

|  |  |
| --- | --- |
| COVID-19  The Fire Chiefs Association of Massachusetts | Companion Guide to Standard Operating Guidelines  Background information and implementation measures for Standard Operating Guidelines  Blackthorne Services Group, LLC |

Table of Contents

Introduction 2

Standard Operating Guidelines 2

Equipment and Supply Sourcing 3

Coronavirus SARS-CoV-2 (COVID-19) Background Data 4

Survival of SARS-COV-2 in the Environment 5

Testing for SARS-COV-2 6

Methods for Cleaning and Disinfecting 7

Asymptomatic Carriers and Testing for SARS-CoV-2 7

Prevention of Spread 8

Standard Operating Guidelines and companion and implementation information 11

Standard Operating Guideline: Public Safety Answering Point, Triage Questions Regarding COVID-19 12

Standard Operating Guideline: Risk-Based Guidance for Exposure Reduction 14

Standard Operating Guideline: Risk-Based Guidance for Personal Protective Equipment 17

Standard Operating Guideline: Precautionary Measures During Patient Transport 23

Standard Operating Guideline: COVID-19 Responder Decontamination 26

Standard Operating Guideline: COVID-19 Ambulance Decontamination 32

Standard Operating Guideline: COVID-19 Post Exposure Reporting and Protection 35

# Introduction

Shortly after 9/11, the nation, the public health and the emergency management community began discussing and preparing for a pandemic. Nothing stimulated this discussion and preparation, other than a book given to then President George H. W. Bush and follow on briefings from the public health community. It was forecast that the seasonal flu variant, H1N1, had the potential to become the unstoppable global pandemic to rival the 1918 Spanish Flu.

Billions of dollars in public health preparedness were expended. However, the H1N1, while severe, did not rise to the catastrophic levels forecast. Because of this, the model of public health preparedness planning began to shift, much like counterterrorism planning, to an all hazards model and capabilities. Plans with a built in expectation of a pandemic were moved to warehouses and often forgotten.

Today, we find ourselves in a true global pandemic. The system failures, once foretold of for H1N1 are proving to be real. Panic, rumor, false information, hoarding and fear are interrupting supply chains and impacting the decisions of otherwise rational people.

As always, the fire service stands at the forefront, ready or not, to do its duty and protect the American people. To do so, the fire service must adapt to the crisis, often mid-stream, where pre-planning does not conform to the developing picture. To be truly effective, it must strive to develop a “common operating picture,” defining mission, objectives and methods, such that the interoperability may continue. This allows fire fighters and the public to have the confidence brought about by consistency in information and methods.

Recognizing the importance of this consistency, the Fire Chiefs Association has taken measure to develop and distribute a series of Standard Operating Guidelines for all Massachusetts fire departments. Through adoption of these guidelines, fire departments can bring about a high degree of effectiveness, interoperability and confidence.

As data change, so too may these guidelines. By having a common starting place in their adoption, changes to shifting conditions can, again, be quickly, efficiently and consistently initiated. The outcome can only be greater safety to our fire fighter and the public.

# Standard Operating Guidelines

The designation of this guidance as Standard Operating Guidelines was deliberately used for the information provided, versus terms such as Standard Operating Procedures, for three reasons:

1. The Fire Chiefs Association of Massachusetts has no authority to issue policy and procedures to political subdivisions of Massachusetts, outside of that granted to it under the Statewide Fire Mobilization.
2. Standard Operating Procedures establish a standard of care or performance, against which “duty” can be applied.
3. The nuance and fluidity of the current situation requires the ability to adjust to unforeseen circumstance, absent the constraint of SOPs.

Standard operating Guideline set forth a baseline of method and outcomes, which in concert with knowledge and experience, provide the best opportunity for success.

# Equipment and Supply Sourcing

Among the many challenges of this pandemic, is the ability to maintain levels of personal protective equipment (PPE) and decontamination/disinfectant solutions. It is widely publicized that hospitals are running low on PPE, but little is being made of the impact of the same shortages among first responders. In some instances, work arounds are being developed and published, such as those on [www.emergencyresponsetips.com](http://www.emergencyresponsetips.com). While such work arounds may serve to stopgap equipment shortages, caution should be used in putting such work arounds in policy or directive as they themselves cite that these are not NIOSH approved, and so may create a liability.

The federal government has undertaken unprecedented measures to attempt to catch up to the supply demand. As such, both normal and emergency routes of acquisition are available. Below are several to pursue:

1. **Normal route of purchase** – Reports from vendors indicate that shipments of PPE are arriving and becoming available. Because of demand and backlog, there is a waiting list, which is generally first come-first served. However, for N-95 masks, large orders over 10,000 are being prioritized.
2. **Strategic National Stockpile (SNS**) – The SNS was first established for WMD, then modified to also support pandemic needs. These stockpiles are being deployed and the system is being used to support states’ medical supply needs. To request supplies through this system, forward them through normal disaster assistance appeals to MEMA.
3. **Regional Health and Medical Coordinating Coalition (HMCC**) for resource support. If a request cannot be fulfilled locally or within the region, the HMCC will advance the request to DPH. DPH will coordinate with our regional partners to understand and address shortages as they arise. The sponsoring organizations for the Health and Medical Coordinating Coalitions (HMCCs) function as regional coordinating and facilitating entities within the six DPH Emergency Preparedness regions throughout the Commonwealth. Attached is the form from DPH for supply request. These forms must be sent to your local regional EMS office. To determine regional capabilities, please contact your regional HMCC: Here is the contact information for each respective region EMS office.

Region 1 <https://region1hmcc.org/> 413-773-1502 [hmcc@frcog.org](mailto:hmcc@frcog.org)

Region 2 <https://archecoalition.org/> 508-408-5173 N/A

Region 3 <https://hmccreg3.org/> 978-946-8130 [dutyofficer@hmccreg3.org](mailto:dutyofficer@hmccreg3.org)

Region 4AB <https://mrpcoalition.org/> 857-239-0662 [mrpcdutyofficer@challiance.org](mailto:mrpcdutyofficer@challiance.org)

Region 4C [https://bphc.org/Pages/ default.aspx](https://bphc.org/Pages/default.aspx) 617-343-6920 [mic@bphc.org](mailto:mic@bphc.org)

Region 5 <https://www.region5hmcc.com/> 855-266-7243

1. **Massachusetts HLS-06 Contract** - <https://www.mass.gov/doc/hls06/download>. The Massachusetts HLS-06 contract is a statewide group buying contract using USA Communities. This contract provides you access to purchase through a state vendor, if your local vendor cannot meet your needs, or if you need supplies, services or materials for which you have no local vendor on contract. For further assistance in using this contract, contact Ariola Molla, 617-730-3381, [Ariola.T.Molla@mass.gov](mailto:Ariola.T.Molla@mass.gov)

# Coronavirus SARS-CoV-2 (COVID-19) Background Data

* SARS-CoV-2 is a virus classified as a coronavirus. Four of the 7 known coronaviruses most frequently cause symptoms of the common cold (229E, OC43, NL63 and HUK1). SARS-CoV emerged in Guangdong, southern China in 2002 causing an outbreak of severe acute respiratory syndrome (SARS) that resulted in more than 8000 human infections and 774 deaths in 37 countries. MERS-CoV, detected in Saudi Arabia in 2012, was the cause of Middle East respiratory syndrome (MERS) leading to 2494 laboratory-confirmed cases of infection and 858 fatalities, including 38 deaths following a single introduction into South Korea. SARS-CoV-2 is a novel virus identified as the cause of COVID-19 that began in Wuhan, China in late 2019 and is now classified as a pandemic.
* Coronaviruses have large single-stranded ribonucleic acids (RNA) genomes. Several studies of SARS-COV-2 patient samples indicate that SARS-CoV-2 has 2 strain variants known as S-type (also Type I) and L-type (Type 2).
  + S-Type
    - The S-type variant is believed to have emerged in humans in Wuhan before the L-type outbreak at the Hunan market. One study indicates that no evidence of the S-type strain has been found in those who can trace exposure to the market.
  + L-Type
    - Analysis suggests that the L-type was derived from the older S-type after mutation at 3 specific sites encoding for protein translation efficiency. These changes seem to confer a greater transmissibility (higher contagiousness) of the L-type variant.
  + While both are involved in the current pandemic, it seems as though the L-type strain is the most prevalent. It is not clear, currently, which strain is more aggressive in disease pathogenesis. It is also not known, at this time, if both strains induce the same symptoms and severity of disease.
  + Structural analysis of the viral particle suggests that SARS-CoV-2 may bind to the angiotensin-converting enzyme 2 receptor in humans. Further research into this may be useful for developing treatments in the future.
  + There is currently no vaccine to prevent coronavirus disease 2019 (SARS-COV-2). Current treatment of patients presenting with severe illness is aimed at addressing symptoms as is no anti-viral medicine has been identified for SARS-COV-2 at this time.
  + As no specific therapies are available for SARS-CoV-2, early containment and prevention of further spread will be crucial to stop the ongoing outbreak and to control this novel infectious thread.
  + **Sources:** Genomic characterization and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding, <https://www.sciencedirect.com/science/article/pii/S0140673620302518>; Genomic variations of COVID-19 suggest multiple outbreak sources of transmission, <https://www.medrxiv.org/content/10.1101/2020.02.25.20027953v2>; On the origin and continuing evolution of SARS-CoV-2, <https://academic.oup.com/nsr/advance-article/doi/10.1093/nsr/nwaa036/5775463>.

# Survival of SARS-COV-2 in the Environment

* The provision of safe water, sanitation and hygienic (WASH) conditions is essential to protecting human health during all infectious disease outbreaks, including the SARS-COV-2 outbreak. Ensuring good and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces and health care facilities will further help to prevent human-to-human transmission of the SARS-COV-2 virus.
  + Traditional WHO guidance on the safe management of drinking-water and sanitation services applies to the SARS-COV-2 outbreak. Therefore, extra measures are not needed as cleaning and disinfection facilitates rapid die-off of the SARS-COV-2 virus.
  + There is currently no data concerning the survival of the SARS-COV-2 virus in drinking-water or sewage. However, the morphology and chemical structure of the SARS-COV-2 virus are similar to those of other human coronaviruses for which data exists concerning both survival in the environment and effective inactivation measures. No current evidence from other human coronaviruses indicate that they are present in surface or groundwater sources or transmitted through contaminated drinking-water. The SARS-COV-2 virus is an enveloped virus, with a fragile outer membrane. Generally, enveloped viruses are less stable in the environment and are more susceptible to oxidants, such as chlorine used to treat drinking water. (The maximum allowable WHO value for free chlorine residual in drinking water is 5 mg/L. The minimum recommended WHO value for free chlorine residual in treated drinking water is 0.2 mg/L. CDC recommends not exceeding 2.0 mg/L due to taste concerns, and chlorine residual decays over time in stored water. <http://www.ehproject.org/PDF/ehkm/cdc-chlorineresidual-updated.pdf>.)
  + Studies focused on survival of other human coronaviruses in water indicate that C. Heat, high or low pH, sunlight and common disinfectants (such as chlorine) all facilitate die off.
  + Sources- Water, sanitation, hygiene and waste management for the COVID-19 virus, WHO, <file:///C:/Users/User/Downloads/WHO-2019-NcOV-IPC_WASH-2020.1-eng.pdf>.
* A recent review of the survival of human coronaviruses on surfaces found large variability, ranging from 2 hours to 9 days. Survival time depends on a number of factors including surface type, temperature, relative humidity, and viral strain. The same review found that effective inactivation could be achieved within 1 minute using common disinfectants, such as 70% ethanol or sodium hypochlorite (the main ingredient of bleach). (Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents, <https://www.sciencedirect.com/science/article/pii/S0195670120300463>.)
  + Human coronaviruses such as SARS, MERS or endemic human coronaviruses (HCoV) can persist on inanimate surfaces like metal, glass or plastic for up to 9 days. However, these viruses can be efficiently inactivated by surface disinfection procedures using 62–71% ethanol, 0.5% hydrogen peroxide, or 0.1% sodium hypochlorite within 1 minute. Other biocidal agents such as 0.05–0.2% benzalkonium chloride (the active ingredient found in alcohol free Purell and Germ-X hand sanitizers) or 0.02% chlorhexidine digluconate have been shown to be less effective.
  + Data on the transmissibility of coronaviruses from contaminated surfaces to hands were not found. However, it could be shown with influenza A virus that a contact of 5 seconds can transfer 31.6% of the viral load to the hands. (Survival of influenza viruses an environmental surfaces, <https://academic.oup.com/jid/article-abstract/146/1/47/992812?redirectedFrom=PDF>.)
  + Although the viral load of coronaviruses on inanimate surfaces is not known during an outbreak situation, reduction of the viral load on surfaces by disinfection, especially of frequently touched surfaces in the immediate patient surrounding where the highest viral load can be expected is considered a best practice. The WHO recommends thoroughly cleaning environmental surfaces with water and detergent and applying commonly used hospital-level disinfectants (such as sodium hypochlorite). The typical use of bleach is at a dilution of 1:100 of 5% sodium hypochlorite resulting in a final concentration of 0.05%.
* Additional guidance can be found at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>.
* Evidence of possible transmission of the SARS-CoV-2 virus from fomites (any inanimate object that, when contaminated with or exposed to infectious agents can transfer disease to a new host) has been noted in a study of a disease cluster found in a mall/office building in China. (Indirect Virus Transmission in Cluster of COVID-19 Cases, Wenzhou, China, 2020, <https://wwwnc.cdc.gov/eid/article/26/6/20-0412_article>.)
* A new National Institutes of Health study has summarized the viability of the SARS-CoV-2 virus on various surfaces. The study found that SARS-CoV-2 was more stable on plastic and stainless steel than on copper and cardboard. Viable virus was detected up to 72 hours after application to these surfaces, however, the viral titer was greatly reduced. On copper, no viable SARS-CoV-2 was measured after 4 hours and on cardboard, no viable SARS-CoV-2 was measured after 24 hours. The study results indicate that fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious on surfaces up to days. (Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1, <https://www.nejm.org/doi/10.1056/NEJMc2004973> .)

# Testing for SARS-COV-2

* The Centers for Disease Control and Prevention (CDC) COVID-19 Real-Time Polymerase Chain Reaction (RT-PCR) Diagnostic Panel is designed for the qualitative detection of nucleic acid from the virus in upper and lower respiratory specimens (such as nasopharyngeal or oropharyngeal swabs, sputum, lower respiratory tract aspirates, bronchoalveolar lavage, and nasopharyngeal wash/aspirate or nasal aspirate). ( CDC 2019-Novel Coronavirus (2019-nCoV) Real-Time RT-PCR Diagnostic Panel <https://www.fda.gov/media/134922/download>.)
* Priorities for SARS-COV-2 testing may include:
  + Hospitalized patients who have signs and symptoms compatible with SARS-COV-2.
  + Other symptomatic individuals such as, older adults and individuals with chronic medical conditions and/or an immunocompromised state that may put them at higher risk for poor outcomes (e.g., diabetes, heart disease, receiving immunosuppressive medications, chronic lung disease, chronic kidney disease).
  + Anyone who within 14 days of symptom onset had close contact with a suspected or laboratory-confirmed SARS-COV-2 patient, or who have a history of travel from affected geographic areas within 14 days of their symptom onset.
  + Documented SARS-COV-2 infections in a jurisdiction and known community transmission may also contribute to an epidemiologic risk assessment that informs testing decisions.
* According to the World Health Organization (WHO), several assays that detect the 2019-nCoV have been and are currently under development, both in-house and commercially. Some assays may detect only the novel virus and some may also detect other strains (e.g. SARS-CoV) that are genetically similar. However, the common factor is that all diagnostic tests employ the use of RT-PCR. (Coronavirus disease (COVID-19) technical guidance: Laboratory testing for 2019-nCoV in humans, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory-guidance>.)

# Methods for Cleaning and Disinfecting

* US Environmental Protection Agency (EPA) has released an expanded list of EPA-registered disinfectant products that have qualified for use against SARS-CoV-2, the novel coronavirus that causes SARS-COV-2. While disinfectant products on this list have not been tested specifically against SARS-CoV-2, the cause of COVID-19, they are expected to be effective against the virus because they have been tested and proven effective on either a harder-to-kill virus or against another human coronaviruses. (EPA Expands COVID-19 Disinfectant List, <https://www.epa.gov/newsreleases/epa-expands-covid-19-disinfectant-list>.)
  + The product list has been updated to include the product’s active ingredient and the amount of time the surface should remain wet to be effective.
  + Information in the table is now sortable, searchable and printable, and can be easily viewed on a mobile device.
  + The list is available at: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>.

# Asymptomatic Carriers and Testing for SARS-CoV-2

* There have been several reports of instances of SARS-CoV-2 transmission to others stemming from index patients who are asymptomatic. This is a concerning issue since compared to the R0 (a mathematical term that tells you the average number of people who will catch a disease from one contagious person; the larger the number the stronger the transmission power; and an R0 is less than 1, it means that the disease will gradually die out) of H1N1 (1.25) and that of SARS (2.2‐3.6), the R0 of SARS-CoV-2 indicates a strong potential transmission. The R0 is estimated to be 2.2, 3.8, and 2.68 according to several studies. The WHO published an estimated R0 of 1.4 to 2.5.
  + These asymptomatic carriers have been described as those with a very mild and short, almost inconclusive, presentation of SARS-Cov-2 or no symptoms at all. However, they have been traced back to as the source of infection for multiple disease clusters.
  + The difficulty with the identification of such individuals is that without presentation of symptoms (e.g., cough, fever, difficulty breathing) the only way to truly know is someone is infected is to test them for the presence of the virus in the respiratory tract.
  + Sources: Transmission dynamics of the COVID‐19 outbreak and effectiveness of government interventions: A data‐driven analysis, <https://onlinelibrary.wiley.com/doi/10.1002/jmv.25750>; Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany, <https://www.nejm.org/doi/full/10.1056/NEJMc2001468>.

# Prevention of Spread

* The WHO has stressed that the key to prevention and mitigation of spread of the SARS-CoV-2 virus is testing, isolation and contact tracing. These actions are how several nations have been able to control and greatly mitigate the spread of the virus up to this point. The WHO has stated that the most effective way to prevent infections and save lives is breaking the chains of transmission. And the key to that is to test and isolate because we cannot stop this pandemic if we do not know who is infected. (WHO Director-General's opening remarks at the media briefing on COVID-19 - 16 March 2020, <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020>.)
  + We have heard a lot in the last few days about social distancing (staying away from people outside of your family unit and maintaining at least a 6 foot distance between individuals when in public), self-quarantine (staying home and away from other people as much as possible for that 14-day period), isolation (when sick, either at home or in the hospital, infectious disease precautions are then much more rigid), and quarantine (under state or federal law — individuals or groups are essentially on lockdown).
* The WHO and public health agencies have taken the lead in response to SARS-Cov-2. The WHO has published quite a few guidance documents on their website. The most applicable ones are listed below:
  + The WHO has published the 2019 Novel Coronavirus Strategic Preparedness and Response Plan. This document outlines the public health measures that the international community stands ready to provide to support all countries to prepare for and respond to COVID-19. The document takes what we have learned so far about the virus and translates that knowledge into strategic action that can guide the efforts of all national and international partners when developing context-specific national and regional operational plans. It can be accessed at: <https://www.who.int/publications-detail/strategic-preparedness-and-response-plan-for-the-new-coronavirus>.
    - A companion document, a **draft** operational planning guidance for UN country teams, has also been published by the WHO to support national preparedness and response. The draft document provides a practical guide to prepare for and respond to SARS-CoV-2. It can be accessed at: <https://www.who.int/docs/default-source/coronaviruse/covid-19-sprp-unct-guidelines.pdf?sfvrsn=81ff43d8_4>.
  + The WHO has published a guide titled “Getting Your Workplace Ready for COVID-19” that describes low-cost measures that will help prevent the spread of infections in your workplace, and protect your customers, contractors and employees. This guidance is located at: <https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf?sfvrsn=359a81e7_6>.
  + The WHO has a page with links to technical guidance documents that are separated into sectors and topic for easy identification and access. These technical guides can be found at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>.
  + The WHO, in conjunction with industry groups, has produced and continues to develop technical guidance on maritime and aviation traffic, and ground crossings. These include:
    - Operational considerations for managing SARS-CoV-2 cases and outbreaks on board ships (Interim guidance) at <https://www.who.int/publications-detail/operational-considerations-for-managing-covid-19-cases-outbreak-on-board-ships>
    - Management of ill travelers at Points of Entry – international airports, seaports and ground crossings at <https://www.who.int/publications-detail/management-of-ill-travellers-at-points-of-entry-international-airports-seaports-and-ground-crossings-in-the-context-of-covid--19-outbreak>
    - Public health preparedness and response for aviation sector at <https://www.who.int/publications-detail/handbook-for-the-management-of-public-health-events-in-air-transport-updated-with-information-on-ebola-virus-disease-and-middle-east-respiratory-syndrome-coronavirus>
    - Operational considerations for managing COVID-19 cases/outbreak on board ships at <https://www.who.int/publications-detail/operational-considerations-for-managing-covid-19-cases-outbreak-on-board-ships>
    - Handbook for the management of public health events on board ships at <https://www.who.int/ihr/publications/9789241549462/en/>
    - Additional guidance on operational considerations for managing SARS-CoV-2 cases and outbreak in hotels and other travel and tourism accommodations are under development and will be available soon.
  + Real-time training during global emergencies is critical for effective preparedness and response. The WHO COVID-19 channel provides learning resources for health professionals, decision-makers and the public for the outbreak of coronavirus disease (COVID-19). These trainings can be accessed at: <https://openwho.org/channels/covid-19>
* The International Maritime Organization has published the ICS Coronavirus (COVID-19) Guidance for Ship Operators for the Protection of the Health of Seafarers at <http://www.imo.org/en/MediaCentre/HotTopics/Documents/Circular%20Letter%20No.4204-Add.4.pdf>.
* The US Coast Guard has published several Marine Safety Information Bulletins related to SARS-CoV-2. These can be found at: <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/MSIB/2020/MSIB-02-20_Novel_Coronavirus_2Feb2020.pdf?ver=2020-02-02-182614-690> and <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/MSIB/2020/MSIB-01-20-Novel-Coronavirus-Precautions-USCG.pdf?ver=2020-01-24-192641-323>.

# Standard Operating Guidelines and companion and implementation information

* Public Safety Answering Point, Triage Questions Regarding COVID-19
* Risk-Based Guidance for Exposure Reduction
* Risk-Based Guidance for Personal Protective Equipment
* Precautionary Measures During Patient Transport
* COVID-19 Responder Decontamination
* COVID-19 Ambulance Decontamination
* COVID-19 Post Exposure Reporting and Protection

## Standard Operating Guideline: Public Safety Answering Point, Triage Questions Regarding COVID-19

**Issued:**

**Effective Dates:**

**PURPOSE**: The following guidelines are provided to establish a standard method for eliciting information from callers, over 9.1.1. emergency telephones, regarding the likelihood of the presence of the COVID-19 virus in patients and occupancies where services are requested and to, thereby, provide advance information to responders, allowing them to take appropriate levels of precaution to reduce exposure.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** All Public Safety telecommunicators shall ask additional triage question on all 9.1.1. request for fire department services for **ALL NON-FIRE RESPONSES**, with further questions for emergency medical responses to elicit the level of potential for the presence of COVID-19 in the patient and the environment.

1. FOR ALL NON-FIRE requests for fire department assistance, the following questions shall be asked of the caller:
   1. Is the emergency in a private home, private business, or public place?
      1. If a home or business, has this location practiced isolation and for how long?
   2. Is anyone (else) at this location ill?
   3. Has anyone (else) at this location been tested for Coronavirus?
2. Responders should be advised of all answers to the above questions.
3. The following additional questions should be asked for medical responses regarding the patient – Questions should be asked regardless of chief complaint.
   1. Does (the patient) have a cough?
   2. Difficulty breathing, shortness of breath?
   3. Does (the patient) have a fever?
   4. Sore throat?
   5. Is (the patient) confused or difficult to arouse?
   6. Does (the patient) have bluish lip or face?
   7. Has (the patient) been tested for Coronavirus?
      1. If yes, what was the result?
   8. Has (the patient) been exposed to anyone who was ill, or traveled, in the last two weeks?
4. Responders should be advised on the number of the above “PPE” questions that were answered in the affirmative.
   1. E.G., “Be advised patient meets three out of eight PPE questions.”

**companion and implementation information**

**Standard Operating Guideline:** **Public Safety Answering Point, Triage Questions Regarding COVID-19**

This standard operating guideline is intended to provide responders with advanced knowledge of the presence of a potential COVID-19 exposure risk. By providing advanced notice responder can strategize actions to limit exposure prior to arrival, including but not limited to, selecting and donning appropriate PPE.

Section 1 calls for additional questions to be asked of all calls for fire department assistance that do not actually involve a fire. In addition to medical calls, fire departments respond to a wide variety of service calls. There have been instances where fire fighters have found themselves in a home where a person under investigation (PUI) for COVID-19 resides without their personal protective equipment due to lack of situational awareness.

Section 2 requires that responders be advised of all the answers to the questions asked. If the caller answers yes to any of these questions, responders should be informed of each affirmative answer, so that they understand the conditions. If the caller answers no to all the questions, the dispatcher can simply report that “all PPE screening questions are negative,” or similar language.

Section 3 list specific questions to be asked on medical calls. These questions should be asked on all medical calls, regardless of chief complaint because the call may be for a fall, or other injury, that has occurred either to someone who also is a PUI or infected with COVID-19. Similarly, a person who is otherwise ill or injured may be in a home with someone how is either a PUI or infected with COVID-19.

Section 4 requires that responders should be advised of the outcome of the triage questions in Section 3. It is not, however, necessary to broadcast each answer. An affirmative answer to one or more questions raises the index of suspicion. Simply reporting the number of questions answered in the affirmative will give the responder a gauge as to that level, from which they can make determinations for entry, PPE, etc.

## Standard Operating Guideline: Risk-Based Guidance for Exposure Reduction

**Issued:**

**Effective Dates:**

**PURPOSE**: Reduce the risk to fire fighters and EMS providers, and reduce the number of same placed at risk, to COVID-19 exposure through modified response practices.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** The following measures are recommended to minimize exposure:

1. Modified Actions for Medical Responses – It is not recommended that fire departments alter their response to medical emergencies by eliminating tiered response or the support of an engine, ladder or rescue company responding as first responders or in support of EMS units. Modifications are made regarding actions taken upon arrival, based upon triage and on scene observations.
2. Actions for 1st Responder apparatus – Does to EMS Ambulance

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **Incident Type/Severity** | **Initial Actions** | **Follow-on Actions** | | Minor illness/injury, NOT related to COVID-19 | Stage response team outside of the occupancy. If possible, make verbal contact with the patient and determine if immediate aid is needed. | **No Answer**: Send in one or two responder(s) with communications and “All patient contact” PPE (see PPE SOG) and 1st responder medical equipment | | **Immediate assistance needed**: Full team, dons PPE as above and makes entry | | **Patient/Caller state no immediate need**: Stage outside, awaiting EMS, continue communication with patient/caller | | Major illness/injury, no known or suspected nexus to COVID-19 | Prepare response team for immediate entry with PPE for “Unknown, critical patient.” | As determined by IC – Unless oxygen mask is required, apply surgical mask to the patient | | Non-Acute Presentation of known or suspected COVID-19 | Stage response team outside of the occupancy. If possible, make verbal contact with the patient and determine if immediate aid is needed.  If entry is made, unless oxygen mask is required, apply surgical mask to the patient | **No Answer**: Send in one responder with communications and “Patient within a close space” PPE (see PPE SOG) and 1st responder medical equipment | | **Immediate assistance needed**: Full team, dons PPE as above and makes entry | | **Patient/Caller state no immediate need**: Stage outside, awaiting EMS, continue communication with patient/caller | | If no immediate entry is required, determine if the patient can exit the building without assistance | **If no:** Proceed as above | | **If Yes:** Ask the patient/family to prepare to come outside , but await the arrival and preparation of the ambulance before asking them to move | | Acute Presentation of known or suspected COVID-19 | Prepare response team for immediate entry with PPE for “Unknown, critical patient.” | As determined by IC | | See Decontamination SOG | |

**companion and implementation information**

**Standard Operating Guideline:** **Risk-Based Guidance for Exposure Reduction**

The CDC and state public health officials have emphasized “social distancing” as a major strategy in preventing the spread of the COVID-19 virus. Reducing the exposure of emergency responders is, similarly, key to reducing spread, but moreover to maintaining a healthy fire service to protect the lives of others. The steps outlined in this SOG seek to limit exposure without compromising our mission.

While many requirements have been waived by the Mass. Department of Public Health, and others, nowhere has the responsibility to respond to emergency requests been reduced. These procedures assure a continued prompt response with guidance to actions based upon what is presented to the responder.

This SOG sets out reasonable measures to respond, based upon reported patient severity, and subject to condition found upon arrival. It cannot be assumed, for example, that a reported minor illness is, in fact, a minor illness based solely upon the 9.1.1. call, such that it would be appropriate for first responders to respond and stage at the location without confirming the condition of the patient. This SOG calls for responders to make contact with the patient, or caller, to confirm the stability of the patient.

If confirmed, and if the patient and caller are comfortable in awaiting the ambulance, first responders can continue to wait outside and maintain communication. During such time, should conditions change, operations must change accordingly.

With more severe or acute illnesses or injuries, the process works in reverse. Initial protected entry is made and “if” it is determined that the acuity requires less assistance, those not needed are released to limit the time of exposure.

In a memorandum, dated March 20, 2020, the Massachusetts Department of Public Health put forward a recommendation that, *“If it is determined after interviewing the patient that he/she is stable and ambulatory, then the patient should be walked to the ambulance by the EMT who has made contact and is donned in PPE. Advance notice should be given to any personnel outside, so that there is a clear path to the ambulance. If extrication is required, then the minimal number of personnel to safely extricate the patient should be utilized, and all involved should be donned in appropriate PPE.”*

Thus, it is an acceptable standard to attempt this measure to limit or eliminate exposure to responders

## Standard Operating Guideline: Risk-Based Guidance for Personal Protective Equipment

**Issued:**

**Effective Dates:**

**PURPOSE**: Reduce the risk to fire fighters and EMS providers by providing a matrix of personal protective equipment (PPE) recommendations, consistent with federal regulations and consensus standards, and based upon the mission and the role of the responder in response to that mission to provide protection from exposure from COVI-19. These guidelines will seek to consider currently available PPE and PPE that will or may become available as supply chains are restored and meet demand.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** All responders should become familiar with and comply with the following table of personal protective equipment based upon mission and role. Fire Department will endeavor to maintain adequate levels of personal protective equipment and may opt to increase PPE levels in accordance with this table, from minimal to optimal, as equipment becomes available.

To use the Mission/Role/PPE Matrix, identify the incident description that best meets the circumstances of a response. Then, identify your role as either: EMS Provider, Fire Fighter, or Commander. For immediate needs purposes, identify equipment on hand to utilize for PPE. For planning and purchase purposes, identify available or optimal equipment as listed.

|  |  |  |  |
| --- | --- | --- | --- |
| Mission | Role | Minimum | Optimal |
| All patient contacts, non-medical, non-fire requests for services where a self-quarantined person, PUI or infected person resides | EMS Provider | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 |
| Fire Fighter/1st Responder | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 |
| Commander | Distance | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 |
| Patient within a close space (e.g. bedroom)  Patient within a close space (e.g. bedroom) (Cont.) | EMS Provider | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Hooded and taped coveralls meeting ASTM F 1671 or NFPA 1999 |
| Fire Fighter/1st Responder | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 |
| Commander | Distance | Distance |
| Patient with symptoms, history and physical findings consistent with COVID-19  Patient with symptoms, history and physical findings consistent with COVID-19 (cont.) | EMS Provider | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination Gloves meeting ASTM D6319 (Nitrile), NFP Examination gloves, double layer, meeting A 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Hooded and taped coveralls meeting ASTM F 1671 or NFPA 1999 |
| Fire Fighter/1st Responder | Distance | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Hooded and taped coveralls meeting ASTM F 1671 or NFPA 1999 |
| Commander | Distance | Distance |
| Unknown, critical patient  Unknown, critical patient  (Cont.) | EMS Provider | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Hooded and taped coveralls meeting ASTM F 1671 or NFPA 1999 |
| Fire Fighter/1st Responder | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 | Fit tested N-95 or better Respirator  Vented Goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977  Gown or coveralls meeting ASTM F 1671 or NFPA 1999 |
| Commander | Fit tested N-95 Respirator  Safety glasses with side and top shields  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 | Distance, plus Fit tested N-95 Respirator  Safety glasses with side and top shields, goggles or full face shield  Examination gloves, double layer, meeting ASTM D6319 (Nitrile), NFPA 1999 or ASTM D6977 |

**companion and implementation information**

**Standard Operating Guideline:** **Risk-Based Guidance for Personal Protective Equipment (Based upon current availability)**

SOGs on personal protective equipment are based on the Mission/Role matrix used by the Interagency Board to define PPE requirements for homeland security missions and by the Massachusetts Executive Office of Public Safety PPE Strategy for responders. The matrix looks at the event and the role of the various responders at that event to determine risk and guide protection.

The objectives are the PPE strategy are as follows:

1. To provide the best protection to the responder, using available capabilities and identifying where capabilities should be prioritized for improvement.
2. To limit the requirement for PPE by reducing exposure (see also **Risk-Based Guidance for Exposure Reduction).**
3. To preserve PPE by scaling PPE to risk of exposure.

In some instances, minimal PPE and optimal PPE are the same. In short, it is because the mission role is high risk and PPE must correspond to that risk.

To use this table, identify the response type under the “Mission” column.

Identify your role.

Look first to see if optimum PPE capability is available to you, if not then look to meet the minimum capability or anything between the two.

Of note, Mass DPH and CDC, in describing PPE requirements, list single layer gloves. This SOG calls for double layered gloves in all instances to comply with the Doffing and Decontamination procedure in anther SOG of this series.

## **Standard Operating Guideline:** Precautionary Measures During Patient Transport

**Issued:**

**Effective Dates:**

**PURPOSE**: To limit possible contamination of interior surfaces and workspaces in the ambulance and minimize primary and secondary exposure of responders or family members.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** The following guidelines should be followed when a patient being transported is a PUI or known infected COVID-19 patient.

1. Except in the case of a minor child, no family should be allowed to ride in the ambulance during patient transport
2. Prior to transporting the patient, make provisions to contain any potential droplet contamination as follows:
   1. Close all interior compartments
   2. Store unneeded medial bags, etc. in outside compartments or the vehicle cab
   3. Close any connecting doors or windows to the ambulance cab (if possible)
3. The patient attendant must remain in PPE
4. The driver should, upon exiting the patient compartment of the ambulance, reduce PPE, as follows:
   1. Remove gown or coveralls (including over boots if worn)
   2. Remove outer gloves
   3. Remove goggles or face shield
   4. N-95 mask and inner gloves remain in place
5. If a full and effective closure between the cab and patient compartment could not be achieved, establish a negative pressure in the cab, with respect to the patient compartment:
   1. Close outside windows in the cab and patient compartment.
   2. Turn the exhaust fan in the patient compartment on high.
   3. Turn the vent fan in the cab on high (set temperature to comfort)
6. Upon arrival at the hospital, the driver must don new goggles/face shield, a new gown or coveralls (and over boots), and a new set of outer gloves, prior to removing the patient. This PPE should remain on while cleaning the ambulance, after discharging the patient to the hospital.

**companion and implementation information**

**Standard Operating Guideline:** **Precautionary Measures During Patient Transport**

The highly contagious nature of the COVID-19 virus requires that some unusual measures be taken to prevent surface contamination inside the ambulance. This SOG reflects steps recommended by the CDC, Mass. DPH and the PFFM to limit the spread of surface contamination.

The objective is to create a single direction airflow, moving any airborne particles away from the cab of the ambulance and interior surfaces, out of the vehicle. This CANNOT be accomplished by simply opening windows as the airflow in and around a moving vehicle is unpredictable and may act to deposit airborne particles on surfaces of the ambulance.

While each ambulance configuration of windows, doors and vents differs, understanding the objective will aid in determining the best and most effective combination for each vehicle.

**IAFF:**

Keep the patient separated from other people as much as possible.

* Family members and other contacts of patients with possible COVID-19 infection should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
* Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
* When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
  + Close the door/window between these compartments before bringing the patient on board.
  + During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in vehicle.
  + 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.
  + Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH).
* If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.

**Mass DPH:**

The environmental control systems in the ambulance should be specifically set up to

maximize the airflow of fresh air. The heating/AC systems should be on a setting that

does not recirculate air. In addition, the exhaust fans in the patient compartment should

be activated. These changes should be setup at the beginning of the shift, and any EMTs

with questions should consult a supervisor.

**CDC:**

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

* EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
* Keep the patient separated from other people as much as possible.
* 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 facemask.
* Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
* When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
  + Close the door/window between these compartments before bringing the patient on board.
  + 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.
  + 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.
  + Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (<https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf>).
* If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
* Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

## Standard Operating Guideline: COVID-19 Responder Decontamination

**Issued:**

**Effective Dates:**

**PURPOSE**: To provide a standardized method of doffing personal protective equipment (PPE) and cleaning and hygiene to prevent cross contamination following treatment and/or transport of a potentially contagious patient.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** The following steps should be taken, in order, upon completion of treatment and/or transport of a patient who is known or suspected of having COVID-19. Doffing and decontamination measures should NOT be taken until the vehicle is cleaned and disinfected, unless responders intend on donning new PPE for this step of the process.

1. Among the most important steps in doffing and decontamination is the donning of PPE. PPE must be donned and layered such that the correct order of doffing can be accomplished without cross contamination. See the companion guide to these SOGs for detailed instruction or follow department training.
2. Select a location that is outside of public or patient treatment areas and protected from wind, etc.
3. Set up equipment, such as plastic bags to receive contaminated materials. Be certain that everything needed is within arm’s reach before starting.
4. Doffing PPE:
   1. Remove outer gloves in a manner as to avoid touching the outside of the outer glove with the inner glove (see companion guide). Throw outer gloves into the decon trash bag.
   2. If wearing full length coveralls without disposable outer boots, remove footwear and put it aside.
   3. Step into decon bag.
   4. Remove gown, being careful not to allow the outside of the gown to reverse and touch your clothing. Place gown in decon bag.
   5. Step out of the decon bag.
   6. Remove goggles/face-shield; Some goggle may not be disposable and may be cleaned and disinfected for reuse. If so, have a separate bag for goggles at the ready. Remove goggle or face-shield by pulling in horizontally away from your face, then upward. Remove completely and place in the appropriate bag. If using reusable goggles decontaminate as equipment.
   7. Respirator: If using a half-face or full-face respirator or APR, separate from trash, using another bag and decontaminate as equipment. If using N-95 or higher respirator, the doffed respirator will be discarded in the decon bag. Remove the respirator using the same upward motion used to remove the goggles. Fully remove the respirator in a single movement. Place the respirator in the appropriate bag.
   8. Remove the inner gloves in the same manner as the outer gloves, being careful not to touch the outside of the gloves (see companion guide) (see also IAFF video, “Donning and Doffing PPE”). Discard gloves in the decon bag.
   9. Close all bags and dispose of as appropriate (trash or equipment decon).
5. Wash all exposed skin with soap and water, even if PPE was worn.
6. Consider uniform change and washing as soon as practical.

**companion and implementation information**

**Standard Operating Guideline:** **COVID-19 Responder Decontamination**

It is widely believed that a primary source of the infection of healthcare providers in the Ebola crisis was the result of improper doffing of personal protective equipment. Great care must be taken in removing potentially contaminated protective equipment, or the contaminants can be re-aerosolized, or come in contact with mucosa, skin or clothing. When PPE is removed, it must be fully removed and placed in an appropriate receptacle for disposal or cleaning, without delay.

The first step in the proper doffing of PPE is the proper donning of PPE. PPE should be donned with close attention to the order in which it will be removed, so that one layer does not interfere with another, causing premature removal, for example of the mask. In principal, PPE is removed beginning with the furthest point from critical exposure and working inward.

**Equipment List (Decontamination Station)**

Plastic Bags-self decon (minimal 40 gallon)

Plastic Bags for mask and inner gloves

Spray Bottles, opaque, 16 oz.

Decon solution -EPA approved disinfectant (10% bleach solution)

Zip ties (optional)

Equipment Decon checklist

Equipment Doffing checklist

**Removing outer Gloves**

Outer gloves should be free of any debris, tape, etc. before removing. Be certain that the decon bag is open and you may be standing in it.



Pinch the first outer glove, near the heel of your hand, below the cuff, being careful not to touch the inner glove.



Strip the glove away, causing it to invert as you pull it off of your hand.

Once removed, hold that glove in the hand that is still double gloved.



Next, using index finger and thumb of the, now single gloved hand, reach under the cuff of the remaining outer glove and pinch the inside of the outer glove.

Pull the outer glove toward the fingers of that hand, inverting the outer glove as you strip it away.





As you remove the second outer glove, allow it to envelop and contain the previously removed outer glove, from the other hand, still being held.

When completed, both outer gloves should be contained and inverted, with the clean side out.

Discard these gloves into the waste bag

**Doffing Goggles**



Prior to doffing goggles, be certain that they were properly donned and that the goggle straps are over the N-95 mask straps. If not, doffing the goggle may dislodge the N-95 mask.



When prepared to doff, with both hands, reach up and pull the goggles, horizontally, away from you face an inch or two.



In a single move, pull the goggle up and away from your face until completely clear and off of your head.

Place the goggle, either in the waste bag or into a contaminated equipment bag for cleaning.

**N-95 Doffing**

With eyes closed and while holding your breath, grasp N95 respirator with both hands and pull away from the face and over the head. Dispose of N95 in decon bag. Resume breathing.

## Standard Operating Guideline: COVID-19 Ambulance Decontamination

**Issued:**

**Effective Dates:**

**PURPOSE**: To provide a standardized method of decontaminating ambulances to prevent spread of the COVID-19 virus to responders and subsequent patients.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** EMS personnel are to clean the ambulance in which any patient at risk of COVID-19 exposure was transported, in accordance with the CDC’s recommendations, and in conjunction with the Service’s routine cleaning practices. Specifically, the CDC recommends the following guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a patient under investigation for COVID-19:

1. After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles. The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.
2. When cleaning the vehicle, EMS personnel should wear a disposable gown and gloves. A face shield or facemask 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 (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product’s label) are appropriate for severe acute respiratory syndrome COVID-19 (coronavirus 2 (SARS-CoV-2)) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
   1. The EPA has updated guidance about recommended EPA-registered disinfectants that meet the criteria for use against SARS-CoV-2, which is posted online at: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>.
5. Clean and disinfect the vehicle in accordance with standard operating procedures. **All surfaces**[[1]](#footnote-1) 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 using an EPA-registered hospital grade disinfectant in accordance with the product label.
6. Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer’s instructions.
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.[[2]](#footnote-2)

**companion and implementation information**

**Standard Operating Guideline**: COVID-19 Ambulance Decontamination

While this SOG is derived completely from Mass. DPH Guidelines, there are several important steps to assure effective decontamination.

1. Work from high to low and front to back.
2. Assure that surfaces are dry from the washing phase, before proceeding to disinfecting. Soap and water may dilute disinfectant or block it from contacting surfaces.
3. **Pay close attention to the required contact time for the disinfecting product used** against Coronaviruses. Different solutions have different contact times to effectively kill various organisms. This is important to note both when selecting a disinfectant and when applying it. Contact times can range between 2 and 30 minutes.
4. Be sure to allow the required contact time before wiping or washing away the disinfectant.

## Standard Operating Guideline: COVID-19 Post Exposure Reporting and Protection

**Issued:**

**Effective Dates:**

**PURPOSE**: To provide uniformed actions to report and follow-up upon unprotected and/or under-protected exposure to responders of COVID-19, and where necessary provide for safe isolation, pending test results.

**SCOPE**: To provide a consistent and interoperable capability among all fire departments in Massachusetts, this Standard Operating Guideline should be followed by all departments.

**GUIDELINES:** While adherence to all Standard Operating Guidelines (SOGs) should prevent either an unprotected or under-protected exposure to COVID-19 by fire department responders, it is necessary to make provisions for unexpected conditions that may result in exposure. Accordingly, the following measures are put in place to address the inadvertent exposure from unprotected encounter or under protected encounter to a person under investigation (PUI) or infected person.

1. Upon discovery, by a responder, that they have been exposed to a PUI or infected person, or environment, and were either unprotected or under-protected, such responder should, if practical, or as soon as practical, extricate themselves from such exposure and report the unprotected exposure to their superiors.
2. The exposed responder should, immediately upon completion of, or relief from, duties, wash exposed skin areas (except eyes) with soap and water or an alcohol cleaner.
3. If the responder is not a transporting EMS provider, they should return to quarters, shower and change uniforms.
4. If a patient transport results from the response, the EMS providers transporting the patient shall complete and submit a Massachusetts Department of Public Health, Unprotected Exposure Report to the receiving hospital.[[3]](#footnote-3)
5. Where a responder is exposed due to unprotected or under-protected exposure, and based upon the following table[[4]](#footnote-4) of exposure risk, the department, in consultation with local public health officials and the service’s medical director, will determine of the disposition of the responder:

| **Epidemiologic Risk Classification** | | | |
| --- | --- | --- | --- |
| **Epidemiologic risk factors** | **Exposure category** | **Recommended Monitoring for COVID-19 *(until 14 days after last potential exposure)*** | **Work Restrictions for Asymptomatic Responder** |
| **Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)** | | | |
| Responder PPE: None | Medium | Active | Exclude from work for 14 days after last exposure |
| Responder PPE: Not wearing a facemask or respirator | Medium | Active | Exclude from work for 14 days after last exposure |
| Responder PPE: Not wearing eye protection | Low | Self with delegated supervision | None |
| Responder PPE: Not wearing gown or gloves | Low | Self with delegated supervision | None |
| Responder PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator) | Low | Self with delegated supervision | None |
| Responder PPE: None | High | Active | Exclude from work for 14 days after last exposure |
| Responder PPE: Not wearing a facemask or respirator | High | Active | Exclude from work for 14 days after last exposure |
| Responder PPE: Not wearing eye protection | Medium | Active | Exclude from work for 14 days after last exposure |
| Responder PPE: Not wearing gown or gloves | Low | Self with delegated supervision | None |
| Responder PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)[b](https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html#b) | Low | Self with delegated supervision | None |

PPE=personal protective equipment

1. The risk category for these rows would be elevated by one level if Responder performed or were present for a procedure likely to generate higher concentrations of respiratory secretions or aerosols (e.g., cardiopulmonary resuscitation, intubation, extubation, nebulizer therapy, sputum induction). For example, responders who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol-generating procedure would be considered to have a medium-risk exposure.
2. Recommendations for Monitoring Based on COVID-19 Exposure Risk - Responders in any of the risk exposure categories who develop signs or symptoms compatible with COVID-19 must contact their established point of contact (public health authorities or their facility’s occupational health program) for medical evaluation prior to returning to work.
   1. ***High- and Medium-risk* Exposure Category**  
      **Responder in the high- or medium-risk category** should undergo active monitoring, including restriction from work until 14 days after their last exposure. If they develop any fever (measured temperature >100.4oF or subjective fever) OR respiratory symptoms consistent with COVID-19 (e.g., cough, shortness of breath, sore throat)[\*](https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html#note1) they should immediately self-isolate (separate themselves from others) and notify their local or state public health authority and healthcare facility promptly so that they can coordinate consultation and referral to a healthcare provider for further evaluation.
   2. ***Low-risk* Exposure Category  
      Responder in the *low-risk* category** should perform self-monitoring with delegated supervision until 14 days after the last potential exposure. Asymptomatic responder in this category are not restricted from work. They should check their temperature twice daily and remain alert for respiratory symptoms consistent with COVID-19 (e.g., cough, shortness of breath, sore throat)[\*](https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html#note1). They should ensure they are afebrile and asymptomatic before leaving home and reporting for work. If they do not have fever or respiratory symptoms they may report to work. If they develop fever (measured temperature > 100.4oF or subjective fever) OR respiratory symptoms they should immediately self-isolate (separate themselves from others) and notify their local or state public health authority or healthcare facility promptly so that they can coordinate consultation and referral to a healthcare provider for further evaluation. On days HCP are scheduled to work, healthcare facilities could consider measuring temperature and assessing symptoms prior to starting work. Alternatively, facilities could consider having HCP report temperature and symptoms to occupational health prior to starting work. Modes of communication may include telephone calls or any electronic or internet-based means of communication.
   3. **Responder who Adhere to All Recommended Infection Prevention and Control Practices**Proper adherence to currently recommended infection control practices, including all recommended PPE, should protect the responder having prolonged close contact with patients infected with COVID-19. However, to account for any inconsistencies in use or adherence that could result in unrecognized exposures, the responder should still perform self-monitoring with delegated supervision as described under the low-risk exposure category.
   4. ***No Identifiable risk* Exposure Category  
      The responder in the *no identifiable risk* category**do not require monitoring or restriction from work.
3. **Community Exposures**A responder with potential exposures to COVID-19 in community settings, (e.g., unprotected response into a home where a PUI or infected person lives, but with no direct contact) should have their exposure risk assessed according to [CDC guidance](https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html). Responder should inform their superiors that they have had a community exposure. Responders who have a community exposure should undergo monitoring as defined by that guidance. Those who fall into the *high-* or *medium-* *risk* category described there should be excluded from work until 14 days after their exposure. Responders who develop signs or symptoms compatible with COVID-19 should contact their established point of contact (public health authorities or department health program) for medical evaluation prior to returning to work.
4. Any responder who suffers an unprotected or under-protected exposure to a PUI, infected patient, or community exposure shall receive prioritized testing. Such testing is imperative to protect the health of the responder and to sustain critical public safety capabilities that may otherwise be affected by community exposure within the department**.**
5. Fire departments, or districts may establish temporary housing for members awaiting test results, to allow responders to protect their families. Assignment of members to such facilities should be based upon the “**Work Restrictions for Asymptomatic Responder”** column of the Epidemiological Risk Classification table, using “Exclude from work for 14 days after last exposure” as the qualifier for such accommodation.

**companion and implementation information**

**Standard Operating Guideline:** **COVID-19 Post Exposure Reporting and Protection**

This may be the most difficult of the SOGs to implement as it directly effects the department members sense of self and family safety. It is important that this SOG be presented in the continuum of the preceding SOGs that work to provide layers of protection, before reaching this point.

If the preceding SOGs are effectively implemented and adhered to, this section should seldom, if ever be necessary.

It is important not to over apply this SOG, as doing so will call into question the protective measures set forth in the other SOGs.

Some fire departments have established relationships with local colleges, etc. to house department members awaiting test results. It is recommended that such facilities serve regionally, so that the logistics of supporting those being housed in temporary facilities.

Consider early involvement of CISM systems.

1. Emphasis added. [↑](#footnote-ref-1)
2. The above SOG was entirely derived from a Mass DPH Memorandum addressing Post Transport Cleaning, dated March 20, 2020. [↑](#footnote-ref-2)
3. For purposes of 105 CMR 172.000, Implementing of Massachusetts General Laws C. 111, §111C, Regulating the Reporting of Infectious Diseases Dangerous to the Public Health, DPH is interpreting Severe Acute Respiratory Syndrome (SARS) (including infection with the SARS-associated coronavirus), included in the regulatory definition of “Infectious Disease Dangerous to the Public Health” to include SARS-CoV-2, the virus that causes COVID-19.

   As part of this interpretation, pursuant to 105 CMR 172.002, immediately upon arrival at a healthcare facility, transporting EMS personnel and/or first responder shall provide the appropriate employee of the healthcare facility with an Unprotected Exposure Form for any patient transported for whom the EMS personnel and/or first responder may have suffered an unprotected exposure to SARS-CoV-2, the virus that causes COVID-19.

   Hospitals will be responsible, pursuant to 105 CMR 172.003 for reporting back to the ambulance service’s or first responder agency’s Designated Infection Control Officer, for follow-up with the applicable EMS personnel and/or first responders. [↑](#footnote-ref-3)
4. Derived from CDC: Epidemiologic Risk Classification1 for Asymptomatic Healthcare Personnel Following Exposure to Patients with 2019 Novel Coronavirus (2019-nCoV) Infection or their Secretions/Excretions in a Healthcare Setting, and their Associated Monitoring and Work Restriction Recommendations [↑](#footnote-ref-4)