscopy (DL). This is to maximize the distance from patient and limit exposure.

Depending on your local/agency volume, level of experience, comfort and first-pass success rate, endotracheal intubation can be considered preferred over SGA as this will potentially help contain airway secretions.

After intubation, make sure that you have the viral/HEPA filter in place on the BVM to attach to the tube. Inflate the cuff before bagging the patient.

Confirm tube placement using standard verification methods, including EtCO₂ waveform capnography.

[Click here to search by category](#)

Contingent Care Guidance

Narcan

If EMS personnel have the ability to administer IM/IV naloxone, this should be performed instead of administration of IN naloxone. If personnel administer IN Narcan, don appropriate PPE including gloves, mask and eye protection.

Cardiac Arrest

All cardiac arrest patients should be considered potential COVID-19 patients, and appropriate PPE and precautions should be used. CPR should not be initiated and patient care area should not be entered before appropriate PPE is donned. The first person who has donned PPE should initiate chest compressions.

EMS crews should not actively transport patients in cardiac arrest with ongoing CPR. If deemed appropriate, EMS should treat cardiac arrest on scene per ACLS protocols.

Do not pause compressions to establish an airway. If ROSC is achieved, steps should be taken post cardiac arrest to stabilize the patient for transport to ED for at least 10 minutes prior to transport, including EKG, advanced airway management, repeat vitals, establishing vascular access, ensure adequate MAP >65, etc.

Be aware that the medical examiner can test patient for COVID-19 should a termination of resuscitation be made by EMS. This request should be relayed to law enforcement if EMS clears the scene prior to medical examiner arrival.

Strategies

Cardiac Arrest

When the prehospital EMS system and emergency departments are overwhelmed and resources severely limited, changes to the level of care provided to patients in cardiac arrest can be considered by the medical director including the following in escalating order. However, these should be considered in crisis care, not during normal operations, and should be a last resort when the care system is overwhelmed and resources are severely limited:

- After addressing reversible causes, consider early termination of resuscitation for patients in cardiac arrest with initial rhythm of asystole, especially unwitnessed arrest.
- After addressing reversible causes, consider early termination of resuscitation of patients in cardiac arrest with initial rhythm of Pulseless Electrical Activity (PEA), especially unwitnessed arrest.
- Consider limiting the number of rounds of CPR performed for Vfib/Vtach (i.e., early termination of resuscitation), if a patient has not obtained Return of Spontaneous Circulation (ROSC) after standard ACLS care, including defibrillation and administration of medications.

Regulation of emergency medical services

To ensure public safety and public health, the State of Oregon regulates several aspects of the healthcare system including emergency medical services and trauma. This regulation takes the form of statutes passed by the legislature, and rules adopted by the Oregon Health Authority. Regulation applies to individual providers, ambulance agencies, and ambulance vehicles. Counties must follow state regulation as to how they make ambulance service plans to ensure efficient provision of ambulance services. Ambulance service is considered essential infrastructure in the state of Oregon. Rules may be waived or suspended under certain circumstances, such as a public health emergency. Since statutes are meant to protect the public, and not hinder entities who, in good faith, are trying to help people, they usually contain some language to allow for emergencies, and unusual situations.

Oregon Revised Statutes 682.079 give the Oregon Health Authority the power to grant exemptions or variances from certain requirements:

- The Oregon Health Authority may grant exemptions or variances from one or more of the requirements of ORS 820.330 to 820.380 or this chapter or the rules adopted under ORS 820.330 to 820.380 or this chapter to any class of vehicles if the authority finds that compliance with the requirement or requirements is inappropriate:.

If exceptions to rule might be needed to protect the public welfare, these should be identified by agencies during conventional operations with plans and triggers put in place about when to enter contingency and crisis operations. This should be coordinated with the appropriate government agency. In the case of ambulance agencies, this might include OHA or Oregon Medical Board (OMB). State regulatory agencies may choose to preemptively grant exceptions or variance in anticipation of need. Early in the pandemic (March/April) OHA did this for provider licensing, as did the OMB for scope of practice. See below for specific rules.

[OHA Emergency rule for temporary providers licensing](#)

[OMB Emergency rule for scope of practice](#)

In addition to exceptions and waivers, state regulatory agencies have discretion in the enforcement of regulations, should adherence to those regulations interfere with the public good.

As well as state statutes and rules, county and city ordinances should be considered in planning for medical surge. Issues of cross jurisdictional response, response standards, and mutual aid are key in planning for contingent and crisis standards. Implementing these steps may require coordinating with county government regarding standards of the ambulance service area plan, or other local ordinances. Implementing altered standards of care should be done in conjunction with the County EMS authority, and the local public health authority.

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Appendix 1

EMS	Emergency Medical Services
EIDS	Emerging Infectious Diseases Screening
PSAP	Public Safety Answering Point
ASA	Ambulance Service Area
MPDS	Medical Priority Dispatch System
LPHA	Local Public Health Authority
ACI	All Caller Interrogation
PAI	Pre-Arrival Instructions
APCO	Association of Public-Safety Communications Officials
EMD	Electronic Medical Dispatch
CAD	Computer Aided Dispatch
BLS	Basic Life Support
ALS	Advanced Life Support
BC	Battalion Commander
OSFM	Office of the State Fire Marshal
OEM	Office of Emergency Management
EMT	Emergency Medical Technician
OHA	Oregon Health Authority
CDC	Center for Disease Control
EUA	Emergency Use Authorization
NIOSH	The National Institute for Occupational Safety and Health
BVM	Bag Valve Mask
SGA	Super Glottic Airway
NIPPV	Non-Invasive Positive Pressure Ventilation
CPAP/BiPAP	Continuous Positive Airway Pressure
DSI	Delayed Sequence Intubation
RSI	Rapid Sequence Intubation
PEA	Pulseless Electrical Activity
ROSC	Return of Spontaneous Circulation
OMB	Oregon Medical Board
CMS	Center for Medicare Services
PPE	Personal Protective Equipment



COVID-19 Strategies for Emergency Medical Services Surge

Oregon Emergency Medical Services

Oregon
Health
Authority

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