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Crisis Standards of Care

Crisis Level Guidance for COVID-19

State of Nevada

Department of Health and Human Services

Division of Public and Behavioral Health

Governor Sisolak's Medical Advisory Team for the COVID-19 Response
and
Emergency Providers of Nevada

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Crisis Level Guidance for COVID-19

The Nevada Crisis Standards of Care (CSC) Plan has been activated. Initial guidance for resource sparing strategies based on shortages of space, staff, and supplies throughout Nevada's statewide healthcare system is provided in this document. These recommendations may change as the situation evolves in Nevada. The content in this plan is specific to the COVID-19 response and assumes the situation has reached the "crisis" level of the overall CSC Plan.

COVID-19 Situation Summary

The Nevada Department of Health and Human Services and partner agencies across the state are responding to a pandemic of respiratory disease caused by a novel (new) coronavirus (COVID-19). COVID-19 can cause mild to severe illness; most severe illness occurs in older adults. Symptoms of COVID-19 most often include fever, cough, and shortness of breath. When someone develops the following signs and symptoms, they should seek medical attention and testing for the disease.

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- Sore throat
- New loss of taste or smell
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

COVID-19 cases, hospitalizations, and deaths across the United States and in Nevada are rising. A combination of cold weather, more indoor activities, and back-to-back holidays is resulting in an increases burden of COVID-19. Current hospital capacity data is indicating that healthcare resources in Nevada are becoming overwhelmed.

How COVID-19 Spreads

There is still much to learn about COVID-19, including how and how easily it spreads. Based on what is currently known about COVID-19, spread is thought to occur mostly from person-to-person via respiratory droplets produced when an infected person coughs, sneezes, or talks. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. Spread is more likely when people are in close contact with one another (within about 6 feet). It is possible that COVID-19 may spread through the droplets and airborne particles that are formed when a person who has COVID-19 coughs, sneezes, sings, talks, or breathes.

CDC has updated the definition for close contacts to a positive COVID-19 case as of September 21, 2021. Close contact can occur while caring for a patient, including:

Someone who was less than 6 feet away from infected person (laboratory-confirmed or a clinical diagnosis) for a cumulative total of 15 minutes or more over a 24-hour period (for example, *three individual 5-minute exposures for a total of 15 minutes).* An infected person can spread SARS-CoV-2 starting from 2 days before they have any symptoms (or, for asymptomatic patients, 2 days before the positive specimen collection date), until they meet the criteria for ending isolation.If close contact occurs while not wearing all recommended PPE, healthcare personnel may be at risk of infection.

Principals of Crisis Standards of Care Crisis Level Guidance for COVID-19

All lives are precious. If resources are sufficient, all patients who can potentially benefit from therapies will be offered therapies. If resources are insufficient, all patients will be individually assessed. No one will be categorically denied care based on stereotypes, assumptions about any person's quality of life, or judgment about a person's "worth" based on the presence or absence of disabilities.

All patients, regardless of resources availability, will be treated with respect, care, and compassion. Triage decisions will be made without regard to basis of race, ethnicity, color, national origin, religion, sex, disability, veteran status, age, genetic information, sexual orientation, gender identity, quality of life, or any other ethically irrelevant criteria.

Additional Guidance for Crisis Standards of Care

This document is only intended to supplement the full "Nevada Crisis Standards of Care (CSC) Plan." For additional guidance see the full document that includes the following sections: Ethical Considerations, the State Disaster Medical Advisory Team (SDMAT) Roles and Responsibilities, Healthcare Resource Maximization, Triage, Emergency Medical Services, Hospitals, Out of Hospital Providers, Alternate Care Sites, Access and Functional Needs Considerations, Public Information, Communications Plans and Protocols, and Legal Considerations.

Updates to Guidance

This document is the foundation for the response and additional guidance will be published through technical bulletins as the situation develops. These supplemental guidance documents can be found on the Division of Public and Behavioral Health webpage: Technical Bulletins

Historical Plan Revisions

Version 1.0	4/2/2020
Version 2.0	5/28/2020
Version 3.0	7/15/2020
Version 4.0	12/8/2020
Version 5.0	12/28/2020
Version 6.0	11/08/2021

Nevada Crisis Standards of Care - Code of Ethics

Overview

The NV CSC Code of Ethics was developed to assist decision-makers, healthcare providers, and healthcare practitioners in ethical decision-making processes during catastrophic public health emergencies. This code of ethics is not intended to apply to localized emergency incidents of limited duration, emergencies not impacting population health, or emergencies where critical medical resource allocation decisions are not required to protect the population's health.

The ethical principles and code language outlined below were developed by the NV CSC Ethical and Legal Workgroup for application during catastrophic public health emergencies. The workgroup carefully considered public health ethical principles, community values obtained from feedback during the public engagement campaign, and information collected from several states during the development of the NV CSC Code of Ethics.

Application

During a catastrophic public health emergency in which the NV CSC Plan is activated, the SDMAT may develop CSC recommendations for dissemination to the public health agencies, healthcare providers, and healthcare practitioner network. The NV CSC Code of Ethics is provided to help guide decision-making and implementation processes. The NV CSC Code of Ethics is intended to supplement, not supplant, relevant existing codes of ethics for public health practitioners, healthcare facilities, healthcare providers, emergency medical services, and other entities involved in CSC responses.

Definitions of Key Terms

- Decision-makers: Persons tasked with making decisions regarding emergency responses or the allocation of scarce resources during a public health emergency on behalf of governmental bodies (e.g., federal, state, tribal, or local) or private sector entities (e.g., emergency response organizations, hospitals, healthcare providers, health insurance companies, or pharmaceutical companies).
- Healthcare practitioner: A person that furnishes healthcare or public health services.
- Healthcare provider: An organization or institution that provides healthcare or public health services.
- Public health emergency: Either (1) a declared state of emergency or public health emergency in which the health of the public is at risk; or (2) circumstances that require implementing a crisis standard of care as defined by IOM.

Core Ethical Guidelines:

1.0 Justice and Fairness. Justice and fairness are the moral and social principles that attempt to allocate scarce medical resources and services which are consistent, equitable, and non-discriminatory.

1.1 While the focus is on saving the greatest number of individuals for the benefit of the community instead of the individual, responses to disaster must not exacerbate disparities or access to care. The level of service to any one individual should be consistent with the above focus.

1.2 Persons critical to protecting the health and safety infrastructure may receive additional support to provide their services.

1.3 Distinctions among patients ought to be based on medical assessment and probable success of treatment.

1.4 The timing and content of a just system ought not to fall to individual healthcare providers.

1.5 The needs of particularly vulnerable groups should be addressed to ensure that a greater burden does not fall to those groups.

1.6 No prevailing treatment will establish the right to receive treatment. All treatment decisions ought to be based on resource availability and the best information available.

2.0 Duty to care. Healthcare practitioners have an ethical obligation to provide care during a response to a catastrophic public health emergency.

2.1 The care provided by healthcare practitioners will necessarily differ from the care they provide under conventional conditions.
2.2 Circumstances may require traditional patient-provider relationships be limited or altered.
2.3 To the extent possible, patients will not be abandoned.
2.4 Government and healthcare institutions should support healthcare practitioners in meeting conflicting duties or obligations.
2.5 Healthcare practitioners may face disproportionate burdens or greater risks for the benefit of the community. Healthcare professionals may be prioritized for support and services to enable them to provide continued service to the community.
2.6 During a catastrophic public health emergency, patients may not receive all levels of care.
2.7 Patients who are unable to receive conventional care or contingency care because capacities are overwhelmed should receive alternative forms of treatment or care, which may include palliative or comfort care if possible.

3.0 Proportionality. Burdensome requirements, (e.g., social distancing or school closures), should be commensurate with the scale of the catastrophic public health emergency and promise clear benefits that outweigh the burdens.

3.1 Government authorities should not overburden the public with restrictions. Restrictions should be as narrow as possible to address the needs of the community.
3.2 Restrictive measures will be utilized only when essential to the response.

4.0 Duty to steward resources. Decision-makers at all levels should allocate scarce resources and services to preserve their effectiveness and impact.

4.1 To the extent possible, scarce resources must be managed during a catastrophic public health emergency to minimize morbidity and mortality.
4.2 When resources are scarce, the patient who is most likely to medically benefit from the use of resources should be given priority.

5.0 Transparency. Officials should provide planning information to the community prior to a catastrophic public health emergency to facilitate public input. During such an event, officials should maintain clear communications with the community to provide situational and policy decision information.

5.1 During planning phases, officials should communicate clearly plans currently in place. Decisions should be open to public input and justifications for those decisions clearly explained.
5.2 Planning activities should be characterized by consideration of community values and priorities, response to public comment, commitment to ongoing revision of policy based on dialogue and data, and accountability for support and implementation.
5.3 During a catastrophic public health emergency, officials have an obligation to communicate to the community the decisions that have been made and the justification for those decisions.

6.0 Accountability. Agencies, healthcare practitioners, and healthcare providers at all levels of the healthcare system should accept and act upon their responsibilities.

6.1 Decision-makers and those responding to catastrophic public health emergencies, including healthcare practitioners and healthcare providers, are responsible for their actions (including failure to act).
6.2 The practitioner duty to care obligation is not absolute and practitioners may face conflicting ethical obligations, such as family obligations, performing procedures outside of a practitioner's scope of practice, or endangerment by caring for patients.

7.0 Respect for persons. To the extent possible, basic respect of a person's autonomy, dignity, privacy, and bodily integrity must be maintained, including honoring a patient's wishes.

7.1 In communication with the patient and family, healthcare practitioners and healthcare provider staff should be truthful and candid about a person's condition.

Duty to plan

8.0 Duty to plan. Government, healthcare providers, and the healthcare system have a responsibility to plan to the best of their abilities for catastrophic public health emergencies.

Recommendations for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points/Emergency Communication Centers (PSAP/ECCs)

This guidance applies to all medical first responders, including fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with suspected or confirmed Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection in the course of their work.

Background

This interim guidance has been updated based on currently available information about COVID-19 and the current situation in the United States. EMS practices should be based on the most up-to-date clinical recommendations and information from appropriate public health authorities and EMS medical direction about SARS-CoV-2 infection. Most recommendations in this updated guidance are not new; instead, they have been reorganized into the following Sections:

1. Recommended Infection Prevention and Control (IPC) Practices for Routine Healthcare Delivery During the Pandemic; and
2. Recommended IPC Practices when Caring for a Patient with Suspected or Confirmed SARS-CoV-2 Infection.

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

When preparing for and responding to patients with suspected or confirmed SARS-CoV-2 infection, close coordination and effective communications are important among all 911 Public Safety Answering Points/Emergence Communication Centers (PSAP/ECCs)— commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP/ECC and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. When SARS-CoV-2 infection is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who might have SARS-CoV-2 infection.

This guidance applies to all EMS personnel (i.e., prehospital EMS and medical first responders involved in 911 responses or interfacility transfers) across multiple EMS models including, but not limited to, free standing, third-service, fire-based, hospital-based, and related EMS providers. Note that fire services are also included as they respond to emergency medical calls and may do so with or without an ambulance.

EMS agencies should constantly monitor, track, document, and work to proactively address and adapt supply needs, calls for service, staffing models, levels of service, patient care protocols, transport requirements, response priorities, dispatch interrogations, pre-arrival instructions, care delivery models, and other essential pre-hospital services to ensure that patients within the respective community and jurisdiction receive the most appropriate resource, care, equipment, access, instruction, provider available knowing that it may be a deviation from the standards of care that have historically been, are expected and/or have been contracted for the particular region, with the understanding, spirit, and intent to provide the maximum level of safe, efficacious patient care within the confines of resource availability (personnel, equipment, EMS units, phone lines, technology etc.) and evolving public health event.

Additional Key Resources from CDC:

- Strategies to Optimize the Supply of PPE and Equipment
- Strategies to Mitigate Healthcare Personnel Staffing Shortages
- Interim U.S. Guidance for Risk Assessment and Work Restrictions for Healthcare Personnel with Potential Exposure to Coronavirus Disease 2019 (COVID-19)
- Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the COVID-19 Pandemic

Section 1: Recommended Infection Prevention and Control (IPC) Practices for Routine Healthcare Delivery During the Pandemic

The Centers for Disease Control and Prevention (CDC) recommends using additional infection prevention and control practices during the COVID-19 pandemic, along with standard practices recommended as a part of routine healthcare delivery to all patients. These practices are intended to apply to all patients, not just those with suspected or confirmed SARS-CoV-2 infection.

Recommendations for 911 PSAP/ECCs

Municipalities and local EMS authorities should coordinate with state and local public health, PSAP/ECCs, and other emergency call centers to address the need for modified caller queries about SARS-CoV-2 infection, outlined below.

These modified caller queries should be developed in collaboration with an EMS medical director and informed by local, state, territorial, tribal and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.

Modified Caller Queries

911 Public Safety Answering Points/Emergency Communication Centers (PSAP/ECCs) should question callers and determine whether the call concerns a person who might have SARS-CoV-2 infection (e.g., ask about signs and symptoms of COVID-19 or recent close contact with someone with SARS-CoV-2 infection). The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated.

Information about a patient who might have SARS-CoV-2 infection should be communicated immediately to EMS personnel before arrival on scene in order to limit the number of EMS personnel exposed to the patient and to allow use of appropriate PPE. As part of pre-arrival instructions, PSAP/ECCs should encourage the universal use of cloth face coverings for all persons who are safely able to wear them at the scene prior to EMS arrival. PSAP/ECCs should utilize medical dispatch protocols that are approved by their EMS medical director in consultation with the local or state public health department. These protocols should be updated, as needed, to accommodate changes in EMS availability, and/or the redirection of low acuity calls to alternate disposition (e.g., nurse triage line, telemedicine triage line).

PSAP/ECCs and EMS units that respond to calls 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 their local public health partners and the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List, Map and Fact Sheets) for planning guidance. They should notify the quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP/ECCs or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.

EMS Employer Responsibilities

The responsibilities described in this section are for the care and transport of all patients, and not only for the care and transport of patients with suspected or confirmed SARS-CoV-2 infection. The Ryan White HIV/AIDS Treatment Extension Act of 2009 addresses notification procedures and requirements for medical facilities and state public health officers and their designated officers regarding exposure of emergency response employees (EREs), which includes EMS and other first responders, to potentially life-threatening infectious diseases. In March 2020, CDC/NIOSH updated the list of potentially life-threatening infectious diseases to which EREs might be exposed that are covered by the Act to include the addition of COVID-19, the disease caused by the virus SARS-CoV-2. A medical facility must respond to appropriate requests by making determinations about whether EREs have been exposed to infectious diseases included on the list. See https://www.cdc.gov/niosh/docs/2020-119/pdfs/2020-119.pdf?id=10.26616/NIOSHPUB2020119 for more information.

In addition, EMS employers are required to:

- Develop IPC policies and procedures for EMS units that include a recommended sequence for safely donning and doffing PPE.
- Provide all EMS personnel with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS personnel are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and preventing self-contamination and contamination of environmental surfaces during the process of removing such equipment.
- As part of the Occupational Safety and Health Administration (OSHA) respiratory protection program, ensure EMS personnel are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirator), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., loose fitting powered air-purifying respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videos.
- EMS units should be provided adequate supplies (e.g., hand sanitizer, cleaning supplies, EPA-registered hospital disinfectants, PPE) so EMS personnel can adhere to recommended IPC practices.
- Ensure that EMS personnel and professional cleaners contracted by the EMS employer tasked to clean and disinfect transport vehicles and equipment are educated, trained, and have practiced the process according to EPA-registered label instructions, equipment manufacturer's instructions, and the EMS agency's standard operating procedures.

Screen all EMS Personnel for Signs or Symptoms of SARS-CoV-2 Infection at the Start of Each Shift

Although screening for symptoms will not identify asymptomatic or pre-symptomatic individuals with SARS-CoV-2 infection, symptom screening remains an important strategy to identify those who could have COVID-19 and require prompt assessment and response.

- Screen all EMS personnel and visitors (i.e., anyone entering the EMS facility) for symptoms consistent with COVID-19 and exposure to others with SARS-CoV-2 infection. Screen EMS personnel at the start of each shift. Screen visitors prior to entry to the facility (e.g., firehouse or EMS station).
    - Actively take their temperature and confirm absence of symptoms consistent with COVID-19. Fever is either measured temperature ≥100.0°F or subjective fever.
    - Ask them if they have been advised to self-quarantine because of exposure to someone with SARS-CoV-2 infection.
- Promptly manage anyone with symptoms of COVID-19 or who has been advised to self-quarantine:
    - EMS personnel should don a facemask if not already wearing one, return home, and notify occupational health services to arrange for further evaluation.
    - Visitors should be restricted from entering the EMS facility.

Assess All Patients for SARS-CoV-2 Infection

- If PSAP/ECC telecommunicators advise that the patient is suspected of having SARS-CoV-2 infection, based on symptoms or close contact with an individual with SARS-CoV-2 infection, EMS personnel should put on appropriate PPE (as described in Section 2) before entering the scene. EMS personnel should be aware of the signs and symptoms of COVID-19.
- If information about potential for SARS-CoV-2 infection has not been provided by the PSAP/ECC, EMS personnel should exercise caution when responding to any patient. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. If the patient's condition allows, the patient may be directed to meet the EMS crew at an appropriate location outside or in a more ventilated area.
- All patients (if tolerated), regardless of COVID-19 symptoms, should be instructed to practice source control. Patient contact should be minimized to the extent possible until a cloth face covering, or facemask is on the patient.

- If possible, EMS personnel should ask the patient about signs and symptoms of COVID-19 or if the patient has had recent close contact with someone with SARS-CoV-2 infection.
- If SARS-CoV-2 infection is suspected, PPE as described in the next Section should be used. If SARS-CoV-2 infection is not suspected, EMS personnel should follow standard procedures and use appropriate PPE for evaluating and providing care to the patient. Consideration for universal PPE (as described in Section 2) should be given depending on the level of community transmission.

Implement Universal Source Control Measures

Source control refers to use of cloth face coverings or facemasks to cover a person's mouth and nose to prevent the release of respiratory secretions when they are talking, sneezing, or coughing. Because of the potential for asymptomatic and pre-symptomatic transmission, source control measures are recommended for everyone, even if they do not have symptoms of COVID-19.

- Patients and family members should be wearing their own cloth face covering (if tolerated) prior to the arrival of EMS personnel and throughout the duration of the encounter, including during transport. If they do not have a face covering, they should be offered a facemask or cloth face covering, as supplies allow.
    - Facemasks and cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or anyone who is unconscious, incapacitated or otherwise unable to remove the mask without assistance.
    - If a nasal cannula is used, a facemask should (ideally) be worn over the cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.
- EMS personnel should wear a facemask at all times while they are in service, **including in breakrooms or other spaces where they might encounter co-workers**.
    - When available, facemasks are preferred over cloth face coverings for EMS personnel as facemasks offer both source control and protection for the wearer against exposure to splashes and sprays of infectious material from others.
        - Cloth face coverings should NOT be worn instead of a respirator or facemask if more than source control is needed.
        - Respirators with an exhalation valve are not recommended for source control, as they allow unfiltered exhaled breath to escape.
        - As of May 2021, the supply and availability of facemasks have increased significantly over the last several months. EMS personnel should not be using crisis capacity strategies at this time and should promptly resume conventional practices.
    - EMS personnel should remove their respirator or facemask, perform hand hygiene, and put on their cloth face covering when leaving at the end of their shift.
- Educate EMS personnel about the importance of performing hand hygiene immediately before and after any contact with their respirator or facemask.

Encourage Physical Distancing

Healthcare delivery requires close physical contact between patients and EMS personnel. However, when possible, physical distancing (maintaining at least 6 feet between people) is an important strategy to prevent SARS-CoV-2 transmission.

- During transport, limit the number of EMS personnel in the patient compartment to essential personnel.
- Limit others riding in the ambulance while the patient is transported to the healthcare facility to only those essential for the patient's physical or emotional well-being or care (e.g., care partner, parent, etc.)
    - They should wear a cloth face covering if possible, and, ideally, be screened for symptoms of COVID-19 or close contact with an individual with COVID-19 prior to transport including taking their temperature before entering the ambulance.

- Those with symptoms or a history of close contact in the prior 10 days should not be permitted in the ambulance.

For EMS personnel, the potential for exposure to SARS-CoV-2 is not limited to direct patient care interactions. Transmission can also occur through unprotected exposures to asymptomatic or pre-symptomatic co-workers in breakrooms, co-workers or visitors in other common areas, or other exposures in the community. Examples of how physical distancing can be implemented for EMS personnel include:

- Reminding EMS personnel that the potential for exposure to SARS-CoV-2 is not limited to direct patient care interactions.
- Emphasizing the importance of source control and physical distancing when engaged in non-patient care activities.
- Designating areas for EMS personnel to take breaks, eat, and drink that allow them to remain at least 6 feet apart from each other, especially when they must be unmasked.

Implement Universal Use of Personal Protective Equipment

- **EMS personnel working in areas with moderate to substantial community transmission** are more likely to encounter asymptomatic or pre-symptomatic patients with SARS-CoV-2 infection. If SARS-CoV-2 infection is not suspected in a patient (based on symptom and exposure history), EMS personnel should follow Standard Precautions (and Transmission-Based Precautions if required based on the suspected diagnosis). They should also:
  - Wear eye protection in addition to their facemask to ensure the eyes, nose, and mouth are all protected from splashes and sprays of infectious material from others.
  - Wear an N95 or equivalent or higher-level respirator, instead of a facemask, for:
    - Aerosol generating procedures (refer to which procedures are considered aerosol generating procedures in healthcare settings FAQ)
  - Respirators with exhalation valves are not recommended for source control.
- **For EMS personnel working in areas with minimal to no community transmission**, the universal eye protection and respirator recommendations described for areas with moderate to substantial community transmission are optional. However, EMS personnel should continue to adhere to Standard and Transmission-Based Precautions, including use of eye protection and/or an N95 or equivalent or higher-level respirator based on anticipated exposures and suspected or confirmed diagnoses. Universal use of a facemask for source control is recommended for EMS personnel.

Create a Process to Address to SARS-CoV-2 Exposures Among EMS Personnel and Others

EMS should have a process for notifying the health department about suspected or confirmed cases of SARS-CoV-2 infection, and should establish a plan, in consultation with local public health authorities, for how exposures in EMS personnel will be investigated and managed and how contact tracing will be performed. The plan should address the following:

- Who is responsible for identifying contacts (e.g., EMS personnel, patients, family members) and notifying potentially exposed individuals?
- How will such notifications occur?
- What actions and follow-up are recommended for those who were exposed?

Contact tracing should be carried out in a way that protects the confidentiality of affected individuals and is consistent with applicable laws and regulations. EMS personnel and patients who were transported to a healthcare facility should be prioritized for notification. These groups, if infected, have the potential to expose many individuals at higher risk for severe disease, or in the situation of admitted patients, are at higher risk for severe illness themselves.

Information about risk assessment, work restrictions and return to work criteria for healthcare professionals (HCP) including EMS personnel exposed to SARS-CoV-2 is available in the Interim Guidance for Managing Healthcare Personnel with COVID-19 Infection or Exposure.

The EMS system must be prepared for potential staffing shortages and have plans and processes in place to mitigate these, including providing resources to assist EMS personnel with anxiety and stress. Strategies to mitigate staffing shortages are available.

Section 2: Recommended IPC Practices when Caring for a Patient with Suspected or Confirmed SARS-CoV-2 Infection

Personal Protective Equipment (PPE)

EMS personnel who will directly care for a patient with suspected or confirmed SARS-CoV-2 infection or who will be in the compartment with the patient should adhere to Standard Precautions and use a NIOSH-approved N95 or equivalent or higher-level respirator (or facemask if a respirator is not available), gown, gloves, and eye protection.

When available, respirators (instead of facemasks) are preferred; they should be prioritized for situations where respiratory protection is most important, including the care of patients with pathogens requiring Airborne Precautions (e.g., tuberculosis, measles, varicella). Additional information about infection control practices and Transmission-Based Precautions is available in the Infection Control Guidance for Healthcare Professionals about Coronavirus (COVID-19).

- **Hand Hygiene**
  - EMS personnel should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and after removing PPE, including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process.
  - EMS personnel should perform hand hygiene by using alcohol-based hand sanitizer (ABHS) with 60-95% alcohol or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to ABHS.
  - EMS personnel should ensure that hand hygiene supplies are readily available to all personnel on the transport vehicle.
- **Personal Protective Equipment Training**
  EMS should select appropriate PPE and provide it to EMS personnel in accordance with OSHA PPE standards (29 CFR 1910 Subpart I). EMS personnel must receive training on and demonstrate an understanding of:
  - when to use PPE;
  - what PPE is necessary;
  - how to properly don, use, and doff PPE in a manner to prevent self-contamination;
  - how to properly dispose of or disinfect and maintain PPE; and
  - the limitations of PPE.

Any reusable PPE must be properly cleaned, decontaminated, and maintained after and between uses. Facilities should have policies and procedures describing a recommended sequence for safely donning and doffing PPE.

The PPE recommended when caring for a patient with suspected or confirmed SARS-CoV-2 infection includes the following:

- **Respirator or Facemask** *(Cloth face coverings are NOT PPE and should not be worn for the care of patients with suspected or confirmed SARS-CoV-2 infection or other situations where use of a respirator or facemask is recommended.)*
    - Don an N95 respirator (or equivalent or higher-level respirator) or facemask (if a respirator is not available) before performing patient care, if not already wearing one as part of extended use strategies to optimize PPE supply. Other respirators include other disposable filtering facepiece respirators, powered air purifying respirators (PAPRs), or elastomeric respirators.
    - N95 respirators or respirators that offer an equivalent or higher level of protection should be used instead of a facemask when performing or present for an aerosol generating procedure.
    - Disposable respirators and facemasks should be removed and discarded after exiting the patient's care area. Perform hand hygiene after removing the respirator or facemask.
        - If reusable respirators (e.g., PAPRs or elastomeric respirators) are used, they should also be removed after exiting the patient's care area. They must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
    - Per the CDC, the supply chain has been restored; thus, EMS personnel using facemasks instead of respirators should return to use of respirators for patients with suspected or confirmed SARS-CoV-2 infection.
- **Eye Protection**
    - Put on eye protection (i.e., goggles or a face shield that covers the front and sides of the face) before performing patient care, if not already wearing as part of extended use strategies to optimize PPE supply.
        - Protective eyewear (e.g., safety glasses, trauma glasses) with gaps between glasses and the face likely do not protect eyes from all splashes and sprays.
        - Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
    - Ensure that eye protection is compatible with the respirator so there is not interference with proper positioning of the eye protection or with the fit or seal of the respirator.
    - Remove eye protection after performing patient care.
    - Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use.
- Gloves
    - Put on clean, non-sterile gloves before performing patient care.
        - Change gloves if they become torn or heavily contaminated.
    - Remove and discard gloves after providing patient care, and immediately perform hand hygiene.
- Gowns
    - Put on a clean isolation gown before performing patient care. Change the gown if it becomes soiled. Remove and discard the gown in a dedicated container for waste or linen after providing patient care. Disposable gowns should be discarded after use. Cloth gowns should be laundered after each use.
    - If coveralls are used as an alternative to gowns, put on a clean coverall before performing patient care. A new coverall is required for each patient. Change the coverall if it becomes soiled. Remove and discard the coverall in a dedicated container for waste after providing patient care. Disposable coveralls should not be reused.

EMS systems should work with their health department, healthcare coalition, or emergency management agency to address shortages of PPE.

Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance. EMS personnel should exercise caution if an aerosol-generating procedure (AGP) is necessary.
    - An N95 or equivalent or higher-level respirator such as disposable filtering facepiece respirators, PAPR, or elastomeric respirator instead of a facemask, should be used in addition to the other PPE described above, by EMS personnel present for or performing aerosol-generating procedures.
    - Bag valve masks (BVMs), and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
    - EMS systems should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
    - If possible, the rear doors of the transport vehicle should be opened, and the HVAC system should be activated during AGPs. This should be done away from pedestrian traffic.
    - If possible, discontinue AGPs prior to entering the destination facility or communicate with receiving personnel that AGPs are being implemented.

EMS Transport of a Patient with Suspected or Confirmed SARS-CoV-2 Infection to a Healthcare Facility (including interfacility transport)

If a patient with suspected or confirmed SARS-CoV-2 infection requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS personnel should notify the receiving healthcare facility that the patient has suspected or confirmed SARS-CoV-2 infection so that appropriate infection control precautions may be taken prior to patient arrival.
- 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.
    - Before entering the isolated driver's compartment, the driver (if they were involved in direct patient care) should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
    - 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).
- 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 to create a pressure gradient toward the patient area.
    - Before entering the driver's compartment, the driver (if they were involved in direct patient care) should remove their gown, gloves and eye protection and perform hand hygiene to avoid soiling the compartment. They should continue to wear their respirator (or facemask if a respirator was not available).
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room, or to dedicated receiving area). At a minimum, EMS personnel should continue to wear their respirator (or facemask) and eye protection while transferring the patient from the ambulance into the facility. Depending on the level of direct patient contact and care being provided during transfer (e.g., CPR), it may be appropriate for EMS personnel to also continue wearing their gown and gloves when entering the facility. In such circumstances, transfer should be coordinated with receiving facility and care must be taken to avoid contaminating surfaces in the healthcare facility.

Documentation of Patient Care

- EMS documentation should include a listing of EMS personnel and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care and level of PPE worn). This documentation may need to be shared with local public health authorities if contact tracing becomes necessary.

Cleaning EMS Transport Vehicles after Transporting a Patient with Suspected or Confirmed SARS-CoV-2 Infection

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

- 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.
- When cleaning the vehicle, EMS personnel should wear a disposable gown and gloves, as well as their respirator or facemask. A face shield or goggles should also be worn if splashes or sprays during cleaning are anticipated.
- 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.
- 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 SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
    - Refer to List N on the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.
- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital grade disinfectant in accordance with the product label.
- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.
- Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.
- Follow standard operating procedures for containing and laundering used linen. Avoid shaking used linens.

Additional Resources

The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, Information Exchange (TRACIE) is an additional resource available at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf

Full CDC Guidance: Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States

Considerations for EMS Providers to Work in a Hospital Setting to Increase Staffing Resources

It should be considered for hospitals to use or employ paramedics, AEMTs and EMTs to work in the hospital setting to increase available staffing resource options. Paramedics, AEMTs and EMTs may function within the standardized scope of practice or Nevada practice guidelines under medical direction.

Increase EMS Provider Expired Certificate Acceptance from 3 Years to 5 Years

If an emergency medical technician, advanced emergency medical technician or paramedic is unable to renew his or her certificate when required, he or she must, if he or she wishes to renew the certificate, submit a request for a late renewal on a form provided by the Division of Public and Behavioral Health (Division). Within the scope of the current COVID-19 pandemic, activation of the Nevada Crisis Standards of Care Plan, and this document, the Division shall accept an application for late renewal if **less than 5 years** have elapsed from the date of expiration of the certificate. The individual must meet all other requirements for the recertification, including the required continuing medical education for the certification cycle.

Long Term Care Facilities

What Facilities Should Do when there are Cases in their Facility or Sustained Transmission in the Community.

Healthcare Personnel Monitoring and Restrictions:

- Implement universal use of facemask for all healthcare providers (HCPs) while in the facility.
- Consider having HCP wear *all* recommended PPE (gown, gloves, eye protection, N95 respirator or, if not available, a facemask) if adequate resources are available for the care of all residents, regardless of presence of symptoms. Implement protocols for extended use of eye protection and facemasks.
- If there is a shortage of PPE, standard and droplet precautions should be taken for all patients with signs or symptoms of COVID-19.

Resident Monitoring and Restrictions:

- Encourage residents to remain in their room. If there are cases in the facility, restrict residents (to the extent possible) to their rooms except for medically necessary purposes.
    - If residents leave their room, they should wear a facemask, perform hand hygiene, limit their movement in the facility, and perform social distancing (stay at least 6 feet away from others).
- Implement protocols for cohorting ill residents with dedicated HCP.

Long-Term Care Facilities Preparedness

Nursing homes and other long-term care facilities can take steps to assess and improve their preparedness for responding to coronavirus disease 2019 (COVID-19). Each facility will need to adapt this checklist to meet its needs and circumstances based on differences among facilities (e.g., patient/resident characteristics, facility size, scope of services, hospital affiliation). This checklist should be used as one tool in developing a comprehensive COVID-19 response plan. Information from state and local health departments, emergency management agencies/authorities, and tribal health authorities should be incorporated into the facility's COVID-19 plan. Comprehensive COVID-19 planning can also help facilities plan for other emergency situations.

- ✓ Limit how germs can enter the facility. Cancel elective procedures, use telemedicine when possible, limit points of entry and manage visitors, screen patients for respiratory symptoms, encourage patient respiratory hygiene using alternatives to facemasks (e.g., tissues to cover cough).
- ✓ Isolate symptomatic patients as soon as possible. Set up separate, well-ventilated triage areas, place patients with suspected or confirmed COVID-19 in private rooms with door closed and private bathroom (as possible), prioritize Airborne Infection Isolation Rooms (AIIRs) for patients undergoing aerosol-generating procedures.
- ✓ Protect healthcare personnel. Emphasize hand hygiene, install barriers to limit contact with patients at triage, cohort COVID-19 patients, limit the numbers of staff providing their care, prioritize respirators and AIIRs for aerosol-generating procedures, implement PPE optimization strategies to extend supplies.

Full CDC Preparedness Checklist: Preparedness Checklist for Nursing Homes and other Long-Term Care Settings

Long Term Care Facility Guidance

Keep COVID-19 from entering your facility:

- The Centers for Medicare and Medicaid Services (CMS) has revised the guidance regarding visitation during the COVID-19 public health emergency. This guidance provides reasonable ways a facility can safely facilitate in-person visitation to help address the psychosocial needs of residents.
- Send messaging out to families and post signs at entrances reminding them of the importance of getting vaccinated.
- Test residents and facility staff, including individuals providing services under arrangement and volunteers, for COVID-19.

- All staff, including individuals providing services under arrangement as well as volunteers, should adhere to the core principles of COVID-19 infection prevention.
- Actively screen all HCP for fever and respiratory symptoms before starting each shift; send them home if they are ill.
- Have residents who must regularly leave the facility for medically necessary purposes (e.g., residents receiving hemodialysis) wear a facemask whenever they leave their room, including for procedures outside of the facility.

Identify infections early:

- Actively screen all residents at least daily for fever and respiratory symptoms; immediately isolate anyone who is symptomatic.
    - Long-term care residents with COVID-19 may not show typical symptoms such as fever or respiratory symptoms. Atypical symptoms may include: new or worsening malaise, new dizziness, diarrhea, or sore throat. Identification of these symptoms should prompt isolation and further evaluation for COVID-19 if it is circulating in the community.
- Notify the health department if: severe respiratory infection, clusters (≥1 resident(s) and/or HCP) of respiratory infection, or individuals with known or suspected COVID-19 are identified.

For updated guidance, please review the DPBH Technical Bulletin website and Nevada's health response website regularly. Email dpbhepi@health.nv.gov with questions.

Prevent spread of COVID-19:

- Vaccinate residents and HCP against COVID-19.
- Enforce social distancing among residents.
- When COVID-19 is reported in the community, implement universal facemask use by all HCP (source control) when they enter the facility;
    - If facemasks are in short supply, they should be prioritized for direct care personnel. All HCP should be reminded to practice social distancing when in break rooms or common areas.
- If COVID-19 is identified in the facility, restrict all residents to their room and have HCP wear all recommended PPE for all resident care, regardless of the presence of symptoms. Refer to strategies for optimizing PPE when shortages exist.
    - This approach is recommended to account for residents who are infected but not manifesting symptoms. Recent experience suggests that a substantial proportion of long-term care residents with COVID-19 do not demonstrate symptoms.
    - When a case is identified, public health can help inform decisions about testing asymptomatic residents on the unit and in the facility.

Identify and manage severe illness:

- Facility performs appropriate monitoring of ill residents (including documentation of pulse oximetry) at least 3 times daily to quickly identify residents who require transfer to a higher level of care.

Actions when an Outbreak is Identified in a Long-Term Care Facility

- All symptomatic individuals, staff or residents, tested or not, MUST be immediately isolated. Exposed and symptomatic staff should self-isolate at home.
- Residents with mild/moderate symptoms should be isolated in a special section of the nursing home.
- Residents who have been fully vaccinated must be tested and quarantined in an event of ongoing transmission within a facility that is not controlled with initial interventions.
- Staff or residents with severe symptoms (difficulty breathing, chest pain, bluish lips...) should be referred to hospitals for critical healthcare and testing.
- All contacts (residents, visitors, family members, other) who could have been exposed to a symptomatic individual, or to an individual who tested positive for COVID-19, must be immediately quarantined – residents

must be moved to a quarantined section of the nursing home. Staff who have been exposed in the facility and are asymptomatic can continue to work, but they must be monitored twice daily for signs and symptoms and use a face covering while in the facility. If symptoms develop, staff must inform employer, and their employer must notify the Office of Public Health Investigations and Epidemiology (OPHIE).

- Asymptomatic residents should be in a separate part of the facility and should be observed to identify any early respiratory symptoms for 10 days since last day of contact.
- No symptomatic person, staff or visitor, should be allowed inside the facility.
- There should be 3 different sections in the facility (4 sections if new admissions are allowed):
    1. Isolation for symptomatic individuals and those who tested positive for COVID-19. Individuals cannot leave this section until they have met the clearance criteria. (Isolation Unit)
    2. Quarantine for contacts who will be quarantined for 10 days. (Quarantine Unit)
    3. General population for all other residents who have no symptoms; were not contacts to any COVID-19 case and did not test positive for COVID-19.
    4. *If new admissions are allowed*, these individuals must be in a separate observation section for 10 days prior to being allowed in the general population. If they receive a positive test, they should be moved to the isolation section immediately.
- Environmental decontamination especially shared surfaces (tables, doorknobs, light switches, remote controls, toilets, etc.) should be cleaned and disinfected at least twice a day with EPA registered chemical.

Additional Actions for Outbreaks in Behavioral Healthcare Facilities

1. Whenever possible, residents in long-term behavioral healthcare facilities should not be isolated in their rooms. Isolation and loneliness may exacerbate depression, anxiety, self-harm, and suicidal ideation.
2. As soon as the outbreak is identified, individualized treatment plans should be updated for all residents with recommendations for use of PPE given the level of risk and current precautions being taken for that individual. Use of a mask is not recommended for individuals on observation for suicidal ideation, plan, or intent or for self-harm.
3. Masks or face coverings should be worn in common areas by all residents for whom this would be safe.
4. Staff at behavioral healthcare facilities for children and adolescents should ensure that children understand the basics of virus transmission and why it is important to follow staff directives about hygiene and social distancing.
5. Special attention should be given to the age and developmental level of children when providing education and directives.
6. Handwashing by children should be supervised to ensure it is completed in a manner consistent with infection control guidelines.
7. Conduct a suicide screen at every contact for those at elevated risk. Use a standardized screen such as the Columbia-Suicide Severity Rating Scale (C-SSRS). Screening takes < 2 minutes and should be done in conversational manner. Considering the current stressful circumstances, broader assessment of suicide risk is indicated.
8. Express concern and ask directly about recent suicidal ideation and behavior. Consider using a risk assessment tool like the Substance Abuse and Mental Health Services Administration Suicide Assessment Five-Step Evaluation and Triage (SAMHSA's SAFE-T) with C-SSRS.
9. In addition to standard risk assessment, assess for the emotional impact of the pandemic on suicide risk. Examples that can escalate risk include: increased social isolation; social conflict for those sheltering together; increased financial concerns or worry about health or vulnerability in self, friends, and family; decreased social support; increased anxiety and fear; disruption of routines and support.
10. Identify protective factors that can be emphasized, such as: Reasons for living (family, hope for the future, children); and deterrents (fear of injury, religious beliefs). Attend to protective factors that may have diminished recently.
11. Inquire about increased access to lethal means (particularly stockpiles of Tylenol or medications)

State and local health authorities may recommend facility-wide testing of patients and staff to identify the severity of the outbreak and to properly implement public health interventions in the facility. All facilities should comply with the request for information and comply with intervention guidelines in this document and given by state and local health authority staff. Specific guidance will be given on a case-by-case basis when additional interventions are necessary.

Resources: Finding the Right Words to Talk with Children and Teens about Coronavirus

Separate Units to Prevent and Contain Transmission of COVID-19 in Congregate Living Facilities

Note: The use of the term "resident" may be replaced with "patient", as applicable.

It is important to implement strategies that help prevent the spread of COVID-19 in skilled nursing facilities; assisted living; residential facilities and other communal living settings including psychiatric and forensic psychiatric hospitals. Placing residents in designated separate units within facilities is proven effective to prevent the spread and contain COVID-19 outbreaks. To the extent possible, each facility should establish at least three separate units:

1. to isolate COVID-19 confirmed cases (Isolation Unit);
2. to quarantine those who could have been exposed to COVID-19 (Quarantine Unit); and
3. a COVID-19-Free Unit for residents that do not have COVID-19 (includes residents that have fully recovered from COVID-19).

The facility must make every effort to provide dedicated staff for each unit. It is mandatory that the facility assigns dedicated staff to the Isolation/Confirmed-COVID-19 Unit.

It is recognized that due to staffing shortages or building design, such as in smaller residential facilities, having three separate units for residents may not be possible. Therefore, it is important to understand the reasons for grouping residents and have a process in place to identify, respond and manage residents with suspected or confirmed COVID-19.

The virus continues to rapidly spread within communities, so facilities must implement plans based on national infection control guidelines such as those of the CDC. The facility plan must be in place prior to COVID-19 cases being identified among residents and/or staff. Items addressed in the plan should include, but are not limited to, rapidly identifying residents with suspected or confirmed COVID-19, **appropriate placement within a unit based on COVID-19 status** (including what to do if facility is near full capacity and several residents have become positive), social distancing, environmental cleaning and disinfection, individual hygiene, facility entry and screening procedures for visitors and staff, use of face masks/face coverings by staff, residents and visitors, and proper use of PPE by caregivers.

The Division of Public and Behavioral Health has developed a template that may be used by residential facilities for groups to help them develop an individualized infection control and prevention plan for their facility or to compare it to a facility's existing plan to see if the major components have been addressed. The use of this template is not a requirement, but may be used as a guide to help a facility develop its own plan: Recommended Infection Prevention and Control Plan for Group Homes Coronavirus Disease 2019 (COVID-19) Response

Confirmed COVID-19 Unit (Isolation Unit)

Residents with **confirmed COVID-19** are residents *who tested positive for COVID-19, either initially or confirmed by Reverse Transcription Polymerase Chain Reaction (RT-PCR).* Residents with confirmed COVID-19 should be placed in this unit whether they have symptoms or do not have symptoms. Caregivers in this unit must use full PPE in accordance with CDC recommendations. Residents must be closely monitored to rapidly detect any new symptoms in residents that did not have symptoms, and to ensure symptoms do not worsen in those that do have symptoms. A resident cannot be moved out of the Confirmed COVID-19 Unit until the CDC criteria for the Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings[1] are met.

Quarantine (Observation) Unit for Residents with Known Exposure to COVID-19

The Quarantine Unit should house only those who were exposed to COVID-19. All residents should be tested for COVID-19 no sooner than 5-7 days from exposure date and should continue to be monitored for the eventual development of symptoms. Residents who test positive by RT-PCR should be transferred to the Confirmed COVID-19 Unit. Residents who test negative must complete the 10-day quarantine period starting from their most recent exposure to COVID-19.

Residents in the Quarantine Unit who develop symptoms consistent with COVID-19 should not be moved and should be isolated in their own single occupant room pending results of COVID-19 RT-PCR testing. If there is a roommate, the

resident with symptoms may only be moved to a single occupant room within the same Quarantine Unit and only if the move can be made without displacing any other residents. The resident's roommate will be considered exposed to COVID-19. If the resident and roommate remain in the same room, put up barriers, distance beds if possible, practice hand hygiene and use full PPE in accordance with CDC recommendations and changed between residents. If any resident tests positive for COVID-19, move the resident to the Confirmed COVID-19 unit. The resident should not be placed in a room with a new admission or be moved to the confirmed COVID-19 unit unless they are confirmed to have COVID-19 by RT-PCR testing.

After identifying a confirmed COVID-19 case (with positive test results) in this Quarantine Unit, all residents and caregivers must be retested for COVID-19. Even if their test results are negative, residents must complete 10 days of quarantine starting from their most recent exposure to this newly identified COVID-19 case.

Newly admitted/readmitted residents with no symptoms of COVID-19 with an undetermined exposure history to COVID-19 should not be placed in the Confirmed COVID-19 Unit or the Quarantine Unit. Depending on the prevalence of COVID-19 in the community, this might include placing the resident in a single-occupant room or in a separate observation area so the resident can be monitored for evidence of COVID-19. Caregivers should wear an N95 or higher-level respirator (or face mask if a respirator is not available), eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face), gloves, and gown when caring for these residents. Residents can be transferred out of the observation area to the main facility if they remain free from fever and without symptoms **for 10 days after their admission**. Testing *at the end* of this period can be considered to increase certainty that the resident is not infected.

Admission/Readmission Scenarios

1) Resident is admitted to your facility from the community setting with no signs and symptoms of COVID-19, and they don't know if they have been exposed to COVID-19 through interactions with other people. In this scenario follow the newly admitted/readmitted resident's precautions.
2) Resident is readmitted to your facility from the hospital after fully recovering from COVID-19. The resident meets the CDC criteria for the Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings and the resident's symptoms have resolved. In this scenario, place the resident in the COVID-19 Free Unit.
3) Resident has COVID-19 (not resolved) and the resident meets the level of care for the facility type for which the resident is being admitted. The facility has the appropriate staffing and PPE to safely accept the resident. In this scenario, the resident is placed in the Confirmed COVID-19 Unit (Isolation Unit).

COVID-19 Free Unit

The COVID-19 Free Unit is reserved only for residents who do not currently have COVID-19 infection; do not have symptoms of COVID-19 and tested negative for COVID-19; and were not exposed to and did not have contact with anyone who has COVID-19. Residents that were suspected or confirmed to have COVID-19 whose Transmission-Based Precautions *have been discontinued* AND *the resident's symptoms have resolved*, may also be placed in this COVID-19 Free Unit.

Identifying residents that belong in the COVID-19 Free Unit could be challenging, especially during outbreaks that include cases among residents and facility staff. Therefore, it is important to obtain a thorough resident history to help determine a resident's placement in a specific unit or single-occupant room, as appropriate. If there is still doubt about where to place a resident within the facility, the facility can request guidance from the Division of Public and Behavioral Health's Office of Public Health Investigations and Epidemiology by email at DPBHHAI@health.nv.gov.

Definition: A COVID-19 suspected case means individuals with COVID-19 signs and symptoms who do not have a COVID-19 test result, and those with a negative test result but who continue to display COVID-19 signs and symptoms.

Resources:

- Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings: https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html

- Infection Control Guidance for Healthcare Professionals about Coronavirus (COVID-19):
- Preparing for COVID-19 in Nursing Homes: https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html

Healthcare Workforce

Reassign HCPs to Needed Areas

Healthcare professionals may have experience that will be useful for patients needing a higher level of care than where they are currently assigned. Hospitals should grant opportunities for these highly skilled staff members to be reassigned to assist in other areas of the hospital or healthcare system to best meet the needs of the current situation. Licensing boards should consider allowing healthcare professionals such as APRNs to advance to full independent practice for the duration of the crisis.

Medical Reserve Corp

During the COVID-19 response, the Nevada Medical Reserve Corp should be called upon to fill vital roles in the healthcare system, including healthcare professionals, behavioral health professionals, and other volunteers with skills and experience that may be helpful for a coordinated response. Volunteers should register at the State Emergency Registry of Volunteers – Nevada (SERV-NV). Medical Reserve Corp is a cadre of medical and non-medical volunteers who are pre-identified, credentialed, trained, background-checked, and ready to be deployed in the case of a disaster. State and local public and private agencies may call upon these volunteers to aid in the response.

Students Going into the Healthcare Field

Students may become a valuable workforce during the COVID-19 crisis. State and local officials should work with the dean of the medical schools in the state to assess how these highly motivated and medically trained students may be used during a crisis. Examples of possible roles they may be used for:

- Telemedicine – Triage calls, assess severity of patient, and direct potentially infected individuals to the resources they need.
- Non-COVID-19 Healthcare – In extreme circumstances and in concurrence with the Dean of their respective medical school, medical students may work under a resident physician in a healthcare setting where COVID-19 is not likely to be present. This will help ease the burden of the other healthcare personnel that can be better used on COVID-19 patients in an intensive care unit or other COVID-19 response needs.
- Prior Certifications – Many medical students may have prior experience and certifications that may be leveraged in a crisis. Examples may include EMT, Paramedic, nurse, physician assistant, etc.
- Student Volunteers – This population may be used in other areas in the community needing additional resources to perform supportive services.

Out of State/Country Reciprocity

As the situation reaches the crisis stage of the COVID-19 response, reciprocity of licensure should be considered for healthcare personnel holding licenses in other states and possibly other countries. In advance of the need, this will require steps to be taken by the licensing boards to ensure the ability to verify credentials and licenses of incoming healthcare personnel. Licensing boards for healthcare professionals should extend temporary licenses to decrease the amount of time needed to get workforce resources in place. Other state offices should be consulted to aid in vetting licenses and education from other countries. The Governor's Office for New Americans and others might have resources to aid in the process of vetting foreign credentialed volunteers.

Strategies to Mitigate Healthcare Personnel Staffing Shortages

During a CSC response, the use of healthcare resources (i.e., space, staff, and supplies) will most likely be limited to do the greatest good for the greatest number of people. Staff may be unavailable or unable to adequately care for volume of patients even with extension techniques (brief deferrals of non-emergency care, supervising broader groups of patients, etc.). Hospitals may need to adjust staffing levels and staffing types to accommodate the patient volume. As the COVID-19 pandemic progresses, staffing shortages will likely occur due to HCP exposures, illness, or need to care for family members at home. Healthcare facilities must be prepared for potential staffing shortages and have plans and processes in place to mitigate them, including considerations for permitting HCP to return to work without meeting all return to work criteria above. Refer to your local emergency manager for further guidance on acquiring potential additional staffing using voluntary

health care providers. As part of this, asymptomatic HCP with a recognized COVID-19 exposure might be permitted to work in a crisis capacity strategy to address staffing shortages if they wear a facemask for source control for 10 days after the exposure.

Considerations for EMS Providers to Work in a Hospital Setting to Increase Staffing Resources

It should be considered for hospitals to use or employ paramedics, AEMTs and EMTs to work in the hospital setting to increase available staffing resource options. Paramedics, AEMTs and EMTs may function within the standardized scope of practice or Nevada practice guidelines under medical direction.

Increase EMS Provider Expired Certificate Acceptance from 3 Years to 5 Years

If an emergency medical technician, advanced emergency medical technician or paramedic is unable to renew his or her certificate when required, he or she must, if he or she wishes to renew the certificate, submit a request for a late renewal on a form provided by the Division of Public and Behavioral Health (Division). Within the scope of the current COVID-19 pandemic, activation of the Nevada Crisis Standards of Care Plan, and this document, the Division shall accept an application for late renewal if **less than 5 years** have elapsed from the date of expiration of the certificate. The individual must meet all other requirements for the recertification, including the required continuing medical education for the certification cycle.

Options to Utilize EMS Providers for Community Paramedicine Services

Hospitals or EMS agencies are authorized to hire, train and allow paramedics, AEMTs and EMTs to perform community paramedicine services for the remote monitoring of sub-acute or recovering patients who no longer require inpatient services. The hospital or EMS agency is required to develop a training program and ensure employee competency in community paramedicine services. For EMS agencies in Clark County, a certificate of competency must be submitted to the Southern Nevada Health District, EMS and Trauma System. For EMS agencies outside of Clark County and all hospitals, a certificate of competency must be submitted to the Division of Public and Behavioral Health, EMS Office.

Hospitals are further authorized to utilize paramedics, AEMTs and EMTs employed by an EMS agency to perform community paramedicine services for the remote monitoring of sub-acute or recovering patients who no longer require inpatient services. A hospital utilizing an EMS agency to perform community paramedicine services may request a confirmation of training and competency from the agency, or agency's designee. Agencies employing paramedics, AEMTs and EMTs for performance of such community paramedicine services are required to inform any Exclusive Operating/Franchise holders of their activity in writing.

Options for Reverse Transcription-Polymerase Chain Reaction (RT-PCR) Test Sample Collection

Hospitals are authorized to train and allow Certified Nursing Assistants (CNAs), Phlebotomists, Paramedics, AEMTs and EMTs to perform RT-PCR nasopharyngeal test sample collection processes. The hospital is required to develop a training program and ensure employee competency in the procedure.

Hospitals are authorized to utilize paramedics, AEMTs and EMTs employed by an agency to perform RT-PCR nasopharyngeal test sample collection processes. Agencies employing paramedics, AEMTs and EMTs are required to develop a training program, approved by the Division of Public and Behavioral Health Emergency Medical Services Program, and ensure employee competency in the procedure. The hospital may request a confirmation of training and competency from the agency, or agency's designee.

Healthcare Workforce Mental Health and Well-Being

Throughout the COVID-19 pandemic, empirical research has consistently demonstrated that healthcare workers are reporting unprecedented levels of stress, anxiety, and depression in the face of a novel virus; high infection and mortality rates; and PPE shortages. Death by suicide has been reported among emergency medical personnel in areas of the US with high rates of infection. Efforts must be made to identify early those who may need to seek the assistance of a healthcare provider warmline, agency peer supporter, Employee Assistance Program (EAP), and/or longer-term behavioral health support.

Prevention and development of healthcare provider resilience is the best line of defense, including encouraging employees to attend to their own physical and mental health and allowing time for self-care.

Resources:

- Psychological PPE
- Nevada HealthCARES Warmline for health care professionals
- Nevada Physician Wellness Coalition
- COVID Coach Mobile App
- SAMHSA Disaster Distress Helpline
- Northern Nevada Peer Support Network
- Nevada Resilience Project

Behavioral Health

The psychological components of infectious disease and pandemic events will be among the most prevalent, enduring health consequences. Specific behavioral health (BH) response strategies are needed, and behavioral health professionals may be called upon to aid in the response to a crisis. It may become necessary to call upon volunteers in the community to assist with behavioral health resources.

Main Issues Identified

- Due to the potential for significant mortality and morbidity related to COVID-19, an increase in psychological morbidity will occur. Psychological distress and increased mental health issues will quickly exceed capacity of traditional mental health service delivery approaches and capacity. Much of the traditional mental health services have converted to the primary provision of mental health services using telehealth to limit the potential exposure to COVID-19. Telehealth assessment and intervention are encouraged whenever possible to limit the use of scarce PPE and to reduce the potential for exposure in the community.
- While Psychological First Aid and Crisis Counseling may be of benefit to many, more intensive behavioral health services may be needed. Allocation of all available behavioral health services must be conducted based upon individual need and in accordance with the provision of services in the least restrictive environment.
- Healthcare workers and first responders are at increased risk for mental health consequences during a pandemic event. Strategies such as peer support and wellness monitoring should be offered to first responders and medical providers to reduce the impacts of exposure to difficult, traumatic experiences.
- Public health containment strategies require behavioral adherence by the general public and the healthcare workforce. Clear, timely, accurate information related to how to adhere to public health recommendations must accompany changing requirements regarding mitigation strategies. Communications must describe evidence-based data as well as address concerns raising from unsupported claims or known misinformation circulating in public.
- As COVID-19 evolves, various at-risk groups, in addition to traditional special populations, will include those experiencing traumatic loss and complicated bereavement for those coping with seriously ill family/self/friends, special health care conditions, and those experiencing lasting and debilitating health consequences from COVID-19. Unique to this pandemic is the stress on families due to the prolonged period of teleworking parents, balancing childcare and homeschooling; this and other factors may lead to an increase in child abuse/neglect. Social and physical isolation may contribute to increased anxiety, depression and feelings of hopelessness/helplessness, disorientation, and increase the risk for substance use. Customized strategies are needed with different populations and must be based upon needs and access to adequate behavioral health resources.
- Due to fear of contracting COVID-19 in medical offices and hospital settings, people may delay seeking care for their psychiatric and general health care conditions. They may also delay seeking necessary health care for their dependents and other family members. Such delays increase the risk of further deterioration of those health conditions and consequently lead to more emergency room visits with more critically ill individuals.
- Delays in receiving elective procedures and other routine health care interventions necessitated by reallocation of health care resources will cause additional psychological stress on individuals with preexistent health conditions.

Considerations for Behavioral Health

During the COVID-19 response, there are 3 focus areas that must be considered for behavioral health: the general public, healthcare professionals, and the continuation of care for persons with serious mental illnesses and substance dependency. The Medical Advisory Team (MAT) should develop a response around the following:

MAT Considerations for **Behavioral Health**	1. Public messaging and recommendations for healthcare and behavioral health practitioners regarding the behavioral impact on the general population. 2. Behavioral health impact on the responder and healthcare provider community. 3. Continuation of care for persons with serious mental illnesses and individuals receiving treatment (including medication) for substance dependency.

Behavioral Health Impact on the General Population

During a CSC incident, while health care facilities are experiencing severe medical surge conditions, the need for behavioral health care strategies becomes a critical adjunct to patients requiring medical treatment for physical illness or injury, as well as for primary care assessment and treatment of behavioral health conditions. Many people may require behavioral health services to manage grief, adjustment reactions, and post-traumatic stress symptoms. The impact of a prolonged crisis will result in a substantial range of variability in the ability of people to respond and function during the crisis. Community resilience strategies that encourage family and neighborhood outreach may be beneficial in enhancing social support systems and reducing stress associated with an emergency incident. Health care organizations have a unique opportunity to help prevent suicide. Conduct a suicide screen at every contact. Use a standardized screening tool such as the C-SSRS. Screening takes < 2 minutes and should be done in conversational manner. Asking directly about suicide can bring relief and hope during these times of increased isolation and overwhelm. This will also provide the opportunity to connect to appropriate resources for support.

Behavioral Health and Pediatric Populations

Children are an especially vulnerable population to mental health risks following a disaster. It is important to recognize risk factors for presentation of psychological distress. During or immediately following a disaster, children may exhibit a range of adjustment difficulties. The COVID-19 pandemic should be conceptualized as an Adverse Childhood Experience (ACE), a traumatic event, to which all children have been exposed.

For many children, reactions to disasters are brief and represent normal reactions to abnormal events. Normal symptom presentations in children after a disaster or traumatic event include anxiety about their own safety and the safety of family and close friends; sadness, grief, and anger; feeling frightened, confused, and insecure; and behavior problems. Younger children may return to earlier behavior patterns (e.g., bedwetting, sleep problems, separation anxiety). Toddlers and young children may re-enact elements of the traumatic event through play. Teenagers may engage in risky behaviors or drug/alcohol use.

A smaller number of children are at risk for more enduring psychological distress or persistent traumatic stress reactions. Common markers of potential mental health-related issues in children following a disaster or traumatic event include:

- Refusal to return to school and clinging behavior;
- Persistent fears related to the disaster;
- Sleep disturbances such as nightmares, screaming during sleep, and bed wetting;
- Loss of concentration and irritability;

- Jumpiness or startling easily;
- Behavior problems, such as misbehaving in ways that are not typical for the child;
- Physical complaints with no physical cause; and
- Withdrawal from family and friends, sadness, listlessness, decreased activity.

The National Institute on Mental Health developed the Ask Suicide-Screening Questions (NIMH ASQ), four questions in 20 seconds to identify people at risk of suicide. In a NIMH study, a "yes" response to one or more questions identified 97% of youth aged 10 to 21 at risk of suicide:

1. In the past few weeks, have you wished you were dead?
2. In the past few weeks, have you felt that you or your family would be better off if you were dead?
3. In the past week, have you been having thoughts about killing yourself?
4. Have you ever tried to kill yourself?

If the individual answers "yes," to a Health Care Provider, then a potential risk is identified. They then require a brief suicide safety assessment to determine next steps.

Healthcare providers should inquire about children's symptoms and adjustment and assess for any ongoing stressors that may complicate recovery. Strategies to address stress reactions include helping children to understand what has happened; providing Psychological First Aid; protecting children from excessive media reports related to the pandemic; and promoting resiliency. If multiple concerns or risk factors for ongoing traumatic stress reaction are present, healthcare providers should arrange a referral for further psychological assessment and/or mental health support.

Behavioral Health Impact on Responders and Medical Providers

Behavioral health strategies should consider the unique impacts and behavioral health consequences of catastrophic public health emergencies on responders and healthcare providers. Responders and healthcare providers may be especially prone to post traumatic stress and other psychosocial impacts. Strategies for addressing the behavioral health needs of these groups should consider the identification, monitoring, and intervention systems tailored toward stress reduction, stress management, and mitigation of posttraumatic stress disorder. Peer-to-peer support, counseling, and other behavioral health support services, such as Critical Incident Stress Management (CISM), may be useful for responders and providers.

Impact on the Seriously Mentally Ill Population and Continuation of Care

People with serious mental illness (SMI) will likely be among disaster victims, including the injured or ill, or experience emotional crises related to the disaster. Many people require ongoing behavioral health treatment or services due to SMI or other behavioral health conditions. Ongoing treatment or services may be disrupted during a disaster, leaving people with difficulties in managing their conditions or obtaining needed prescription medications. As behavioral health providers and social workers address the needs of disaster victims, including palliative and comfort care patients, there will be an impact on the overall availability of resources for behavioral healthcare within the state. Adaptations for clinical management for suicidal clients should include: Identify ways to increase safety short of sending client to the Emergency Department (ED); and Develop a safety plan that will help clients manage their suicide risk on their own.

Steps in developing a safety plan:

- Step 1: Identify warning signs that a suicide crisis is developing.
- Step 2: Identify internal coping skills that can distract from suicidal thoughts and de-escalate crises, considering limited access to resources.
- Step 3: Identify social contacts that can help distract from a suicidal crisis. Many social distraction options have been limited by social distancing. Focus on virtual activities (virtual travel tours, opera, theater performances or concerts, museums or zoos; "meet-up" programs, like online painting, cooking, or karaoke; virtual hang-outs with friends via Skype/FaceTime/Zoom to watch movies or play board games; online support groups/forums or virtual Alcoholics Anonymous or Narcotics Anonymous (AA/NA) meetings) and current social environment (i.e.,

who the client is living with). Virtual contact may "feel" different or mean different things to your client. Discuss types of remote contact that best suit your client's emotional needs. For example, some prefer phone calls or texts for disclosure of distress but video chats for distraction, etc.

- Step 4: Identify social supports who can help handle a suicidal crisis. Determine who is currently available to help the client manage the suicidal crisis. If the client is currently living with others, determine together with the client who is the best source of support and who the client feels comfortable turning to. Seek permission to contact and initiate contact with one or two key people who will provide support to make sure they are willing to do so and have some tips on how to help the client. This takes time initially but will help the caregiver and preserve clinician time later. Be specific when listing adaptive options (talking to a good friend privately vs. exposure to more general social media, which may be upsetting).
- Step 5: Identify professional emergency contacts that are currently available. Provide the National Suicide Prevention Lifeline (800 273-8255); suicidepreventionlifeline.org) and crisis text (text "Got5" to 741741; crisistextline.org) information.
- Step 6: Plan for reducing access to lethal means and review/revise any existing plan that might need updating in the current situation. Discuss increased access to lethal means (particularly stockpiles of Tylenol or other medications) and if there is someone with whom the client is living who can help secure lethal means. Ensure firearms, if present, are stored safely or removed.

Tips for plan development specific to COVID-19 response:

- Review and revise existing safety plans to make sure social contact information on steps 3-5 is electronic rather than in person. If in person, make sure they are currently living with the client. Remember, "Contact information" can include telephone numbers, video chat, social media, game consoles, internet forums, etc.
- Make provisions for increased clinical contact (even brief check ins) until risk deescalates.
- Identify individuals in the client's current environment to help monitor the client's suicidal thoughts and behaviors in person or remotely; seek permission to have direct contact with those individuals.
- If risk becomes imminent and cannot be managed remotely, arrange for the client to go to the nearest Comprehensive Psychiatric Emergency Program (CPEP) (if possible) or medical ED (if a CPEP is not available).
- If risk is imminent, stay on the phone with the client until other care is present.

Behavioral Health and Public Information

Incident specific public communication strategies should be developed and disseminated to help people manage stress, clarify the incident situation, and direct listeners and viewers to additional resources as necessary. During CSC, the MAT should fully integrate behavioral health content experts in decision making and response implementation. This is especially important during situations where:

- A transition must be made in the fair and just allocation of resources, and care when circumstances will not allow for the optimal level of care for all;
- There are situations resulting in large-scale incapacitation or death of health care workers or first responders;
- Events produce an extremely large numbers of fatalities;
- Events result in a potential long-term or unknown health consequences;
- There are deaths or incapacity of key leaders or decision-makers; and
- There are events that evoke extreme emotions, such as terrorism or violence that impacts the most vulnerable populations, e.g. children.

Mental Health Triage

Research indicates that between 30 and 40 percent of people directly impacted by a major disaster are at risk of developing new, clinically diagnosable mental illness, such as depression or post-traumatic stress disorder. Early triage, intervention, and referral to services can reduce the risk of mental health disorders in disaster victims. An important component of managing medical surge following a major disaster is the ability to identify people at high risk for

development of mental health conditions and managing the demand for mental health services by people who are experiencing a mental health crisis.

One strategy that may be considered by the MAT is the recommendation of a mental health triage system such as Fast Mental Health Triage Tool (FMHT), and the Alsept-Price Mental Health Scale (APMHS). Mental health triage systems are useful in identifying individuals experiencing a mental health crisis or at risk for chronic mental health disorders and triaging them to the correct mental health services.

Whenever possible, alternative care sites should be made available to divert behavioral health patients from emergency rooms for triage evaluation. Triage for behavioral health emergencies must prioritize patient and provider safety while also ensuring individuals are offered needed care. Inpatient psychiatric admissions should be reserved for individuals who require the highest level of care to achieve safety and stabilization. Outpatient and residential services should be made available for individuals who need to be engaged in care but do not meet criteria for inpatient hospitalization. Emergency room boarding for behavioral health patients should be avoided whenever possible to limit patient exposure to COVID-19. Triage assessments for behavioral health patients arriving in the emergency room may be conducted via telehealth to provide decision support to the attending provider. Use of crisis behavioral health holds should be reserved for individuals who meet criteria for such hold and for only the duration the criteria for such a hold is met.

Psychological First Aid

Psychological First Aid is designed to reduce the initial distress caused by a traumatic event and to foster short- and long-term adaptive functioning and coping. Psychological First Aid is based on the understanding that individuals affected by traumatic events will experience a wide range of initial reactions that may cause enough distress to interfere with coping. It is designed to be used in the immediate aftermath of a traumatic event. Its basic objectives are to:

- establish connection in a compassionate and non-intrusive manner,
- enhance immediate and ongoing safety,
- provide physical and emotional comfort,
- calm and orient emotionally overwhelmed and distraught survivors,
- identify the survivor's immediate needs and concerns,
- offer practical assistance to help survivors address immediate needs,
- connect survivors to social support networks and family,
- support adaptive coping,
- provide information, be clear about availability, and link survivor to another team or recovery support system.

Psychological First Aid Counselors are available in Southern Nevada by contacting the Southern Nevada Regional Behavioral Health Coordinator; and a similar resource, Crisis Counselors, are available in Northern and Rural Nevada by contacting the Statewide Behavioral Health Coordinator.

Resources:

- Tips for Social Distancing, Quarantine, And Isolation During an Infectious Disease Outbreak
- Managing Bereavement around COVID-19

COVID-19 Disease Investigation and Contact Tracing Update

Purpose

To provide a strategy for the State of Nevada and Local Health Authorities (LHAs) to prioritize COVID-19 disease investigation and contact tracing efforts.

Background:

As the burden of COVID-19 continues to rise, the ability for public health to maintain current disease investigation and contact tracing efforts diminishes. The high disease burden, in effect, renders disease investigation and contact tracing ineffective. State and LHAs across Nevada do not have the resources to complete timely case investigation and contact tracing for all positive cases of COVID-19. Therefore, the intervention of isolation of cases and quarantine of contacts becomes significantly less meaningful. To focus our limited public health resources to be the most impactful, our overall approach and strategy must be modified in a targeted manner.

Abbreviated Case Investigation and Prioritization of Cases:

The Nevada Department of Health and Human Services (DHHS) approves condensed data collection during case interview. Reducing the number of variables collected during the interview will shorten the amount of staff time required for each case. Each county can decide how to best implement these guidelines in their county.

If your jurisdiction is unable to get to case investigation for all individuals, an NBS/TriSano investigation should be opened from a lab report and automatically closed out.[1] The lab report should list the minimum required variables. In cases where the lab report does not list all minimum variables, these variables should be marked as unknown. If other information is available in the lab report or available medical records, the information available should be added to the NBS/TriSano investigation. The top priority is that cases are notified if they have a positive lab result so they can isolate. In 95%+ of situations, by the time a disease investigator contacts a positive case, they have already been informed of their result. Health departments should do their best to ensure that all individuals are informed of their positive result within 24 hours of the lab report, either through the ordering medical provider or a health department professional. The abbreviated case variables listed below have been recommended and approved by the Centers for Disease Control and Prevention (CDC).[2]

The minimum variables to be included in investigation are as follows (Update these variables with information when it is provided on lab report)**:**

- Name
- DOB
- Race
- Ethnicity
- Sex at Birth
- County
- Specimen Collection Date

[1] NBS is the lab data system the State, outside of Southern Nevada Health District (SNHD) uses. TriSano is SNHD's lab system.
[2] NNDSS Modernization Initiative, CDC, Updated December 2020: https://www.cdc.gov/nmi/news.html

If case investigation can be performed, these variables should be obtained:

- Tribal Affiliation (Y/N/Unk)
    - Tribe Name
- SOGI Variables (sex, gender, sexual orientation)
- Symptoms (Y/N)
    - Symptom Onset Date
    - Symptom Resolution Date (or indicate unresolved)
- Test Date
- Isolation Period
- Living with comorbidities (Y/N)
- Pregnant (Y/N/Unk/NA)
- Hospitalization (Y/N/Unk) – *Hospitalized for longer than 24 hours*
    - Date of Admission
    - Date of Discharge
- Did this person die as a result of COVID-19? (Y/N/Unk)*
    - Date of Death
- Employment information
    - First responder (Y/N)
    - School Employee or attendee (Y/N)
        - Student information
    - Health care worker (Y/N)
    - Did you notify your school/work? (Y/N)
- Part of outbreak (Y/N/Unk)
    - Outbreak Name/Code
- (When vaccine is available) – Did you receive the COVID-19 Vaccine? (Y/N/Unk)
    - If yes, 1 dose or 2?

Optional (If time and case volume permit):

- Close contacts – *See contact tracing details below*
- Infection Source – if known (exposure that can be linked to case, example: skilled nursing facility, community gathering, household spread, etc.)
- Wrap around services (social service needs if applicable)
- Comments

*Nevada COVID-19 Death Definition[3]

In addition to the above guidance, the CDC recently published guidance on prioritization of case investigations during times when disease burden is high.[4] According to CDC, LHAs experiencing a surge or crisis situations around COVID-19 **should prioritize case investigation interviews to people who tested positive for, or were diagnosed with, COVID-19 in the past 6 days (based on specimen collection date or symptom onset, if known). In some jurisdictions it may also be necessary to further prioritize based upon the unique needs and demands of that jurisdiction.**

[3] Nevada COVID-19 Death Definition:
http://dpbh.nv.gov/uploadedFiles/dpbhnvgov/content/Programs/OPHIE/Docs/COVID-Death-Definition-10-19-20.pdf
[4] CDC Guidance: Prioritizing Case Investigations and Contact Tracing for COVID-19 in High Burden Jurisdictions, Updated 11.23.20, https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-lan/prioritization.html

People diagnosed with COVID-19 should be strongly encouraged to notify all their household contacts:

- to immediately self-quarantine; and
- to seek additional guidance from their local health department or CDC's COVID-19 website (LHAs may choose to provide their own recommendations here)[5]

As the burden of disease decreases and resources allow, health departments should expand case investigation interviews to people with positive COVID-19 test specimens collected in the past 14 days.

Per CDC Guidance, if more than 14 days have elapsed since specimen collection, case investigation and contact tracing should not be pursued unless there are unique circumstances associated with the person tested (e.g., part of large outbreak associated with congregate living or high-density workplace or work in a health care setting).

Contact Tracing Prioritization:

In addition to prioritizing case investigation interviews as needed based on public health resources, CDC also recommends prioritization of contact tracing. Public health should focus their contact tracing efforts on:

- household contacts exposed in the past 6 days, and
- people living, working, or visiting congregate living facilities, high density workplaces or other settings (or events) with potential extensive transmission.

As resources allow, health departments should expand contact tracing for people outside the household who:

- are at increased risk for severe illness (older adults, people with underlying medical conditions, etc.); or
- are part of a cluster; or
- were exposed to COVID-19 within the past 6 days.

Updated Quarantine Period for Contacts:

On September 18, 2021 the CDC updated quarantine guidance for contacts of people who tested positive for COVID-19. The new guidelines allow individuals who have come in contact with someone infected with COVID-19 to resume normal activity after 10 days with no symptoms, 7 days if they tested negative starting on day 5 of the quarantine and have no symptoms or people who are fully vaccinated do not need to quarantine unless symptomatic. This includes, but is not limited to, at home quarantine, in a hotel or dormitory room, or in a group quarantine facility. The individual should continue to self-monitor for symptoms for 14 days. In the case symptoms develop during these 14 days, the person should either get (re)tested or assume they are a probable case and isolate for 10 days from symptom onset. The Technical Bulletin for overall quarantine guidance can be found here.[6]

Due to resource restraints and focusing State and LHA resources on disease investigation and contact tracing, DHHS and LHAs will not be responsible for providing proof of negative test result for contacts to end their quarantine at 7 days. If a proof of a result is required by a school or employer to stop quarantine before 10 days, it is the responsibility of the individual tested to obtain a copy of the result from their medical provider or the testing location.

Electronic Case Investigation and Contact Tracing:

Given the continued rise in COVID-19 disease burden and the steep growth rate, it is unclear when Nevada will reach the peak of the current wave. With both the holiday season upon us and colder weather people will naturally congregate indoors and participate in activities of high risk of COVID-19 transmission. These factors coupled with just entering the viral respiratory season, which extends through the Spring of 2021, is cause for concern of a continued steep increase in positive cases.

[5] CDC, When to Quarantine, Updated December 4, 2020: https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html#:~:text=People%20who%20have%20been%20in,do%20not%20develop%20symptoms%20again.
[6] DPBH Technical Bulletin, Updated Quarantine Guidance, December2, 2020: http://dpbh.nv.gov/uploadedFiles/dpbhnvgov/content/Resources/TechBull-Updated-CDC-Quarantine-12-02-2020.pdf

Many Nevada jurisdictions will still not have adequate resources for disease investigation and contact tracing even with implementation of prioritization and abbreviated case interviews. In response, DHHS is working to develop an online disease investigation questionnaire that each jurisdiction can choose to utilize as needed to suit their unique needs and circumstances. This tool will allow cases to enter in their own case interview and contact ascertainment. This is in the early building stages and more information will be forthcoming as progress is made.

COVID Trace

Another option to lessen the burden on public health for contact tracing is the COVID Trace app.[7] The application empowers individuals to better take control of their own health and exposures. COVID Trace is a contact tracing mobile app developed by Nevada DHHS that uses a technology called the Exposure Notifications System from Google and Apple. The app exchanges anonymous information with other phones in your vicinity and can notify people if they have come in contact with someone who has tested positive for COVID-19. The app uses Bluetooth to exchange random codes with nearby phones. Every day, it checks a list of random codes from people who tell the app they tested positive. If it finds codes that match, the app notifies contacts that have been exposed and explains what to do next.

Conclusion

The COVID-19 situation is rapidly evolving and guidance from the CDC changes on a regular basis. This guidance is subject to change as the situation evolves and additional knowledge is garnered about COVID-19 transmission. Check the CDC website and the Nevada Health Response website regularly for updated guidance. [8,9] Email dpbhepi@health.nv.gov with questions.

[7] COVID Trace Website: https://nvhealthresponse.nv.gov/covidtrace/
[8] CDC, COVID Website: https://www.cdc.gov/coronavirus/2019-ncov/index.html
[9] NV Health Response Website: https://nvhealthresponse.nv.gov/

Laboratory Testing

Increased community level COVID-19 transmission continues to occur both nationally and in Nevada. The increased burden of COVID-19 within Nevada has increased the demands on laboratory resources. This increased demand results in extended turnaround times for laboratory results which negatively impacts mitigation efforts. CDC recommends the following consideration for laboratory testing decisions:

- People who have symptoms of COVID-19
- People who have had close contact (within 6 feet of an infected person for a total of 15 minutes or more) with someone with confirmed COVID-19.
- People who have been asked or referred to get testing by their healthcare provider, local or state public health department.

According to CDC, not everyone needs to be tested. If you do get tested, you should self-quarantine/isolate at home pending test results and follow the advice of your health are provider or public health professional. CDC's testing guidance can be found here.

All Skilled Nursing Residents and Staff to be Tested for COVID-19

Nationwide, skilled nursing facilities (SNFs) have been severely impacted by COVID-19, with outbreaks causing high rates of infection, morbidity, and mortality. The vulnerable nature of the nursing home population, combined with the inherent risks of congregate living in a skilled nursing setting, requires aggressive efforts to limit COVID-19 exposure and prevent the spread of COVID-19 within nursing homes and beyond into the community. The information gleaned from statewide testing of all nursing facility residents and staff will enable health officials to track the disease, businesses to improve safety, and individuals to care for their own well-being.

All Nevada SNFs have implemented testing strategies in accordance with CMS guidelines based on the county level transmission. Results are reported to the Nevada Department of Health and Human Services and appropriate COVID-19 mitigation efforts are implemented.

Testing Framework for Inmates and Staff at Nevada Department of Corrections

The Nevada Department of Corrections (NDOC), in partnership with the Nevada State Public Health Laboratory (NSPHL) and the Nevada Department of Health and Human Services (DHHS), has been performing testing of all inmates and facility staff for COVID-19. NDOC facility staff provide essential services and testing them is an important preventative step to ensure asymptomatic transmission is not occurring from staff to inmates. In addition, the ability to test all inmates is critical in identification of positive cases and allows for appropriate prevention measures to be implemented in order to interrupt further disease transmission. This widescale testing plan is a crucial step in protecting the health and safety of inmates, facility staff and communities at large.

Criteria for Return to Work for Healthcare Personnel with SARS-CoV-2 Infection

Who this is for: Occupational health programs and public health officials making decisions about return to work for healthcare personnel (HCP) with confirmed SARS-CoV-2 infection, or who have suspected SARS-CoV-2 infection (e.g., developed symptoms of COVID-19) **but were never tested for SARS-CoV-2**.

HCP with symptoms of COVID-19 should be prioritized for viral testing with approved nucleic acid or antigen detection assays. When a clinician decides that testing a person for SARS-CoV-2 is indicated, negative results from at least one FDA Emergency Use Authorized (EUA) COVID-19 molecular viral assay following intended use guidelines for detection of SARS-CoV-2 RNA indicates that the person most likely does not have an active SARS-CoV-2 infection at the time the sample was collected. A second test for SARS-CoV-2 RNA may be performed at the discretion of the evaluating healthcare provider, particularly when a higher level of clinical suspicion for SARS-CoV-2 infection exists. For HCP who were suspected of having COVID-19 and had it ruled out, either with at least one negative test or a clinical decision that COVID-19 is not suspected and testing is not indicated, then return to work decisions should be based on other suspected or confirmed diagnoses.

Decisions about return to work for HCP with SARS-CoV-2 infection should be made in the context of local circumstances. In general, a symptom-based strategy should be used as described below. The time period used depends on the HCP's severity of illness and if they are severely immunocompromised.

A test-based strategy is no longer recommended (except as noted below) because, in the majority of cases, it results in excluding from work HCP who continue to shed detectable SARS-CoV-2 RNA but are no longer infectious.

Other Resources:

For guidance about assessment of risk and application of work restrictions for asymptomatic HCP with potential exposure to patients, visitors, or other HCP with confirmed COVID-19, refer to the Interim Guidance for Managing Healthcare Personnel with COVID-19 Infection or Exposure.

For guidance concerning Point of Care (POC) COVID-19 antigen tests in Nevada, refer to the COVID-19 Point of Care Antigen Testing Technical Bulletin.

Return to Work Criteria for HCP with SARS-CoV-2 Infection

Symptom-based strategy for determining when HCP can return to work.

HCP with mild to moderate illness who are not severely immunocompromised:

- At least 10 days have passed *since symptoms first appeared* **and**
- At least 24 hours have passed *since last* fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved

Note: HCP who are **not severely immunocompromised** and were **asymptomatic** throughout their infection may return to work when at least 10 days have passed since the date of their first positive viral diagnostic test.

HCP with severe to critical illness or who are severely immunocompromised[1]:

- At least 10 days and up to 20 days have passed *since symptoms first appeared*
- At least 24 hours have passed *since last* fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved
- Consider consultation with infection control experts

Note: HCP who are **severely immunocompromised** but who were **asymptomatic** throughout their infection may return to work when at least 10 days and up to 20 days have passed since the date of their first positive viral diagnostic test.

As described in the CDC Interim Guidance, an estimated 95% of severely or critically ill patients, including some with severe immunocompromise, no longer had replication-competent virus 15 days after onset of symptoms; no patient had

replication-competent virus more than 20 days after onset of symptoms. The exact criteria that determine which HCP will shed replication-competent virus for longer periods are not known. Disease severity factors and the presence of immunocompromising conditions should be considered in determining the appropriate duration for specific HCP. For example, HCP with characteristics of severe illness may be most appropriately managed with at least 15 days before return to work.

Test-Based Strategy for Determining when HCP Can Return to Work.

In some instances, a test-based strategy could be considered to allow HCP to return to work earlier than if the symptom-based strategy were used. However, as described in the Interim Guidance, many individuals will have prolonged viral shedding, limiting the utility of this approach. A test-based strategy could also be considered for some HCP (e.g., those who are severely immunocompromised) in consultation with local infectious diseases experts if concerns exist for the HCP being infectious for more than 20 days.

The criteria for the test-based strategy are:

HCP who are symptomatic:

- Resolution of fever without the use of fever-reducing medications **and**
- Improvement in symptoms (e.g., cough, shortness of breath), **and**
- Results are negative from at least two consecutive respiratory specimens collected ≥24 hours apart (total of two negative specimens) tested using an FDA-authorized molecular viral assay to detect SARS-CoV-2 RNA. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus (2019-nCoV).

HCP who are not symptomatic:

- Results are negative from at least two consecutive respiratory specimens collected ≥24 hours apart (total of two negative specimens) tested using an FDA-authorized molecular viral assay to detect SARS-CoV-2 RNA. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus (2019-nCoV).

Return to Work Practices and Work Restrictions

After returning to work, HCP should:

- Wear a facemask for source control at all times while in the healthcare facility until all symptoms are completely resolved or at baseline. A facemask instead of a cloth face covering should be used by these HCP for source control during this time period while in the facility. After this time period, these HCP should revert to their facility policy regarding universal source control during the pandemic.
    - A facemask for source control does not replace the need to wear an N95 or equivalent or higher-level respirator (or other recommended PPE) when indicated, including when caring for patients with suspected or confirmed SARS-CoV-2 infection.
- Self-monitor for symptoms and seek re-evaluation from occupational health if symptoms recur or worsen.

Strategies to Mitigate Healthcare Personnel Staffing Shortages

Maintaining appropriate staffing in healthcare facilities is essential to providing a safe work environment for HCP and safe patient care. As the COVID-19 pandemic progresses, staffing shortages will likely occur due to HCP exposures, illness, or need to care for family members at home. Healthcare facilities must be prepared for potential staffing shortages and have plans and processes in place to mitigate them, including considerations for permitting HCP to return to work without meeting all return to work criteria above. Refer to the *Strategies to Mitigate Healthcare Personnel Staffing Shortages* document for information.

Hospital Worker COVID-19 Testing Prioritization

The Nevada Division of Public and Behavioral Health (DPBH) and Nevada Division of Emergency Management (DEM), in coordination with the Nevada State Public Health Laboratory (NSPHL) and the Southern Nevada Public Health Laboratory (SNPHL), have established a system to identify hospital worker COVID-19 test samples for priority sample processing to help preserve valuable hospital staffing resources in Nevada.

This prioritization will ensure those individuals providing essential hospital duties within Nevada have the ability to receive COVID-19 test results in an expeditious manner; allowing for early detection and rapid decision support regarding self-isolation or quarantine. This will support preventing the spread of infection from asymptomatic and pre-symptomatic individuals; and will conserve the capacity and capability of the hospital system to serve the citizens and visitors to Nevada. It is therefore strongly advised for all laboratories processing COVID-19 samples to adopt this procedure immediately.

Hospital workers requesting prioritized testing must present their work credentials identifying them as a hospital worker per the above guidance.

COVID-19 test collection sites:
If the individual has identified as a hospital worker with the appropriate credentials, the initials FR must be written in large letters (at least 2" high) with a black Sharpie pen on the outside of the collection bag. This will notify the laboratories of a priority sample for processing before other samples in the batch.

NOTE: This priority is currently only available through the NSPHL and SNPHL sites; however it is highly recommended for all commercial labs to adopt this agreement as listed above. Collection sites should utilize NSPHL and SNPHL whenever possible for hospital worker prioritization until it can be confirmed that all other commercial labs processing Nevada COVID-19 test samples can accommodate this request. Adhering to this process will give the ability to ensure the results will get to first responders as soon as possible so informed operational decisions can be made.

Telehealth

Telehealth services should be leveraged as much as possible during the COVID-19 response. Telehealth will expand the resources available for those at higher risk of adverse outcomes from infection, populations in rural communities, those not needing emergent care, and individuals that may be experiencing a mental health crisis. Administering medical advice, triage, pharmaceutical consultation, nursing consultation, and other health resources through technology will also reduce the risk of exposure to COVID-19 for both patients and providers. Barriers to performing services have been reduced through certain federal regulations not being enforced, and additional measures should be taken by state and local agencies to encourage this form of health services.

Many services can and should be performed through technology. This area may use workforce resources like retired healthcare providers, the State Emergency Registry of Volunteers (SERV-NV), students entering a healthcare profession as allowed by their institution and licensing boards, mental and behavioral health personnel, and many others.

State and local resources should consider lowering or eliminating the fees for services related to telehealth to expand the use by Nevadans. Nevada Medicaid (DHCFP) currently allows for the reimbursement of telehealth services for Medicaid enrolled providers and is waving certain policy limitations. Additional policy waivers should be considered if policies are identified as problematic for the quick expansion of services needed to respond to the public health emergency related to COVID-19.

Full DHCFP Resources: Nevada Division of Healthcare Financing and Policy – COVID-19 Resources

US HHS Relaxed HIPAA Requirements During COVID-19 Response

The Office for Civil Rights (OCR) at the United State Department of Health and Human Services (HHS) will not be enforcing certain regulations under HIPAA for telemedicine during the COVID-19 response. Covered healthcare providers subject to the HIPAA Rules may seek to communicate with patients, and provide telehealth services, through remote communication technologies. Some of these technologies, and the way they are used by HIPAA covered healthcare providers, may not fully comply with the requirements of the HIPAA Rules. OCR will exercise its enforcement discretion and will not impose penalties for noncompliance with the regulatory requirements under the HIPAA Rules against covered healthcare providers in connection with the good faith provision of telehealth during the COVID-19 nationwide public health emergency.

A covered healthcare provider that wants to use audio or video communication technology to provide telehealth to patients can use any non-public facing remote communication product that is available to communicate with patients. OCR is exercising its enforcement discretion to not impose penalties for noncompliance with the HIPAA Rules in connection with the good faith provision of telehealth. This exercise of discretion applies to telehealth provided for any reason, regardless of whether the telehealth service is related to the diagnosis and treatment of health conditions related to COVID-19.

A covered healthcare provider in the exercise of their professional judgement may request to examine a patient exhibiting COVID- 19 symptoms, using a video chat application connecting the provider's or patient's phone or computer in order to assess a greater number of patients while limiting the risk of infection of other persons who would be exposed from an in-person consultation. Likewise, a covered healthcare provider may provide similar telehealth services in the exercise of their professional judgment to assess or treat any other medical condition, even if not related to COVID-19, such as a sprained ankle, dental consultation, psychological evaluation, or other conditions.

Covered healthcare providers may use popular applications that allow for video chats, including but not limited to Apple FaceTime, Facebook Messenger video chat, Google Hangouts video, or Skype, to provide telehealth without risk that OCR might seek to impose a penalty for noncompliance with the HIPAA Rules. Providers are encouraged to notify patients that these third-party applications potentially introduce privacy risks, and providers should enable all available encryption and privacy modes when using such applications.

Facebook Live, Twitch, TikTok, and similar video communication applications are public facing, and **should not be used** in the provision of telehealth by covered healthcare providers.

Covered healthcare providers that seek additional privacy protections for telehealth while using video communication products should provide services through technology vendors that are HIPAA compliant and will enter into HIPAA business associate agreements (BAAs) in connection with the provision of their video communication products. The list below includes some vendors that represent that they provide HIPAA-compliant video communication products and that they will enter a HIPAA BAA.

- Skype for Business
- Updox
- VSee
- Zoom for Healthcare
- Doxy.me
- Google G Suite Hangouts Meet

Further OCR Guidance: HIPAA Privacy and Novel Coronavirus

HHS Guidance on BAAs: Sample Business Associate Agreement Provisions

HealthIT.gov Resource: Telemedicine and Telehealth

Clinical Guidance for Management of Patients with Confirmed COVID-19

This interim guidance is for clinicians caring for patients with confirmed infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes coronavirus disease 2019 (COVID-19). CDC will update this interim guidance as more information becomes available.

Clinical Presentation

Incubation period

The incubation period for COVID-19 is thought to extend to 14 days, with a median time of 4-5 days from exposure to symptoms onset. One study reported that 97.5% of persons with COVID-19 who develop symptoms will do so within 11.5 days of SARS-CoV-2 infection.

Presentation

The signs and symptoms of COVID-19 present at illness onset vary, but over the course of the disease, most persons with COVID-19 will experience the following:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

Symptoms differ with severity of disease. For example, fever, cough, and shortness of breath are more commonly reported among people who are hospitalized with COVID-19 than among those with milder disease (non-hospitalized patients). Atypical presentations occur often, and older adults and persons with medical comorbidities may have delayed presentation of fever and respiratory symptoms. In one study of 1,099 hospitalized patients, fever was present in only 44% at hospital admission but eventually developed in 89% during hospitalization. Fatigue, headache, and muscle aches (myalgia) are among the most commonly reported symptoms in people who are not hospitalized, and sore throat and nasal congestion or runny nose (rhinorrhea) also may be prominent symptoms. Many people with COVID-19 experience gastrointestinal symptoms such as nausea, vomiting or diarrhea, sometimes prior to developing fever and lower respiratory tract signs and symptoms. Loss of smell (anosmia) or taste (ageusia) preceding the onset of respiratory symptoms has been commonly reported in COVID-19 especially among women and young or middle-aged patients who do not require hospitalization. While many of the symptoms of COVID-19 are common to other respiratory or viral illnesses, anosmia appears to be more specific to COVID-19.

Several studies have reported that the signs and symptoms of COVID-19 in children are similar to adults vary by age of the child and are usually milder compared to adults. For more information on the clinical presentation and course among children, see Information for Pediatric Healthcare Providers.

Asymptomatic and Pre-Symptomatic Infection

Several studies have documented SARS-CoV-2 infection in patients who never develop symptoms (asymptomatic) and in patients not yet symptomatic (pre-symptomatic). Since asymptomatic persons are not routinely tested, the prevalence of asymptomatic infection and detection of pre-symptomatic infection is not yet well understood. One study found that as many as 13% of reverse transcription-polymerase chain reaction (RT-PCR)-confirmed cases of SARS-CoV-2 infection in children were asymptomatic. Another study of skilled nursing facility residents who were infected with SARS-CoV-2 after contact with a healthcare worker with COVID-19 demonstrated that half of the residents were asymptomatic or pre-symptomatic at the time of contact tracing, evaluation, and testing.[27] Patients may have abnormalities on chest imaging before the onset of symptoms.

Asymptomatic and Pre-Symptomatic Transmission

Increasing numbers of epidemiologic studies have documented SARS-CoV-2 transmission during the pre-symptomatic incubation period. Virologic studies using RT-PCR detection have reported tests with low cycle thresholds, indicating larger quantities of viral RNA and viable virus has been cultured from persons with asymptomatic and pre-symptomatic SARS-CoV-2 infection. The relationship between SARS-CoV-2 viral RNA shedding, and transmission risk is not yet clear. The proportion of SARS-CoV-2 transmission due to asymptomatic or pre-symptomatic infection compared to symptomatic infection is unclear.

Clinical Course

Illness Severity

The largest cohort reported of >44,000 persons with COVID-19 from China showed that illness severity can range from mild to critical:

- Mild to moderate (mild symptoms up to mild pneumonia): 81%
- Severe (dyspnea, hypoxia, or >50% lung involvement on imaging): 14%
- Critical (respiratory failure, shock, or multiorgan system dysfunction): 5%

In this study, all deaths occurred among patients with critical illness, and the overall case fatality rate was 2.3%. The case fatality rate among patients with critical disease was 49%. Among children in China, illness severity was lower with 94% having asymptomatic, mild, or moderate disease; 5% having severe disease; and <1% having critical disease. Among U.S. COVID-19 cases with known disposition, the proportion of persons who were hospitalized was 19%. The proportion of persons with COVID-19 admitted to the intensive care unit (ICU) was 6%.

Clinical Progression

Among patients who developed severe disease, the median time to dyspnea from the onset of illness or symptoms ranged from 5 to 8 days, the median time to acute respiratory distress syndrome (ARDS) from the onset of illness or symptoms ranged from 8 to 12 days, and the median time to ICU admission from the onset of illness or symptoms ranged from 10 to 12 days. Clinicians should be aware of the potential for some patients to rapidly deteriorate one week after illness onset. Among all hospitalized patients, a range of 26% to 32% of patients were admitted to the ICU. Among all patients, a range of 3% to 17% developed ARDS compared to a range of 20% to 42% for hospitalized patients and 67% to 85% for patients admitted to the ICU. Mortality among patients admitted to the ICU ranges from 39% to 72% depending on the study and characteristics of patient population. The median length of hospitalization among survivors was 10 to 13 days.

Risk Factors for Severe Illness

An updated list of high-risk underlying conditions, based on what has been reported in the literature as of August 31, 2021 is provided on this webpage. The conditions are grouped by the level of evidence, with the highest level at the top. The list of underlying medical conditions is not exhaustive and will be updated as the science evolves. CDC is currently reviewing additional underlying conditions, and some of these might have sufficient evidence to be added to the list. This list should not be used to exclude people with underlying conditions from recommended preventive measures such as booster doses of vaccines or needed therapies. The process and evidence used to update the list is found in the brief of Scientific Evidence for Conditions that Increase Risk of Severe Illness.

Reinfection

There are limited data about reinfection with SARS-CoV-2 after recovery from COVID-19. While viral RNA shedding declines with resolution of symptoms, it may continue for days to weeks. However, the detection of RNA during convalescence does not necessarily indicate the presence of viable infectious virus. Clinical infection has been correlated with the detection of IgM and IgG antibodies. However, definitive data are lacking, and it remains uncertain whether individuals with antibodies are protected against reinfection with SARS-CoV-2, and if so, what concentration of antibodies is needed to confer protection.

Viral Testing

Diagnosis of COVID-19 requires detection of SARS-CoV-2 RNA by reverse transcription polymerase chain reaction (RT-PCR). Detection of SARS-CoV-2 viral RNA is better in nasopharynx samples compared to throat samples. Lower respiratory samples may have better yield than upper respiratory samples. SARS-CoV-2 RNA has also been detected in stool and blood. Detection of SARS-CoV-2 RNA in blood may be a marker of severe illness. Viral RNA shedding may persist over longer periods among older persons and those who had severe illness requiring hospitalization (median range of viral shedding among hospitalized patients 12–20 days).

Infection with both SARS-CoV-2 and with other respiratory viruses has been reported, and detection of another respiratory pathogen does not rule out COVID-19.

For more information about testing and specimen collection, handling and storage, visit Evaluating and Testing Persons for Coronavirus Disease 2019 (COVID-19) and Frequently Asked Questions on COVID-19 for Laboratories.

Laboratory and Radiographic Findings

Laboratory Findings

Lymphopenia is the most common laboratory finding in COVID-19 and is found in as many as 83% of hospitalized patients. Lymphopenia, neutrophilia, elevated serum alanine aminotransferase and aspartate aminotransferase levels, elevated lactate dehydrogenase, high CRP, and high ferritin levels may be associated with greater illness severity. Elevated D-dimer and lymphopenia have been associated with mortality. Procalcitonin is typically normal on admission but may increase among those admitted to an ICU. Patients with critical illness had high plasma levels of inflammatory makers, suggesting potential immune dysregulation.

Radiographic Findings

Chest radiographs of patients with COVID-19 typically demonstrate bilateral air-space consolidation, though patients may have unremarkable chest radiographs early in the disease. Chest CT images from patients with COVID-19 typically demonstrate bilateral, peripheral ground glass opacities. Because this chest CT imaging pattern is non-specific and overlaps with other infections, the diagnostic value of chest CT imaging for COVID-19 may be low and dependent upon radiographic interpretation. One study found that 56% of patients who presented within two days of diagnosis had a normal CT. Conversely, other studies have identified chest CT abnormalities in patients prior to the detection of SARS-CoV-2 RNA. Given the variability in chest imaging findings, chest radiograph or CT alone is not recommended for the diagnosis of COVID-19. The American College of Radiology also does not recommend CT for screening, or as a first-line test for diagnosis of COVID-19. (See American College of Radiology Recommendations).

Clinical Management and Treatment

The National Institutes of Health published guidelines on prophylaxis use, testing, and management of patients with COVID-19. For more information, please visit National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. The recommendations were based on scientific evidence and expert opinion and will be updated as more data become available.

Mild to Moderate Disease

Patients with a mild clinical presentation (absence of viral pneumonia and hypoxia) may not initially require hospitalization, and many patients will be able to manage their illness at home. The decision to monitor a patient in the inpatient or outpatient setting should be made on a case-by-case basis. This decision will depend on the clinical presentation, requirement for supportive care, potential risk factors for severe disease, and the ability of the patient to self-isolate at home. Patients with risk factors for severe illness (see People Who Are at Higher Risk for Severe Illness) should be monitored closely given the possible risk of progression to severe illness, especially in the second week after symptom onset.

For information regarding infection prevention and control recommendations, please see Interim Infection Prevention and Control Recommendations for Healthcare Personnel During COVID-19

Severe Disease

Some patients with COVID-19 will have severe disease requiring hospitalization for management. Inpatient management revolves around the supportive management of the most common complications of severe COVID-19: pneumonia, hypoxemic respiratory failure/ARDS, sepsis and septic shock, cardiomyopathy and arrhythmia, acute kidney injury, and complications from prolonged hospitalization, including secondary bacterial infections, thromboembolism, gastrointestinal bleeding, and critical illness polyneuropathy/myopathy.

More information can be found at National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelines and Clinical Questions about COVID-19: Questions and Answers. Additional resources and guidance documents on the treatment and management of COVID-19, including inpatient management of critically ill patients, are provided below.

Hypercoagulability and COVID-19

Some patients with COVID-19 may develop signs of a hypercoagulable state and be at increased risk for venous and arterial thrombosis of large and small vessels. **Laboratory abnormalities** commonly observed among hospitalized patients with COVID-19-associated coagulopathy include:

- Mild thrombocytopenia
- Increased D-dimer levels
- Increased fibrin degradation products
- Prolonged prothrombin time

Elevated D-dimer levels have been strongly associated with greater risk of death.

There are several reports of hospitalized patients with **thrombotic complications**, most frequently deep venous thrombosis and pulmonary embolism. Other reported manifestations include:

- Microvascular thrombosis of the toes
- Clotting of catheters
- Myocardial injury with ST-segment elevation
- Large vessel strokes

The pathogenesis for COVID-19-associated hypercoagulability remains unknown. However, hypoxia and systemic inflammation secondary to COVID-19 may lead to high levels of inflammatory cytokines and activation of the coagulation pathway.

There are limited data available to inform clinical management around prophylaxis or treatment of venous thromboembolism in COVID-19 patients.

Several national professional associations provide resources for up-to-date information concerning COVID-19-associated hypercoagulability, including management of anticoagulation. This is a rapidly evolving topic, with new information released often.

More information on hypercoagulability and COVID-19 is available from the American Society of Hematology and National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelines – Antithrombotic Therapy in Patients with COVID-19.

Pediatric Management

Illness among pediatric patients with COVID-19 is typically milder than among adults. Most children present with symptoms of upper respiratory infection. However, severe outcomes have been reported in children, including deaths. Data suggest that infants (<12 months of age) may be at higher risk for severe illness from COVID-19 compared with older children. CDC and partners are also investigating reports of multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19.

For expanded guidance on the management of children with COVID-19 and associated complications, see Evaluation and Management Considerations for Neonates At Risk for COVID-19, Information for Pediatric Healthcare Providers, and the Surviving Sepsis Campaign International Guidelines for the Management of Septic Shock and Sepsis-Associated Organ Dysfunction in Children.

Clinical Management and Treatment

The National Institutes of Health (NIH) published guidelines on prophylaxis use, testing, and management of patients with COVID-19. For more information, please visit the NIH Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. The recommendations are based on scientific evidence and expert opinion and are regularly updated as more data become available. The U.S. Food and Drug Administration (FDA) has approved one drug Remdesivir (Veklury) for the treatment of COVID-19 in certain situations. Clinical management of COVID-19 includes infection prevention and control measures and supportive care, including supplemental oxygen and mechanical ventilatory support when indicated.

Investigational Therapeutics

The National Institutes of Health have published guidelines for the medical management of COVID-19 external icon prepared by the COVID-19 Treatment Guidelines Panel. These guidelines contain information about therapeutics and will be updated as new information emerges and drugs and other therapeutic interventions are approved for use by FDA. Persons seeking information about registered clinical trials for COVID-19 in the United States can search for such information here: ClinicalTrials.gov.

Discontinuation of Transmission-Based Precautions or Home Isolation

Patients who have clinically recovered and are able to discharge from the hospital, but who have not been cleared from their Transmission-Based Precautions, may continue isolation at their place of residence until cleared. For recommendations on discontinuation of Transmission-Based Precautions or home isolation for patients who have recovered from COVID-19, please see:

- Ending Isolation and Precautions for People with COVID-19: Interim Guidance
- Ending Home Isolation for Persons with COVID-19 not in Healthcare Settings

CDC Guidance: Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)

Ten Clinical Tips on COVID-19 for Healthcare Providers Involved in Patient Care

Treatment and Prophylaxis

1. The National Institutes of Health has developed guidance on treatment, which will be regularly updated as new evidence on the safety and efficacy of drugs and therapeutics emerges from clinical trials and research publications.
2. There is currently no FDA-approved post-exposure prophylaxis for people who may have been exposed to COVID-19.

Symptoms and Diagnosis

3. Non-respiratory symptoms of COVID-19 – such as gastrointestinal (e.g., nausea, diarrhea) or neurologic symptoms (e.g., anosmia, ageusia, headache) – might appear before fever and lower respiratory tract symptoms (e.g., cough and shortness of breath).
4. Children with COVID-19 may have fever and cough at symptom onset as often as adult patients. Although most children with COVID-19 have not had severe illness, clinicians should maintain a high index of suspicion for SARS-CoV-2 infection in children, particularly infants and children with underlying conditions.
5. CT scans should not be used to screen for COVID-19 or as a first-line test to diagnose COVID-19. CT should be used sparingly, reserved for hospitalized, symptomatic patients with specific clinical indications for CT.

Co-Infections

6. Patients can be infected with more than one virus at the same time. Coinfections with other respiratory viruses in people with COVID-19 have been reported. Therefore, identifying infection with one respiratory virus does not exclude SARS-CoV-2 virus infection.
7. Several patients with COVID-19 have been reported presenting with concurrent community-acquired bacterial pneumonia. Decisions to administer antibiotics to COVID-19 patients should be based on the likelihood of bacterial infection (community-acquired or hospital-acquired), illness severity, and antimicrobial stewardship issues.

Severe Illness

8. Clinicians should be aware of the potential for some patients to rapidly deteriorate one week after illness onset.
9. The median time to acute respiratory distress syndrome (ARDS) ranges from 8 to 12 days.
10. Lymphopenia, neutrophilia, elevated serum alanine aminotransferase and aspartate aminotransferase levels, elevated lactate dehydrogenase, high CRP, and high ferritin levels may be associated with greater illness severity.

CDC Guidance: 10 Tips for Healthcare Providers

People Who Are at Higher Risk for Severe Illness

COVID-19 is a new disease and there is limited information regarding risk factors for severe disease. Based on currently available information and clinical expertise, **older adults and people of any age who have serious underlying medical conditions** might be at higher risk for severe illness from COVID-19. The risk of severe COVID-19 increases as the number of underlying medical conditions increases in a person.

Based on what we know now, those at high-risk for severe illness from COVID-19 are:

- People 65 years and older
- People who live in a nursing home or long-term care facility

People of all ages with underlying medical conditions, particularly if not well controlled, including:

- People with chronic lung disease or moderate to severe asthma
- People who have serious heart conditions
- People who are immunocompromised
    - Many conditions can cause a person to be immunocompromised, including cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications
- People with severe obesity (body mass index [BMI] of 40 or higher)
- People with diabetes
- People with chronic kidney disease undergoing dialysis
- People with liver disease

Full CDC Guidance: Toolkit for People Who Are at Higher Risk for Severe Illness

Information for Pediatric Healthcare Providers

Infections Among Children

Incidence of COVID-19 in Children

In the United States and globally, fewer cases of COVID-19 have been reported in children (age 0-17 years) compared with adults. While children comprise 22% of the US population, recent data show that 7.3% of all cases of COVID-19 in the United States reported to CDC were among children (as of August 3rd, 2020). The number and rate of cases in children in the United States have been steadily increasing from March to July 2020. The true incidence of SARS-CoV-2 infection in children is not known due to lack of widespread testing and the prioritization of testing for adults and those with severe illness. Hospitalization rates in children are significantly lower than hospitalization rates in adults with COVID-19, suggesting that children may have less severe illness from COVID-19 compared to adults. Visit CDC's Cases, Data, and Surveillance page for current CDC data.

Infections and Transmission Among Children

It is unclear whether children are as susceptible to infection by SARS-CoV-2 compared with adults and whether they can transmit the virus as effectively as adults. Recent evidence suggests that children likely have the same or higher viral loads in their nasopharynx compared with adults and that children can spread the virus effectively in households and camp settings.

Due to community mitigation measures and school closures, transmission of SARS-CoV-2 to and among children may have been reduced in the United States during the pandemic in the spring and early summer of 2020. This may explain the low incidence in children compared with adults. Comparing trends in pediatric infections before and after the return to in-person school and other activities may provide additional understanding about infections in children.

Symptoms and Severity of COVID-19 in Children

Clinical Presentation

The incubation period of SARS-CoV-2 appears to be about the same for children as in adults, at 2-14 days with an average of 6 days.

Signs or symptoms of COVID-19 in children include:

- Fever
- Fatigue
- Headache
- Myalgia
- Cough
- Nasal congestion or rhinorrhea
- New loss of taste or smell
- Sore throat
- Shortness of breath or difficulty breathing
- Abdominal pain
- Diarrhea
- Nausea or vomiting
- Poor appetite or poor feeding

Children infected with SARS-CoV-2 may have many of these non-specific symptoms, may only have a few (such as only upper respiratory symptoms or only gastrointestinal symptoms), or may be asymptomatic. The most common symptoms in children are cough and/or fever. A recent systematic review estimated that 16% of children with SARS-CoV-2 infection are asymptomatic, but evidence suggests that as many as 45% of pediatric infections are asymptomatic. The signs and symptoms of COVID-19 in children are similar to other infections and noninfectious processes, including influenza, streptococcal pharyngitis, and allergic rhinitis. The lack of specificity of signs or symptoms and the significant proportion of asymptomatic infections make symptom-based screening for identification of SARS-CoV-2 in children particularly challenging.

Severity of Illness in Children

While children infected with SARS-CoV-2 are less likely to develop severe illness compared with adults, children are still at risk of developing severe illness and complications from COVID-19. Recent COVID-19 hospitalization surveillance data shows that the rate of hospitalization among children is low (8.0 per 100,000 population) compared with that in adults

(164.5 per 100,000 population), but hospitalization rates in children are increasing. While children have lower rates of mechanical ventilation and death than adults, 1 in 3 children hospitalized with COVID-19 in the United States were admitted to the intensive care unit, which is the same in adults.

Current evidence suggests that children with certain underlying medical conditions and infants (age <1 year) might be at increased risk for severe illness from SARS-CoV-2 infection. Of the children who have developed severe illness from COVID-19, most have had underlying medical conditions.

- There is limited evidence about which underlying medical conditions in children might increase the risk for severe illness. Current evidence suggests that children with medical complexity, with genetic, neurologic, metabolic conditions, or with congenital heart disease might be at increased risk for severe illness from COVID-19. Similar to adults, children with obesity, diabetes, asthma and chronic lung disease, sickle cell disease, or immunosuppression might also be at increased risk for severe illness from COVID-19.
- While healthcare providers should maintain a high index of suspicion for SARS-CoV-2 infection in these populations and monitor the progression of illness closely, it appears that most infants and children with certain underlying conditions such as cancer who are infected with SARS-CoV-2 do not usually develop severe illness.
- Hospitalization rates in the United States are higher among Hispanic/Latino children and black, non-Hispanic children and non-Hispanic black children compared with white children, which may be related to the higher rates of obesity and other underlying conditions among these populations.

Similar to adults, children with severe COVID-19 may develop respiratory failure, myocarditis, shock, acute renal failure, coagulopathy, and multi-organ system failure. Some children with COVID-19 have developed other serious problems like intussusception or diabetic ketoacidosis. Children infected with SARS-CoV-2 are also at risk for developing multisystem inflammatory syndrome in children (MIS-C). For the case definition, recommended evaluation, and current data on MIS-C cases in the United States, visit MIS-C Information for Healthcare Providers.

Testing and Recommendations for Isolation

Viral tests (nucleic acid or antigen) are recommended to diagnose acute infection with SARS-CoV-2. Testing strategies, including recommended specimen type, are the same for children and adults. CDC's guidance for the evaluation and management of neonates at risk for COVID-19 details specific testing considerations for newborns.

For more information on CDC's recommendations for isolation, which apply to children and adults, visit: discontinuing precautions and disposition of patients with COVID-19 in healthcare settings and discontinuation of home isolation for people not in healthcare settings.

Testing, Isolation, and Quarantine for School-Aged Children

As children return to school and other in-person activities, pediatric healthcare providers should be prepared to answer questions from families about testing and when it is safe to return to school or be with people outside the household. Review CDC's information for school administrators on symptom screening and testing for children in school for additional information.

School-aged children should be prioritized for viral testing if they have:

- Signs or symptoms of COVID-19 **and**
    - close contact (within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period) with a person with laboratory confirmed or probable SARS-CoV-2 infection **or**
    - increased likelihood for exposure (which includes living in or traveling to a community with substantial transmission as defined by the local public health department and described in CDC's Community Mitigation framework)

- No symptoms but have had close contact (within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period) with a person with laboratory confirmed or probable SARS-CoV-2 infection.

Children with symptoms of an infectious disease should not attend school, but the length of time the child should stay home depends on the most likely etiology of illness (COVID-19 or not). Return to school policies for children with COVID-19 should be based on CDC's recommendation for discontinuation of home isolation. A negative test or doctor's note should **not** be required for return to school upon completion of the 10 days of isolation with improvement of symptoms.

- If the child has symptoms of COVID-19, but the child has not had close contact (within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period) with a person with laboratory confirmed or probable SARS-CoV-2 infection and the child does not have an increased likelihood for exposure to SARS-CoV-2 (which includes living in or traveling to a community with substantial transmission), he or she should be evaluated for other disease processes. If the child is determined to likely **not** have COVID-19 by a healthcare provider, he/she should be allowed to return to school according to existing school policies for non-COVID illnesses. Examples of non-COVID return to school policies include resolution of fever without antipyretics for 24 hours for non-COVID viral illnesses or after initiation of antibiotics for bacterial illnesses.
- If the child has symptoms of COVID-19 and has increased likelihood for exposure (which includes living in or traveling to a community with substantial transmission), he or she should be tested for SARS-CoV-2 infection, if possible. If the test result is negative, the child should be allowed to return to school once their symptoms of illness have improved consistent with non-COVID return to school policies. If testing cannot be obtained, the child should be considered a presumed case of COVID-19 and should isolate according to CDC's recommendations for discontinuation of home isolation.
- If the child has had close contact to someone with SARS-CoV-2, he or she should be tested for SARS-CoV-2 but must remain in quarantine for the 10-day incubation period or 7 days after receiving a negative test, in accordance with CDC's Quarantine If You Might Be Sick.

Laboratory and Radiographic Findings of COVID-19

Typical laboratory findings in children with COVID-19 include mild abnormalities in white blood cell count (either increased or decreased lymphocyte counts), mildly elevated inflammatory markers (including procalcitonin), and mildly elevated liver enzymes. Radiologic findings in children with COVID-19 include unilateral or bilateral infiltrates on chest radiograph or CT, ground-glass opacities on CT, and consolidation with surrounding Halo sign on CT. CT should be used sparingly and only for hospitalized, symptomatic patients with specific clinical indications. For more information, see recommendations from the American College of Radiology.

Management of COVID-19 in Children

Pediatric healthcare providers should consider the child's clinical presentation, requirement for supportive care, underlying medical conditions, and the ability for caregivers to care for the child at home when deciding whether the child may need inpatient care for COVID-19. For more information, visit Guidance for home care of people not requiring hospitalization for Coronavirus Disease 2019 (COVID-19). Provide parents resources on emergency warning signs for COVID-19 and caring for someone at home.

Currently, there is one specific drug approved by the U.S. Food and Drug Administration (FDA) for treatment of COVID-19, Remdesivir. Treatment of COVID-19 remains largely supportive and includes prevention and management of complications. The safety and effectiveness of remdesivir for treatment of COVID-19 has not yet been evaluated in children. Additionally, the National Institutes of Health (NIH) suggests that dexamethasone may be beneficial in pediatric patients with COVID-19 respiratory disease who are on mechanical ventilation. For more information, review considerations for children in NIH's COVID-19 Treatment Guidelines.

For information on evaluation and management of MIS-C, visit MIS-C Information for Healthcare Providers.

It is important to remember that children infected with SARS-CoV-2 can present with other serious conditions such as diabetic ketoacidosis or intussusception, and a broad differential must be maintained in evaluating ill children during the COVID-19 pandemic. Standard evaluation and management of co-occurring conditions should be maintained for a child infected with SARS-CoV-2, with additional infection control measures. Pediatric providers should have an appropriate suspicion for COVID-19, but also to continue to consider and test for other diagnoses, such as community acquired pneumonia and influenza (see CDC's Flu Information for Healthcare Professionals for more information).

CDC has specific guidance for inpatient obstetric healthcare settings and the evaluation and management of neonates at risk for COVID-19. Additionally, several other organizations have published guidelines related to the treatment and management of adult and pediatric patients with COVID-19:

- National Institutes of Health (NIH) Coronavirus Disease 2019 (COVID-19) Treatment Guidelines
- World Health Organization (WHO) Interim Guidance on Clinical Management of Severe Acute Respiratory Infection when Novel Coronavirus (nCoV) Infection is Suspected
- Surviving Sepsis Campaign International Guidelines for the Management of Septic Shock and Sepsis-Associated Organ Dysfunction in Children
- Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19

Immunizations and Well-Child Care

Community mitigation measures such as shelter-in-place orders resulted in declines in outpatient pediatric visits and fewer vaccine doses administered during the early COVID-19 pandemic, leaving children at risk for vaccine-preventable diseases. **Healthcare providers should work with families to keep children up to date with all recommended vaccinations, especially with influenza vaccinations for the 2021-2022 influenza season.** For more information on influenza, visit CDC's Influenza page. For more information on immunization services and vaccination recommendations during the pandemic, visit Vaccination Guidance.

Healthcare providers should identify children who have missed well-child visits and/or recommended vaccinations and contact them to schedule in-person appointments, with prioritization of infants, children age < 24 months and school-aged children. Developmental surveillance and early childhood screenings, including developmental and autism screening, should continue along with referrals for early intervention services and further evaluation if concerns are identified.

All newborns should be seen by a pediatric healthcare provider shortly after hospital discharge (three to five days of age). Ideally, newborn visits should be done in-person, even during the COVID-19 pandemic, to evaluate feeding and weight gain, check for dehydration and jaundice, ensure all components of newborn screening were completed with appropriate confirmatory testing and follow-up, and evaluate maternal well-being. All healthcare facilities should ensure infection prevention and control policies are in place to minimize chance of exposure to SARS-CoV-2 among providers, patients, and families. For specific recommendations by healthcare facility type and level of community transmission, review Infection Control Guidance for Healthcare Professionals. CDC has additional trainings and information about potential exposures in the workplace for healthcare providers.

Pediatric healthcare providers should incorporate education on everyday infection prevention measures, such as the importance of proper hand hygiene, social distancing, and wearing masks when in public, as well as information on stress and coping during the pandemic in their regular anticipatory guidance with children and their families. Pediatric healthcare providers should educate patients and families about infection prevention policies that exist in clinics, emergency departments, hospitals, and clinics. Remind people to seek emergency care immediately, if indicated, as delaying care may cause harm.

Primary care practices should continue to use infection prevention strategies including:

- Scheduling sick visits and well-child visits during different times of the day

- Reducing crowding in waiting rooms, by asking patients to remain outside (e.g., stay in their vehicles, if applicable) until they are called into the facility for their appointment, or setting up triage booths to screen patients safely
- Considering telemedicine for visits that do not involve vaccination or do not require an in-person physical exam. For more information, visit Using Telehealth Services

CDC Guidance: Information for Pediatric Healthcare Providers

Multisystem Inflammatory Syndrome in Children (MIS-C)

Multisystem inflammatory syndrome in children (MIS-C) is a condition where different body parts can become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. Children with MIS-C may have a fever and various symptoms, including abdominal (gut) pain, vomiting, diarrhea, neck pain, rash, bloodshot eyes, or feeling extra tired. We do not yet know what causes MIS-C. However, many children with MIS-C had the virus that causes COVID-19 or had been around someone with COVID-19.

CDC is collaborating with domestic and international partners to investigate reports of multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19. CDC and partners are working to better understand this new syndrome, including how common it is and its risk factors, and to begin tracking cases.

Patients with MIS-C have presented with a persistent fever and a variety of signs and symptoms including multiorgan (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic, neurologic) involvement, and elevated inflammatory markers. Not all children will have the same symptoms, and some children may have symptoms not listed here. MIS-C may begin weeks after a child is infected with SARS-CoV-2. The child may have been asymptomatically infected, and, in some cases, the child and their caregivers may not even know they had been infected.

For children who may have MIS-C, evaluation for signs of this syndrome may include (but are not limited to) chest radiograph, echocardiography, and blood testing to evaluate for evidence of inflammation. Healthcare providers who have cared or are caring for patients younger than 21 years of age meeting MIS-C criteria should report suspected cases to their local, state, or territorial health department. After hour phone numbers for health departments are available at the Council of State and Territorial Epidemiologists website. For additional reporting questions, please contact CDC's 24-hour Emergency Operations Center at 770-488-7100. For more information including a full case definition, please visit the CDC Health Alert Network.

Case Definition for MIS-C

As described in the Health Advisory, "Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with Coronavirus Disease 2019 (COVID-19)," the case definition for MIS-C is:

- An individual aged <21 years presenting with fever*, laboratory evidence of inflammation**, and evidence of clinically severe illness requiring hospitalization, with multisystem (>2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); AND
- No alternative plausible diagnoses; AND
- Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or exposure to a suspected or confirmed COVID-19 case within the 4 weeks prior to the onset of symptoms.

*Fever >38.0°C for ≥24 hours, or report of subjective fever lasting ≥24 hours.

**Including, but not limited to, one or more of the following: an elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin.

Additional comments:

- Some individuals may fulfill full or partial criteria for Kawasaki disease but should be reported if they meet the case definition for MIS-C.
- Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection.

Clinical Presentation

Patients with MIS-C have presented with a persistent fever, fatigue, and a variety of signs and symptoms including multiorgan (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic, neurologic) involvement, and elevated inflammatory markers. Not all children will have the same signs and symptoms, and some children may have symptoms not listed here. MIS-C may begin weeks after a child is infected with SARS-CoV-2. The child may have been infected from an asymptomatic contact and, in some cases, the child and their caregivers may not even know they had been infected.

Testing, Laboratory Findings, and Radiographic Findings

Diagnosis of COVID-19 requires detection of SARS-CoV-2 RNA by reverse transcription polymerase chain reaction (RT-PCR) testing. Testing strategies, including clinical criteria for considering testing and recommended specimen type, are the same for children and adults. CDC's guidance for evaluation and management of neonates at risk for COVID-19 details specific testing considerations for newborns. For more information about testing, visit Evaluating and Testing Persons for Coronavirus Disease 2019 (COVID-19), Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for COVID-19, and Frequently Asked Questions for Laboratories.

There are limited data on laboratory findings associated with COVID-19 in pediatric patients. Unlike adult patients with COVID-19, there have been no consistent leukocyte abnormalities reported in pediatric patients. Additional studies are required to understand the laboratory findings associated with pediatric cases of COVID-19.

Chest x-rays of children with COVID-19 have shown patchy infiltrates consistent with viral pneumonia, and chest CT scans have shown nodular ground glass opacities; however, these findings are not specific to COVID-19, may overlap with other diagnoses, and some children may have no radiographic abnormalities. Chest radiograph or CT alone is not recommended for the diagnosis of COVID-19. The American College of Radiology also does not recommend CT for screening or as a first-line test for diagnosis of COVID-19. (See American College of Radiology Recommendations)

Behavioral Health Impact of the Pandemic on Children

Children and families are facing unique challenges during this pandemic, particularly related to childcare, education, disrupted relationships (e.g., peers, grandparents, teachers, and childcare providers). Play is essential to development, contributing to cognitive, physical, social, and emotional well-being. Children have lost opportunities to interact and play with peers for an extended period of time, and they cannot access important venues for play such as playgrounds. Most Nevada schools are conducting some or all of the 2020-2021 school year virtually; some families may be unable to or have great difficulty accessing virtual learning resources, or they may be unable to provide support for virtual learning at home due to work schedules or for other reasons. Parents and caregivers of children attending in-person school or childcare may be coping with daily anxiety about virus transmission. Understandably, parents and caregivers are experiencing extremely high levels of stress, anxiety, and depression.

Due to the disruption the COVID-19 pandemic has caused across all spheres of our society and across so many aspects of everyday life, many experts are recommending that the pandemic be conceptualized as an adverse childhood experience (ACE) to which all children are currently exposed. Additionally, the public health measures put in place to flatten the curve and mitigate the population-level effects of COVID-19 such as social distancing, school closures, and restrictions on gatherings are likely exacerbating other ACEs by increasing intra-familial adversity and exposing children to increased parental stress related to job loss, food insecurity, and housing insecurity. These effects may last for years and disproportionally affect low-income populations and racial and ethnic minorities—populations already at risk for ACE-impacted chronic conditions such as preterm birth, diabetes, hypertension, and chronic lung disease. Educational

inequities are also expected to be amplified because of school closures, virtual schooling, and the social and economic effects of the pandemic.

Some difficulty coping with recent events is to be expected in children as a normal reaction to an abnormal situation. Behaviors may vary by age, including excessive crying, tantrums, and clinging (infants/toddlers); irritability, whining, and nightmares (school age); or physical complaints (e.g., headaches), apathy, and isolation (adolescents). Symptoms that are long-lasting, cause distress to the child or his/her caregivers or impair healthy family functioning should be addressed. At all visits, primary care providers should screen for mental health symptoms that may indicate a child is having difficulty dealing with the pandemic. These include:

- Depressed or irritable mood
- Sleep disturbances, including increased sleep, difficulty falling asleep, nightmares, or nighttime waking
- Changes in appetite, either increased or decreased
- Social withdrawal
- Obsessive play, such as repetitively acting out a traumatic event or pandemic-related themes, which interferes with normal activities
- Hyperactivity that was not previously present (and does not seem related to lack of opportunities to exercise)

If concerned about suicide risk, the National Institute on Mental Health developed the Ask Suicide-Screening Questions (NIMH ASQ), four questions in 20 seconds to identify people at risk of suicide. In a NIMH study, a "yes" response to one or more questions identified 97% of youth aged 10 to 21 at risk of suicide:

1. In the past few weeks, have you wished you were dead?
2. In the past few weeks, have you felt that you or your family would be better off if you were dead?
3. In the past week, have you been having thoughts about killing yourself?
4. Have you ever tried to kill yourself?

If the individual answers "yes" to a Health Care Provider, then a potential risk is identified. They then require a brief suicide safety assessment to determine next steps.

Hospitals and medical providers should ensure that all staff members are trained in Psychological First Aid and trauma-informed care. Primary care offices should consider integrated mental health services and should build capacity to link families to social services through partnerships with local agencies such as food shelters and Legal Aid.

Young children ages 0-5 are a special population. Young children can sense that things have changed but lack the capacity to understand why. Early childhood mental health and development experts can offer education on how best to support young children's coping, answer their questions in an age-appropriate manner, and handle common behavioral reactions to disasters. Resources include Nevada Early Intervention Services and the Division of Child and Family Services.

Numerous studies have documented that exposure to hospital settings, medical crises, and death can cause traumatic stress reactions and Post Traumatic Stress Disorder in both parents and children. In accordance with recommendations by the Society of Critical Care Medicine, children receiving treatment for COVID-19 or MIS-C in the Neonatal Intensive Care Unit or Pediatric Intensive Care Unit, and their families, should be offered consultation by a psychologist or other source of psychosocial support. Cognitive behavioral-based coping approaches may mitigate the behavioral health impact of hospital-based treatment during the pandemic. In the absence of hospital-based psychosocial support such as pediatric consultation-liaison, social work, or child life specialists, the Nevada Resilience Project should be consulted for availability of a Resilience Ambassador (mental health crisis counselor). Children who become separated from parents or caregivers due to the parent/caregiver receiving hospital-based treatment for COVID-19 should receive the same level of psychosocial support. Hospitals and primary care offices should consider requiring continuing medical education on bereavement in children.

Resources:

- MIS-C Information for Healthcare Providers
- Interim Clinical Guidance for Management of Patients with Confirmed COVID-19
- Considerations for Inpatient Obstetric Healthcare Settings
- Evaluation and Management Considerations for Neonates at Risk for COVID-19
- Guidance on Care for Breastfeeding Women
- Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed COVID-19 in Healthcare Settings
- Health Alert Network (HAN): Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with Coronavirus Disease 2019 (COVID-19)
- Steps Healthcare Facilities Can Take to Prepare for COVID-19
- Interim Clinical Guidance for Management of Patients with Confirmed COVID-19
- National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelines
- Seattle Children's Primary Care Principles for Child Mental Health
- National Child Traumatic Stress Network: Psychological First Aid
- Nevada Early Intervention Services (NEIS)
- Division of Child and Family Services (DCFS) Early Childhood Mental Health Services
- Zero to Three Coronavirus Resources
- Society of Critical Care Medicine Guidelines for Family-Centered Care in the ICU
- Supporting Grieving Students During a Pandemic
- Supporting Kids During the COVID-19 Crisis
- Nevada 2-1-1

Evaluation and Management Considerations for Neonates at Risk for COVID-19

Since the April 2020 first posting of this guidance, several publications have reported the outcomes of neonates born to mothers with suspected or confirmed SARS-CoV-2 infection. These publications have been used to inform this guidance update. CDC will continue to examine data on the risk of infection and outcomes for neonates born to mothers with SARS-CoV-2 infection and will update this guidance as new information becomes available.

Routes of transmission

Transmission of SARS-CoV-2, the virus that causes COVID-19, to neonates is thought to occur primarily through respiratory droplets during the postnatal period when neonates are exposed to mothers or other caregivers with SARS-CoV-2 infection. Limited reports in the literature have raised concern of possible intrauterine, intrapartum, or peripartum transmission, but the extent and clinical significance of vertical transmission, which appears to be rare, is unclear. At this time, there are insufficient data to make recommendations on routine delayed cord clamping or immediate skin-to-skin care for the purpose of preventing SARS-CoV-2 transmission to the neonate.

Clinical presentation and disease severity

Reported signs among neonates with SARS-CoV-2 infection include fever, lethargy, rhinorrhea, cough, tachypnea, increased work of breathing, vomiting, diarrhea, and poor feeding. The extent to which SARS-CoV-2 infection contributed to the reported signs of infection and complications is unclear, as many of these findings are common in term and preterm infants for other reasons (e.g., transient tachypnea of the newborn, neonatal respiratory distress syndrome).

Current evidence suggests that SARS-CoV-2 infections in neonates are uncommon. If neonates do become infected, the majority have either asymptomatic infections or mild disease (i.e., do not require respiratory support), and they recover. Severe illness in neonates, including illness requiring mechanical ventilation, has been reported but appears to be rare.

Neonates with underlying medical conditions and preterm infants (<37 weeks gestational age) may be at higher risk of severe illness from COVID-19.

Testing recommendations

Testing is recommended for all neonates born to mothers with suspected or confirmed COVID-19, regardless of whether there are signs of infection in the neonate. For neonates presenting with signs of infection suggestive of COVID-19, as described above, providers should also consider alternative diagnoses.

Recommended testing

- Diagnosis should be confirmed by testing for SARS-CoV-2 RNA by reverse transcription polymerase chain reaction (RT-PCR). Detection of SARS-CoV-2 RNA can be collected using nasopharynx, oropharynx, or nasal swab samples.
- Serologic testing is not recommended at this time to diagnose acute infection in neonates.

When to test

- Both symptomatic and asymptomatic neonates born to mothers with suspected or confirmed COVID-19, regardless of mother's symptoms, should have testing performed at approximately 24 hours of age. If initial test results are negative, or not available, testing should be repeated at 48 hours of age.
- For asymptomatic neonates expected to be discharged at <48 hours of age, a single test can be performed prior to discharge, between 24-48 hours of age.

Prioritization of testing

- In areas with limited testing capacity, testing should be prioritized for neonates with signs suggestive of COVID-19 as well neonates with SARS-CoV-2 exposure requiring higher levels of care or who are expected to have prolonged hospitalizations (>48-72 hours depending on delivery mode).

Limitations and interpretation of testing

- The optimal timing of testing after birth is unknown. Early testing may lead to false positives (e.g., if the neonate's nares, nasopharynx and/or oropharynx are contaminated by SARS-CoV-2 RNA in maternal fluids) or false negatives (e.g., RNA may not yet be detectable immediately after exposure following birth).

Infection prevention and control

Rates of SARS-CoV-2 infection in neonates do not appear to be affected by mode of delivery, method of infant feeding, or contact with a mother with suspected or confirmed SARS-CoV-2 infection. All neonates born to mothers with suspected or confirmed infection should be considered as having suspected SARS-CoV-2 infection when test results are not available.

In general, mothers with suspected or confirmed SARS-CoV-2 infection and their neonates should be isolated from other healthy mothers and neonates and cared for according to recommended infection prevention and control practices for routine healthcare delivery. If a neonate does not remain in the mother's room, facilities should consider the institution's capacity and resources as well as the potential risk of SARS-CoV-2 transmission to other high-risk neonates when determining where the neonate should be isolated.

Isolating infants with suspected or confirmed SARS-CoV-2 infection in a Neonatal Intensive Care Unit (NICU) should be avoided unless the neonate's clinical condition warrants NICU admission. Locating neonates with suspected or confirmed SARS-CoV-2 infection in a NICU may unnecessarily increase the risk of exposing other vulnerable infants and NICU staff to SARS-CoV-2. In some hospitals, a NICU may be the only suitable environment for appropriate care of an isolated neonate. Therefore, determination about best placement should be made at the facility level.

Mother/neonatal contact

Early and close contact between the mother and neonate has many well-established benefits. The ideal setting for care of a healthy, term newborn while in the hospital is in the mother's room, commonly called "rooming-in." Current evidence suggests the risk of a neonate acquiring SARS-CoV-2 from its mother is low. Further, data suggests that there is no difference in risk of SARS-CoV-2 infection to the neonate whether a neonate is cared for in a separate room or remains in the mother's room.

There is, however, a potential risk of SARS-CoV-2 transmission to the neonate via contact with infectious respiratory secretions from the mother, caregiver, or other person with SARS-CoV-2 infection, including just before the individual develops symptoms when viral replication may be high. As such, all caregivers should practice infection prevention and control measures (i.e., wearing a mask, practicing hand hygiene) before and while caring for a neonate.

Mothers with suspected or confirmed SARS-CoV-2 infection may feel uncomfortable with this potential risk. Ideally, each mother and her healthcare providers should discuss whether she would like the neonate to be cared for in her room or a separate location if she is suspected or confirmed of having COVID-19, weighing the considerations listed below. It's easiest to begin this conversation during prenatal care and continue it through the intrapartum period. Healthcare providers should respect maternal autonomy in the medical decision-making process.

Considerations for discussions on whether a neonate should remain in the mother's room include:

- Mothers who room-in with their infants can more easily learn and respond to their feeding cues, which helps establish breastfeeding. Breastfeeding reduces morbidity and mortality for both mothers and their infants. Mothers who choose to breastfeed should take measures, including wearing a mask and practicing hand hygiene, to minimize the risk of virus transmission while feeding. Additional information for healthcare providers on breastfeeding in the context of COVID-19 is available.
- Mother-infant bonding is facilitated by keeping the neonate with its mother.
- Rooming-in promotes family-centered care and can allow for parent education about newborn care and infection prevention and control practices.
- Mothers with suspected or confirmed SARS-CoV-2 infection should not be considered as posing a potential risk of virus transmission to their neonates if they have met the criteria for discontinuing isolation and precautions:
    - At least 10 days have passed since their symptoms first appeared (up to 20 days if they have more severe to critical illness or are severely immunocompromised), and
    - At least 24 hours have passed since their last fever without the use of antipyretics, and
    - Their other symptoms have improved.
- Mothers who have not met these criteria may choose to temporarily separate from their neonates in effort to reduce the risk of virus transmission. However, if after discharge they will not be able to maintain separation from their neonate until they meet the criteria, it is unclear whether temporary separation while in the hospital would ultimately prevent SARS-CoV-2 transmission to the neonate, given the potential for exposure from the mother after discharge.
- Separation may be necessary for mothers who are too ill to care for their infants or who need higher levels of care.
- Separation may be necessary for neonates at higher risk for severe illness (e.g., preterm infants, infants with underlying medical conditions, infants needing higher levels of care).
- Separation in order to reduce the risk of transmission from a mother with suspected or confirmed SARS-CoV-2 to her neonate may not be necessary if the neonate tests positive for SARS-CoV-2.

Measures to Minimize Risk of Transmission

If the neonate remains in the mother's room, measures that can be taken to minimize the risk of transmission from a mother with suspected or confirmed COVID-19 to her neonate include:

- Mothers should wear a mask and practice hand hygiene during all contact with their neonates. Of note, plastic infant face shields are not recommended, and masks should **not** be placed on neonates or children younger than 2 years of age.
- Engineering controls, such as maintaining a physical distance of ≥6 feet between the mother and neonate or placing the neonate in an incubator, should be used when feasible. If the infant is kept in an incubator, it is important to educate the mother and other caregivers, including hospital personnel, on proper use (i.e., latching doors) in order to prevent newborn falls.

A healthy caregiver who is not at increased risk for severe illness, using appropriate infection prevention precautions (e.g., wearing a mask, practicing hand hygiene), should provide care for the neonate, if possible.

Disposition

Neonates who otherwise meet clinical criteria for discharge do not require the results of SARS-CoV-2 testing for discharge. If available, results from the neonate's test should be communicated to the family and outpatient healthcare provider.

To determine when to end home isolation for a neonate with suspected or confirmed SARS-CoV-2 infection, parents and other caregivers should follow published recommendations. Neonates with suspected or confirmed COVID-19, or ongoing exposure, require close outpatient follow-up after discharge.

Additional Key Resources:

- Considerations for Inpatient Obstetric Healthcare Settings
- Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19
- Pregnancy, Breastfeeding, and Caring for Young Children
- Breastfeeding
- Coping with Stress
- How to Protect Yourself & Others

CDC Guidance: Evaluation and Management Considerations for Neonates at Risk for COVID-19

Considerations for Inpatient Obstetric Healthcare Settings

These infection prevention and control considerations are for healthcare facilities providing obstetric care for pregnant patients with suspected[1] or confirmed coronavirus disease (COVID-19) in inpatient obstetric healthcare settings including obstetrical triage, labor and delivery, recovery and inpatient postpartum settings.

This information is intended to aid hospitals and clinicians in applying broader CDC interim guidance on infection prevention and control for COVID-19.

Since maternity and newborn care units vary in physical configuration, each facility should consider their appropriate space and staffing needs to prevent transmission of the virus that causes COVID-19. These considerations include appropriate isolation of pregnant patients who have suspected[1] or confirmed COVID-19; basic and refresher training for all healthcare personnel on those units to include correct adherence to infection control practices and personal protective equipment (PPE) use and handling; and sufficient and appropriate PPE supplies positioned at all points of care.

These considerations are based upon the limited evidence available to date about transmission of the virus that causes COVID-19. The approaches outlined below are intentionally cautious until additional data become available to refine recommendations for prevention of person-to-person transmission in inpatient obstetric care settings.

Prehospital Considerations

- Pregnant patients with suspected[1] or confirmed COVID-19 should notify the obstetric unit prior to arrival so the facility can make appropriate infection control preparations such as: identifying the most appropriate room for labor and delivery, ensuring infection prevention and control supplies and PPE are correctly positioned, and informing all healthcare personnel who will be involved in the patient's care of infection control expectations before the patient's arrival.
- If a pregnant patient who has suspected[1] or confirmed COVID-19 is arriving via transport by emergency medical services, the driver should contact the receiving emergency department or healthcare facility and follow previously agreed-upon local or regional transport protocols. For more information refer to the Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States.
- Healthcare providers should promptly notify infection control personnel at their facility of the anticipated arrival of a pregnant patient who has suspected[1] or confirmed COVID-19.

During Hospitalization

- Pregnant women admitted with suspected[1] COVID-19 or who develop symptoms consistent with COVID-19 during admission should be prioritized for testing. Testing of asymptomatic pregnant women is at the discretion of the healthcare provider and facility. Healthcare facilities should ensure recommended infection control practices for hospitalized pregnant patients who have suspected or confirmed COVID-19 are consistent with Interim Infection Prevention and Control Recommendations.
- All healthcare facilities that provide obstetric care must ensure that their personnel are correctly trained and capable of implementing recommended infection control interventions, including the use of personal protective equipment. Individual healthcare personnel should ensure they understand and can adhere to infection control requirements.
- Healthcare facilities providing inpatient obstetrical care should limit visitors to pregnant women who have known or suspected COVID-19 infections.
    - Visitors should be limited to those essential for the pregnant woman's well-being and care (emotional support persons).

        - Depending upon the extent of community-transmission, institutions may consider limiting visitors to one essential support person and having that person be the same individual throughout the hospitalization.
        - Use of alternative mechanisms for patient and visitor interactions, such as video-call applications, can be encouraged for any additional support persons.
    - Any visitors permitted to labor and delivery should be screened for symptoms of COVID-19 and should not be allowed entry if fever or other symptoms are present.
    - Visitors should be informed about use of masks (including cloth face coverings) for any person entering the healthcare facility and about appropriate use of personal protective equipment according to current facility visitor policy. Visitors should be instructed to only visit the patient room and should not go to other locations within the facility, including any newborn nursery.

Considerations for Newborns and Breastfeeding

CDC has developed recommendations for healthcare providers caring for neonates (newborns) at risk for COVID-19, including testing and infection prevention and control considerations, as well as guidance for care of breastfeeding mothers. For more information, visit Evaluation and Management Considerations for Neonates At Risk for COVID-19 and Guidance on Care for Breastfeeding Women.

Disposition

Patients with COVID-19 can be discharged from the healthcare facility whenever clinically indicated. Meeting criteria for discontinuation of Transmission-Based Precautions is not a prerequisite for discharge.

Patients who are able to be discharged from the hospital but have not met criteria to discontinue isolation and wish to reduce the risk of transmission to their newborn may continue temporary separation at their place of residence (if feasible) until cleared to discontinue home isolation following either the symptom-based strategy or testing based strategy. When temporary separation is being considered, its risks and benefits should be discussed by the mother and the healthcare team. Decisions about temporary separation should be made in accordance with the mother's wishes. For more information, refer to guidance in the Ending Home Isolation for Persons with COVID-19 Not in Healthcare Settings.

People who are caring for infants and young children may experience increased stress, feelings of isolation, or loneliness because of social distancing measures during the COVID-19 outbreak or related temporary separation. Postpartum depression symptoms may be worsened because of COVID-19 social distancing measures. Providers are encourage to share resources with patients about coping with stress during the COVID-19 pandemic.

Footnote:

[1] For the purpose of obstetric care, a suspected COVID-19 case is someone who has symptoms of COVID-19, or has had a recent high risk contact (such as a family member at home with COVID-19) and does not have a negative test result (either because no test was done or because the test is still pending). Some facilities may choose to test all patients regardless of symptoms or known exposure as part of a universal testing protocol. Regardless of pending test results, pregnant individuals who are asymptomatic at the time of admission and have no history of high-risk contact should not be considered to be suspected cases.

CDC Guidance: Considerations for Inpatient Obstetric Healthcare Settings

Care for Breastfeeding Women

Key Points

- Breast milk is the best source of nutrition for most infants. We do not know whether mothers with COVID-19 can transmit the virus via breast milk, but the limited data available suggest this is not likely to be a source of transmission.
- Whether and how to start or continue breastfeeding should be determined by the mother in coordination with her family and healthcare providers.
- A mother with confirmed COVID-19 should be counseled to take all possible precautions to avoid spreading the virus to her infant, including hand hygiene and wearing a cloth face covering.

This interim guidance is intended for healthcare providers who care for breastfeeding women and infants who receive breast milk feeds in the context of coronavirus disease 2019 (COVID-19). This interim guidance is based on what is currently known about SARS-CoV-2, the virus that causes COVID-19, and the transmission of other viral respiratory pathogens. CDC will update this interim guidance as additional information becomes available. For breastfeeding guidance in the immediate postpartum setting, refer to Considerations for Inpatient Obstetric Healthcare Settings.

Transmission of SARS-CoV-2 through breast milk

These considerations are based upon the limited evidence available to date about transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19, and knowledge of other viruses that cause severe respiratory illness including influenza and severe acute respiratory syndrome coronavirus (SARS-CoV).

Breast milk is the best source of nutrition for most infants, and it provides protection against many illnesses. There are rare exceptions when breastfeeding or feeding expressed breast milk is not recommended. We do not know whether mothers with COVID-19 can transmit the virus via breast milk, but the limited data available suggest this is not likely to be a source of transmission.

Pasteurized donor human milk is important in the care of preterm infants. No information is currently available regarding the effect of pasteurization on SARS-CoV-2 but similar viruses are inactivated with this process. Disruptions in human milk donations may be seen during the COVID-19 pandemic. If hospitals have difficulty acquiring donor human milk, available supplies should be prioritized for preterm infants who will benefit most from human milk feeds.

Guidance on breastfeeding for mothers in the context of COVID-19

Whether and how to start or continue breastfeeding should be determined by the mother, in coordination with her family and healthcare providers.

A mother with suspected, probable, or confirmed COVID-19 should be counseled to take all possible precautions to avoid spreading the virus to her infant. She should be instructed to wash her hands using soap and water, especially if her hands are visibly soiled, before touching the infant. If soap and water are not available, she should use a hand sanitizer with at least 60% alcohol. Additionally, mothers should wear a cloth face covering while feeding at the breast. If expressing breast milk either by hand expression or with a breast pump, the mother should clean her hands, as instructed above, before touching any pump or bottle parts and wear a cloth face covering. Mothers should be educated about recommendations on how to properly clean and sanitize breast pumps. If possible, expressed breast milk should be fed to the infant by a healthy caregiver, who is not at high-risk for severe illness from COVID-19.

Breastfeeding mothers who work in settings with higher risk of potential exposure to SARS-CoV-2, such as healthcare personnel and first responders, may have additional concerns related to expression of breast milk while at work. These mothers should follow the same recommendations outlined above given they may be at higher risk of infection with SARS-CoV-2. Ideally, employers would provide breastfeeding employees with a private, non-bathroom space for milk

expression. Additional information for healthcare personnel, including those who are pregnant, have underlying medical conditions, or who are living with someone who is at risk for severe illness from COVID-19, is available.

There is evidence that SARS-CoV-2 remains on surfaces for several hours to days. Healthcare providers should discuss a mother's individual circumstances (e.g., level of exposure to persons with suspected or confirmed COVID-19, availability and proper use of personal protective equipment) when counseling the mother about additional precautions prior to breastfeeding or expression of breast milk while at work. Currently, there is a lack of evidence to support precautions such as cleansing the breast prior to breastfeeding or milk expression or disinfecting external surfaces of milk collection devices (e.g., bottles, milk bags), as steps to reduce potential transmission of SARS-CoV-2. Mothers may consider additional steps such as these to minimize theoretic potential routes of exposure. Additional information on disinfecting facilities, such as workplace lactation rooms, is available.

Breastfed infants of women with confirmed COVID-19

An infant being breastfed by a mother who is confirmed to have COVID-19 should be considered as having suspected COVID-19 for the purposes of infection control and prevention for the duration of the mother's recommended period of home isolation. The same approach should be taken with respect to an infant who has any other ongoing, close contact with another person who has confirmed COVID-19. Mothers should be counseled to inform their child's healthcare provider that their child has had high-risk contact with a person confirmed to have COVID-19.

Well child checks and lactation services

Healthcare providers are encouraged to prioritize newborn care and vaccination of infants and young children (through 24 months of age) when possible. Given the potential challenges related to breastfeeding in the context of COVID-19, the need for weight checks and visual or laboratory assessment for jaundice, and the stressors of social distancing, every effort should be made to conduct newborn follow-up visits in person. Healthcare providers should consider how to minimize exposure to the SARS-CoV-2 virus for patients, caregivers, and staff in the context of their local COVID-19 epidemiology and practice environment. Additional information on infection prevention and control in the healthcare setting is available.

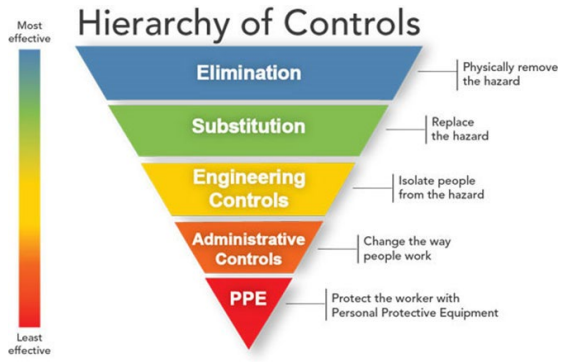
Alternative approaches, such as telemedicine, may be considered when providing lactation support services to breastfeeding pairs. Lactation service providers who must see a mother or infant with suspected or confirmed COVID-19 should follow recommended infection prevention and control measures, including the use of recommended personal protective equipment (PPE). If no PPE is available, then lactation service providers should carefully consider if alternative approaches will reduce the risk of exposure for the lactation service provider and are safe for care of the breastfeeding pair.

CDC Guidance: Care for Breastfeeding Women

Strategies for Optimizing the Supply of N95 Respirators

Once personal protective equipment (PPE) supplies and availability return to normal, healthcare facilities should promptly resume conventional practices.

Controlling exposures to occupational hazards is a fundamental way to protect personnel. Conventionally, a hierarchy has been used to achieve feasible and effective controls. Multiple control strategies can be implemented concurrently and or sequentially. This hierarchy can be represented as follows:



- Elimination
- Substitution
- Engineering controls
- Administrative controls
- Personal protective equipment (PPE)

To prevent infectious disease transmission, elimination (physically removing the hazard) and substitution (replacing the hazard) are not typically options for healthcare settings. However, exposures to transmissible respiratory pathogens in healthcare facilities can often be reduced or possibly avoided through engineering and administrative controls and PPE. Prompt detection and effective triage and isolation of potentially infectious patients are essential to prevent unnecessary exposures among patients, healthcare personnel (HCP), and visitors at the facility.

N95 respirators are the PPE most often used to control exposures to infections transmitted via the airborne route, though their effectiveness is highly dependent upon proper fit and use. N95 respirators are intended to be used once and then properly disposed of and replaced with a new N95 respirator. The optimal way to prevent airborne transmission is to use a combination of interventions from across the hierarchy of controls, not just PPE alone. Applying a combination of controls can provide an additional degree of protection, even if one intervention fails or is not available.

Respirators, when required to protect HCP from airborne contaminants such as some infectious agents, must be used in the context of a comprehensive, written respiratory protection program that meets the requirements of OSHA's Respiratory Protection standard. The program should include medical evaluations, training, and fit testing.

Surge capacity refers to the ability to manage a sudden increase in patient volume that would severely challenge or exceed the present capacity of a facility. While there are no commonly accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of N95 respirators during the COVID-19 response. To help healthcare facilities plan and optimize the use of respiratory protection in response to COVID-19, CDC has developed a Personal Protective Equipment (PPE) Burn Rate Calculator. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve N95 respirator supplies along the continuum of care.[1]

- **Conventional capacity:** measures consisting of engineering, administrative, and PPE controls should already be implemented in general infection prevention and control plans in healthcare settings.
- **Contingency capacity:** measures that may be used temporarily during periods of expected N95 respirator shortages. Contingency capacity strategies should only be implemented after considering and implementing conventional capacity strategies. While current supply may meet the facility's current or anticipated utilization

- rate, there may be uncertainty if future supply will be adequate and therefore, contingency capacity strategies may be needed.
- **Crisis capacity:** strategies that are not commensurate with U.S. standards of care but may need to be considered during periods of known N95 respirator shortages. Crisis capacity strategies should only be implemented after considering and implementing conventional and contingency capacity strategies. Facilities can consider crisis capacity when the supply is not able to meet the facility's current or anticipated utilization rate.

CDC's optimization strategies for N95 respirator supply offer a continuum of options for use when PPE supplies are stressed, running low, or exhausted. Contingency and then crisis capacity measures augment conventional capacity measures and are meant to be considered and **implemented sequentially**. Once N95 respirator availability returns to normal, healthcare facilities should promptly resume conventional practices.

Decisions to implement contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their NIOSH-approved respirator inventory and supply chain
2. Facilities understand their NIOSH-approved respirator utilization rate
3. Facilities are in communication with local healthcare coalitions and federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) to identify additional supplies
4. Facilities have already implemented other engineering and administrative control measures including:
    - Use physical barriers and other engineering controls
    - Limit number of patients going to hospital or outpatient settings
    - Use telemedicine whenever possible
    - Limit all HCP not directly involved in patient care
    - Limit face-to-face HCP encounters with patients
    - Limit visitors to the facility to those essential for the patient's physical or emotional well-being and care (e.g., care partner, parent)
    - Cohort patients and/or HCP
5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care

Once availability of NIOSH-approved respirators returns to normal, healthcare facilities should promptly resume conventional practices. Determining the appropriate time to return to conventional strategies can be challenging. Considerations affecting this decision include:

1. The number of patients for whom respirator use is recommended for their care (e.g., number of patients with suspected or confirmed SARS-CoV-2 infection)
2. Whether there is evidence of ongoing SARS-CoV-2 transmission in the facility
3. The incidence of COVID-19 in the community
4. The number of days' supply of respirators currently remaining at the facility
5. Whether or not the facility is receiving regular resupply with its full allotment

Conventional Capacity Strategies (should be incorporated into everyday practices)

Engineering Controls

Engineering controls reduce exposures for HCP by placing a barrier between the hazard and the HCP. Engineering controls can be very effective as part of a suite of strategies to protect HCP without placing primary responsibility of implementation on them (i.e., they function without HCP having to take an action).

Selective use of airborne infection isolation rooms

Aerosol-generating procedures performed on patients with suspected or confirmed SARS-CoV-2 infection should take place in an airborne infection isolation room (AIIR), if possible. The AIIR should be constructed and maintained in accordance with current guidelines, as recommended in CDC's Interim Infection Prevention and Control

Recommendations for Healthcare Personnel During COVID-19. Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation. Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation.

Use of physical barriers

Barriers such as glass or plastic windows can be an effective solution for reducing exposures among HCP to potentially infectious patients. This approach can be effective in reception areas (e.g., intake desk at emergency department, triage station, information booth, pharmacy drop-off/pick-up windows) where patients may first report upon arrival to a healthcare facility. Other examples include the use of curtains between patients in shared areas and closed suctioning systems for airway suctioning for intubated patients.

Properly maintained ventilation systems

Another cornerstone of engineering controls are ventilation systems that provide air movement from a clean (HCP workstation or area) to contaminated (sick patient) flow direction (along with appropriate filtration, exchange rate) that are installed and properly maintained.

Administrative Controls

Administrative controls are employer-dictated work practices and policies that reduce or prevent hazardous exposures. Their effectiveness depends on employer commitment and HCP acceptance and consistent use of the strategies.

Limit number of patients going to hospital or outpatient settings

Develop mechanisms to screen patients for acute respiratory illness or prolonged close contact with someone with SARS-CoV-2 infection prior to their healthcare visits, such as through the appointment reminder system. Postpone and reschedule those with signs and symptoms or exposures presenting for non-acute visits.

Telemedicine

Nurse advice lines and telemedicine can screen and manage patients with suspected or confirmed SARS-CoV-2 infection or prolonged close contact with someone with SARS-CoV-2 infection without the need for a face-to-face visit. Promoting the use of these technologies and referral networks can help triage persons to the appropriate level of care, potentially reducing the influx of patients to healthcare facilities and reserving personal protective equipment for when it is needed.

Limit all HCP not directly involved in patient care

CDC guidance recommends that, for patients with SARS-CoV-2 infection, only essential personnel enter the patient care area, and that facilities consider caring for these patients with dedicated HCP. Further limiting the numbers of HCP and patient contacts to those that are medically essential (e.g., excluding dietary personnel, environmental services) could limit the number of respirators used. The medically essential personnel would assume food delivery and environmental services.

Limit face-to-face HCP encounters with patient

Measures can be explored to limit face-to-face contact encounters between HCP and patients with confirmed or suspected SARS-CoV-2 infection. HCP may consider bundling care activities to minimize room entries, and bundling may occur across HCP types (e.g., food trays are delivered by HCP performing other care). Alternative mechanisms for HCP and patient interactions include telephones, video monitoring, and video-call applications on cell phones or tablets.

Limit visitors to the facility to those essential for patients' physical or emotional well-being and care (e.g., care partner, parent).

Encourage use of alternative mechanisms for patient and visitor interactions, such as video-call applications on cell phones or tablets.

Source control

Everyone entering the healthcare facility should practice source control. Source control refers to use of cloth face coverings or facemasks to cover a person's mouth and nose to prevent spread of respiratory secretions when they are talking, sneezing, or coughing. Because of the potential for asymptomatic and pre-symptomatic transmission, source control measures are recommended for everyone in a healthcare facility, even if they do not have symptoms of COVID-19. Additional information about source control is available in the Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic.

Cohorting patients

Cohorting is the practice of grouping together patients who are infected with the same organism to confine their care to one area and prevent contact with other patients. Cohorts are created based on clinical diagnosis, microbiologic confirmation when available, epidemiology, and mode of transmission of the infectious agent. Cohorting has been used extensively for managing outbreaks of multidrug resistant organisms including MRSA, VRE, MDR-ESBLs, *Pseudomonas aeruginosa;* methicillin-susceptible *Staphylococcus aureus*, RSV, adenovirus keratoconjunctivitis, rotavirus, and SARS. When single patient rooms are not available, patients with **confirmed** SARS-CoV-2 infection may be placed in the same room. Cohorting patients could minimize respirator use when extended wear of respirators is implemented. For more information on cohorting of patients, refer to 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (last update July 2019).

Cohorting HCP

Assigning designated teams of HCP to provide care for all patients with suspected or confirmed SARS-CoV-2 infection could minimize respirator use when extended wear of respirators is implemented. This strategy can also limit the number of exposed HCP who need to be fit tested.

Training on use and indications for use of N95 respirators

Just-in-time fit testing

Just-in-time fit testing refers to the capacity of healthcare facilities to do larger scale evaluation, training, and fit testing of employees when necessary during a pandemic. Facilities may adopt a plan to use the "just-in-time" method for fit testing, which has been incorporated into pandemic plans for many facilities. For large facilities, it may not be feasible to fit test all employees, especially if their job does not typically place them at risk for exposure to airborne infectious diseases such as tuberculosis. If healthcare facilities are expecting to receive patients with SARS-CoV-2 infection, they should begin training and start to plan for fit testing now. It is essential to have HCP trained and fit tested prior to receiving patients. This just-in-time fit testing approach could also be used for healthcare facilities that might receive different respirators than their usual supply because of shortages.

Limiting respirators during training

In order to conserve the supply of N95 respirators, healthcare facilities should understand which of their HCP need to be in a respiratory protection program and thus medically evaluated, trained, and fit tested. If training and fit testing are conducted during two separate steps, it is possible to allow limited re-use of N95 respirators used by individual HCP during training and then fit testing. Employees should be fit tested after they are comfortable donning the respirator and have passed a user seal check. The respirator might also be saved and then used for patient care.

Qualitative fit testing

Respirator fit test methods are classified as either qualitative or quantitative, and there are multiple protocols of each classification that are NIOSH-recommended or meet the requirements of OSHA's Respiratory Protection Standard. A qualitative fit test is a pass/fail test to assess the adequacy of respirator fit that relies on the individual's sensory detection of a test agent. A quantitative fit test numerically measures the effectiveness of the respirator to seal with the wearer's face, without relying on the wearer's voluntary or involuntary response to a test agent. Quantitative fit tests involve adaptation of the respirator to the fit testing equipment, which can involve making holes in the respirator.

Many healthcare systems already use qualitative fit test methods for fit testing HCP. For those using quantitative fit test methods, considerations can be made to use qualitative fit test methods to minimize the destruction of an N95 respirator used in fit testing and allow for the re-use of the same N95 respirator by the HCP.

Personal Protective Equipment: Respiratory Protection

While engineering and administrative controls should be considered first when selecting controls, the use of **personal protective equipment** (**PPE)** should also be part of a suite of strategies used to protect personnel. Proper use of respiratory protection by HCP requires a comprehensive program (including medical clearance, training, and fit testing) that complies with OSHA's Respiratory Protection Standard and a high level of HCP involvement and commitment. The program should also include provisions for the cleaning, disinfecting, inspection, repair, and storage of respirators used by HCP on the job according to manufacturer's instructions. Proper storage conditions can maximize shelf life of respirators. The following strategies in this section are traditionally used by some healthcare systems. If not already implemented, these strategies can be considered by healthcare settings in the face of a potential N95 respirator shortage before implementing the contingency strategies that are listed further below.

N95 respirators

N95 respirators include standard and surgical N95 respirators. In the United States, all N95 respirators used in occupational settings are approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with OSHA standards.

A surgical N95 respirator is a NIOSH-approved N95 respirator that has also been cleared by the FDA as a surgical mask. Surgical N95 respirators (sometimes called medical respirators) are recommended only for use by HCP who need protection from both airborne and fluid hazards, such as splashes or sprays. In times of shortage, only HCP who are working in a sterile field or who may be exposed to high-velocity splashes, sprays, or splatters of blood or body fluids should be provided these respirators. Other HCP can use standard N95 respirators. If surgical N95 respirators are not available, and there is a risk that the worker may be exposed to high velocity splashes, sprays, or splatters of blood or body fluids, then a face shield should be worn over the standard N95 respirator.

Use of alternatives to N95 respirators

Use NIOSH approved alternatives to N95 respirators where feasible. These include other classes of filtering facepiece respirators, elastomeric half-mask and full facepiece air purifying respirators, powered air purifying respirators (PAPRs). All of these alternatives will provide equivalent or higher protection than N95 respirators when properly worn. NIOSH maintains a searchable, online version of the certified equipment list identifying all NIOSH-approved respirators.

Every other NIOSH approved filtering facepiece respirators is at least as protective as the N95. These include N99, N100, P95, P99, P100, R95, . Many filtering facepiece respirators have exhalation valves and should not be used in surgical settings as unfiltered exhaled breath would compromise the sterile field. On March 2, 2020, FDA issued an Emergency Use Authorization (EUA) authorizing the use of certain NIOSH-approved respirator models in healthcare settings.

Elastomeric respirators are half-facepiece or full-facepiece, tight-fitting respirators that are made of synthetic or rubber material permitting them to be repeatedly disinfected, cleaned, and reused. They are equipped with replaceable filter cartridges. Similar to N95 respirators, elastomeric respirators require annual fit testing. Elastomeric respirators should not be used in surgical settings due to concerns that air coming out of the exhalation valve may contaminate the sterile field.

PAPRs are reusable respirators that are typically loose-fitting hoods or helmets. These respirators are battery-powered with blower that pulls air through attached filters or cartridges. The filter is typically a high-efficiency particulate air (HEPA) filter. Loose-fitting PAPRs do not require fit-testing and can be worn by people with facial hair. However, PAPRs should not be used in surgical settings due to concerns that the blower exhaust and exhaled air may contaminate the sterile field.

On July 12, 2021, FDA issued an update to address NIOSH-Approved Air Purifying Respirators for Use in Health Care Settings During Response to the COVID-19 Public Health Emergency. Facilities using elastomeric respirators and PAPRs should have up-to-date cleaning/disinfection procedures, which are an essential part of use for protection against infectious agents.

Contingency Capacity Strategies (during expected shortages)

Administrative Controls

Decrease length of hospital stay for medically stable patients with an infectious diagnosis for whom respirator use is recommended during their care

Currently, CDC recommends discharge of patients with suspected or confirmed SARS-CoV-2 infection when they are medically stable and have an appropriate home environment to which to return. CDC lists considerations for care at home in: Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for Coronavirus Disease 2019 (COVID-19). If patients cannot be discharged to home for social rather than medical reasons, public health officials might need to identify alternative non-hospital housing where those patients can convalesce.

Personal Protective Equipment: Respiratory Protection

Use of N95 respirators beyond the manufacturer-designated shelf life for training and fit testing

In times of shortage, consideration can be made to use N95 respirators beyond the manufacturer-designated shelf life. However, expired respirators might not perform to the requirements for which they were certified. Over time, components such as the strap and material may degrade, which can affect the quality of the fit and seal. Because of this, use of expired respirators could be prioritized for situations where HCP are NOT exposed to pathogens, such as training and fit testing. As expired respirators can still serve an important purpose, healthcare facilities should retain and reserve all N95 respirators during the pandemic.

Extended use of N95 respirators

Practices allowing extended use of N95 respirators, when acceptable, can also be considered. The decision to implement policies that permit extended use of N95 respirators should be made by the professionals who manage the institution's respiratory protection program, in consultation with their occupational health and infection control departments with input from the state/local public health departments. Extended use has been recommended and widely used as an option for conserving respirators during previous respiratory pathogen outbreaks and pandemics.

Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several different patients, without removing the respirator between patient encounters. Extended use is well suited to situations wherein multiple patients with the same infectious disease diagnosis, whose care requires use of a respirator, are cohorted (e.g., housed on the same hospital unit). It can also be considered to be used for care of patients with tuberculosis, varicella, and measles, other infectious diseases where use of an N95 respirator or higher is recommended. When practicing extended use of N95 respirators over the course of a shift, considerations should include 1) the ability of the N95 respirator to retain its fit, 2) contamination concerns, 3) practical considerations (e.g., meal breaks), and 4) comfort of the user. Ideally, N95 respirators should be discarded after extended use. If it is necessary to re-use N95 respirators in addition to extended use, please see re-use section under crisis capacity strategies below. N95 respirators should be discarded when contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients. HCP can consider using a face shield or facemask over the respirator to reduce contamination of the respirator, especially during aerosol generating procedures or procedures that might generate splashes and sprays.

Crisis Capacity Strategies (during known shortages)

When N95 Supplies are Running Low

Personal Protective Equipment: Respiratory Protection and Facemasks

Use of respirators beyond the manufacturer-designated shelf life for healthcare delivery

Consideration can be made to use N95 respirators beyond the manufacturer-designated shelf life for care of patients with diseases for which a respirator is recommended during their care (e.g., COVID-19, tuberculosis, measles, and

varicella). Many models found in U.S. stockpiles and stockpiles of healthcare facilities have been found to continue to perform in accordance with NIOSH performance standards. However, fluid resistance and flammability were not assessed. Use of the N95 respirators recommended in *Strategies for Optimizing the Supply of N95 Respirators during Shortages* can be considered. It is optimal to use these respirators in the context of a respiratory protection program that includes medical evaluation, training, and fit testing. If used in healthcare delivery, it is particularly important that HCP perform the expected seal check, prior to entering a patient care area. CDC does not recommend using N95s beyond the manufacturer-designated shelf life in surgical settings. On March 2, 2020, FDA issued an Emergency Use Authorization (EUA) authorizing the use of certain NIOSH-approved respirator models in healthcare settings. This EUA includes respirator units that are past their designated shelf life.

Use of respirators approved under standards used in other countries that are similar to NIOSH-approved respirators

As of May 2021 the supply and availability of NIOSH-approved respirators have increased significantly over the last several months. Healthcare facilities should not be using crisis capacity strategies at this time and should promptly resume conventional practices. Check the NIOSH Certified Equipment List to identify all NIOSH-approved respirators. Healthcare facilities should stop purchasing non-NIOSH approved respirators for use as respiratory protection and consider using any that have been stored for source control where respiratory protection is not needed. Respirators that were previously used and decontaminated should not be stored. We do not know the long-term stability of non-NIOSH approved respirators and respirators that have been decontaminated, and if these will be recommended for use in the future. Healthcare facilities should return to using only NIOSH-approved respirators where needed.

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Limited re-use of N95 respirators

Situational update as of May 2021: The supply and availability of NIOSH-approved respirators have increased significantly over the last several months. Healthcare facilities should not be using crisis capacity strategies at this time and should promptly resume conventional practices. Check the NIOSH Certified Equipment List to identify all NIOSH-approved respirators.

Healthcare facilities should stop purchasing non-NIOSH approved respirators for use as respiratory protection and consider using any that have been stored for source control where respiratory protection is not needed. Respirators that were previously used and decontaminated should not be stored. We do not know the long term stability of non-NIOSH approved respirators and respirators that have been decontaminated, and if these will be recommended for use in the future. Healthcare facilities should return to using only NIOSH-approved respirators where needed.

Re-use refers to the practice of using the same N95 respirator by one HCP for multiple encounters with different patients but removing it (i.e. doffing) after each encounter. This practice is often referred to as "limited reuse" because restrictions are in place to limit the number of times the same respirator is reused.[2] Re-use has been recommended as an option for conserving respirators during previous respiratory pathogen outbreaks and pandemics.

For pathogens for which contact transmission is not a concern, routine limited re-use of single-use disposable respirators has been practiced for decades. For example, for tuberculosis prevention, a respirator classified as disposable can be reused by the same provider as long as the respirator maintains its structural and functional integrity. If reuse must be implemented in times of shortages, HCP could be encouraged to reuse their N95 respirators when caring for patients with tuberculosis disease first. Limited re-use of N95 respirators when caring for patients with SARS-CoV-2 infection might also become necessary. However, it is unknown what the potential contribution of contact transmission is for SARS-CoV-2, and caution should be used.

It is important to consult with the respirator manufacturer regarding the maximum number of donnings or uses they recommend for the N95 respirator model. If no manufacturer guidance is available, data suggest limiting the number of reuses to **no more than five uses (five donnings) per device by the same HCP** to ensure an adequate respirator performance.[3] HCP should always inspect the respirator and perform a seal check upon donning a re-used respirator. For N95 respirators that have been donned more than five times and may need to be re-used again, respiratory protection program managers should consider implementing a qualitative respirator fit performance evaluation. N95 and other disposable respirators should not be shared by multiple HCP.

During times of crisis, practicing limited re-use while also implementing extended use can be considered. If limited re-use is practiced on top of extended use, caution should be used to minimize self-contamination and degradation of the respirator. If no manufacturer guidance is available, a reasonable limitation should continue to be five total donnings regardless of the number of hours the respirator is worn.

It may also be necessary to re-use N95 respirators when caring for patients with varicella or measles, although contact transmission poses a risk to HCP who implement this practice. Ideally, N95 respirators should not be re-used by HCP who care for patients with SARS-CoV-2 infection then care for other patients with varicella, measles, and tuberculosis, and vice versa.

Respirators soiled or grossly contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients should be discarded. HCP can consider using a face shield or facemask over the respirator to reduce/prevent contamination of the N95 respirator, especially during aerosol generating procedures or procedures anticipated to generate splashes and sprays. It is important to perform hand hygiene before and after the previously worn N95 respirator is donned or adjusted.

The surfaces of a properly donned and functioning NIOSH-approved N95 respirator will become contaminated with pathogens while filtering the inhalation air of the wearer during exposures to pathogen laden aerosols. The pathogens

on the filter materials of the respirator may be transferred to the wearer upon contact with the respirator during activities such as adjusting the respirator, improper doffing of the respirator, or when performing a user-seal check when redonning a previously worn respirator. One potentially effective strategy to mitigate the contact transfer of pathogens from the respirator to the wearer could be to issue each HCP who may be exposed to patients with SARS-CoV-2 infection a minimum of five respirators. Each respirator will be used on a particular day and stored in a breathable paper bag until the next week. This will result in each worker requiring a minimum of five N95 respirators if they put on, take off, care for them, and store them properly each day. This amount of time in between uses should exceed the 72-hour expected survival time for SARS-CoV-2 (the virus that causes COVID-19).[4] If this strategy is used, the total number of donnings should still not exceed five times before discarding the respirator, when no manufacturer instructions are provided to indicate otherwise. For N95 respirators that have been donned more than five times and may need to be re-used again, respiratory protection program managers should consider implementing a qualitative respirator fit performance evaluation.

If supplies are even more constrained, and five respirators are not available for each worker who needs them, N95 respirator limited re-use with respirator decontamination may be considered. Decontamination is a process to reduce the number of pathogens on used filtering facepiece respirators before re-using them. It is used to limit the risk of self-contamination. Decontamination of NIOSH-approved N95 respirators is not consistent with their approved use. Respirator manufacturers may provide guidance for respirator decontamination. The FDA has issued Emergency Use Authorizations to permit the use of certain N95 respirator decontamination systems during the COVID-19 pandemic. Decontamination may cause poorer fit and reduced filtration efficiency as a result of changes to the filtering material, straps, nose bridge material, or strap attachments of the filtering facepiece respirators and **will not increase the number of times (five donnings if not otherwise specified by the manufacturer) that an N95 respirator can be worn.** See additional considerations on re-use and potential methods of decontamination.

Use of additional respirators beyond the manufacturer-designated shelf life for healthcare delivery that have not been evaluated by NIOSH

Use of additional N95 respirators beyond the manufacturer-designated shelf life for care of patients for whom a respirator is recommended during their care (e.g., SARS-CoV-2 infection, tuberculosis, measles, varicella) can be considered. Some models have been found NOT to perform in accordance with NIOSH performances standards, and consideration may be given to use these respirators as identified in *Strategies for Optimizing the Supply of N95 Respirators during Shortages*. In addition, consideration can be given to use N95 respirators that have not been evaluated by NIOSH beyond the manufacturer-designated shelf life. These respirators should ideally be used in the context of a respiratory protection program that includes medical evaluation, training, and fit testing. It is particularly important that HCP perform the expected seal check, prior to entering a patient care area.

Prioritize the use of N95 respirators and facemasks by activity type

The number of infectious particles required to cause an infection (infectious dose) is often uncertain or unknown for respiratory pathogens. Further, there is often uncertainty about the influence of factors such as exposure duration and nature of clinical symptoms on the likelihood of infection transmission from person-to-person. When facemasks must be used by HCP entering a patient care area, source control (i.e. masking of patients) and maintaining distance from the patient are particularly important to reduce the risk of transmission.

This prioritization approach to conservation is intended to be used when N95 respirators are so limited that routinely practiced standards of care for all HCP wearing N95 respirators when caring for a patient with SARS-CoV-2 infection are no longer possible. N95 respirators beyond their manufacture-designated shelf life, when available, are preferable to use of facemasks. The use of N95s or elastomeric respirators or PAPRs should be prioritized for HCP with the highest potential exposures including being present in the room during aerosol generating procedures performed on symptomatic persons with SARS-CoV-2 infection.

*Suggested facemask or respirator use, based upon distance from a patient with suspected or known SARS-CoV-2 infection and use of source control**

HCP planned proximity to the case patient during encounter	Facemask or respirator determination	
	Patient masked for entire encounter (i.e., with source control)	**Unmasked patient or mask needs to be removed for any period of time during the patient encounter**
HCP will remain at greater than 6 feet from symptomatic patient	If HCP must enter the patient care area: facemask for source control. However, HCP should consider not entering the patient care area.	If HCP must enter the patient care area: facemask for source control. However, HCP should consider not entering the patient care area.
HCP will be within 6 feet of symptomatic patient, including providing direct patient care	Facemask	Any NIOSH-approved N95 respirator/ elastomeric /PAPR, based on availability or facemask if respirator unavailable
HCP will be present in the room during aerosol generating procedures	Any NIOSH-approved N95 respirator/ elastomeric /PAPR, based on availability	Any NIOSH-approved N95 respirator/ elastomeric /PAPR, based on availability
*Based on availability, organizations may require and/or individuals may voluntarily choose to utilize higher levels of protection. Guidance on additional PPE that should be worn during these encounters is available in the Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic.		

When No Respirators are Left

Administrative Controls

Exclude HCP at increased risk for severe illness from SARS-CoV-2 infection from contact with patients with known or suspected SARS-CoV-2 infection.

During severe resource limitations, consider excluding HCP who may be at increased risk for severe illness from SARS-CoV-2 infection, such as those of older age, those with chronic medical conditions, or those who may be pregnant, from caring for patients with confirmed or suspected SARS-CoV-2 infection.

Engineering Controls

Expedient patient isolation rooms for risk-reduction

Portable fan devices with high-efficiency particulate air (HEPA) filtration that are carefully placed can increase the effective air changes per hour of clean air to the patient room, reducing risk to individuals entering the room without respiratory protection. NIOSH has developed guidance for using portable HEPA filtration systems to create expedient patient isolation rooms. The expedient patient isolation room approach involves establishing a high-ventilation-rate, negative pressure, inner isolation zone that sits within a "clean" larger ventilated zone. In the absence of any remaining supply of N95 respirators, it may be possible to use this technology in conjunction with HCP wearing facemasks.

Ventilated Headboards

NIOSH has developed the ventilated headboard that draws exhaled air from a patient in bed into a HEPA filter, decreasing risk of HCP exposure to patient-generated aerosol. This technology consists of lightweight, sturdy, and adjustable aluminum framing with a retractable plastic canopy. The ventilated headboard can be deployed in combination with HEPA fan/filter units to provide surge isolation capacity within a variety of environments, from traditional patient rooms to triage stations, and emergency medical shelters. In the absence of any remaining supply of N95 respirators, it may be possible to use this technology in conjunction with HCP and/or patients wearing facemasks.

Sterilization systems for the re-use of N95 respirators

The Nevada Division of Emergency Management, Division of Public and Behavioral Health, and the Federal Emergency Management Agency have coordinated the use of a Battelle Sterilization System to sterilize N-95 masks for responders and health care workers in Nevada. Through the use of this system, N95 respirators will have the ability to be sterilized and re-used up to 20 times. This program will be available and at no cost to all Nevada healthcare facilities and first responders. This is an opportunity for all Nevada healthcare workers and first responders to prolong the use of their N95 respirator supply. Due to cost effective usage and space requirements, Nevada has decided to decommission the Battelle system in the state, effective December 1, 2020. However, those currently using, or who wish to use, the Battelle system may still utilize this resource positioned in other states nationwide. The Division of Emergency Management is leading coordination of utilization of the Battelle system for all interested. **Full CDC Guidance:** Strategies for Optimizing the Supply of N95 Respirators: Crisis/Alternate Strategies

Strategies for Optimizing the Supply of Isolation Gowns

Once PPE supplies and availability return to normal, healthcare facilities should promptly resume conventional practices.

Purpose: This document offers a series of strategies or options to optimize supplies of isolation gowns in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare facilities can refer to COVID-19 preparedness tools.

Surge capacity refers to the ability to manage a sudden increase in patient volume that would severely challenge or exceed the present capacity of a facility. While there are no widely accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of isolation gowns relative to need during the COVID-19 response. To help healthcare facilities plan and optimize the use of gowns in response to COVID-19, CDC has developed a Personal Protective Equipment (PPE) Burn Rate Calculator. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve isolation gown supplies along the continuum of care.

- **Conventional capacity:** measures consisting of engineering, administrative, and personal protective equipment (PPE) controls that should already be implemented in general infection prevention and control plans in healthcare settings.
- **Contingency capacity:** measures that may be used temporarily during periods of expected isolation gown shortages. Contingency capacity strategies should only be implemented after considering and implementing conventional capacity strategies. While current supply may meet the facility's current or anticipated utilization rate, there may be uncertainty if future supply will be adequate and, therefore, contingency capacity strategies may be needed.
- **Crisis capacity**: strategies that are not commensurate with standard U.S. standards of care but may need to be considered during periods of known gown shortages. Crisis capacity strategies should only be implemented after considering and implementing conventional and contingency capacity strategies. Facilities can consider crisis capacity strategies when the supply is not able to meet the facility's current or anticipated utilization rate.

CDC's optimization strategies for gown supply offer a continuum of options for use when there are anticipated or known shortages of gowns. Contingency and then crisis capacity measures augment conventional capacity measures and are meant to be considered and **implemented sequentially**.

Decisions to implement contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their current isolation gown inventory and supply chain
2. Facilities understand their isolation gown utilization rate
3. Facilities are in communication with local healthcare coalitions and federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) to identify additional supplies
4. Facilities have already implemented other engineering and administrative control measures including:
    - Use physical barriers and other engineering controls
    - Limit number of patients going to hospital or outpatient settings
    - Use telemedicine whenever possible
    - Exclude all HCP who are not directly involved in patient care from patient encounters
    - Limit face-to-face HCP encounters with patients
    - Exclude visitors to patients with known or suspected COVID-19
    - Cohort patients and/or HCP
5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care.

Once gown availability returns to normal, healthcare facilities should promptly resume conventional practices. Determining the appropriate time to return to conventional strategies can be challenging. Considerations affecting this decision include:

1. the number of patients requiring Transmission-Based Precautions (e.g., number of patients with suspected or confirmed SARS-CoV-2 infection)
2. whether there is evidence of ongoing SARS-CoV-2 transmission in the facility
3. the incidence of COVID-19 in the community
4. the number of days' supply of PPE items currently remaining at the facility
5. whether or not the facility is receiving regular resupply with its full allotment.

Conventional Capacity Strategies

Note: In general, CDC does not recommend the use of more than one isolation gown at a time by HCP when providing care to patients with suspected or confirmed SARS-CoV-2 infection.

Use isolation gown alternatives that offer equivalent or higher protection.

Several fluid-resistant and impermeable protective clothing options are available in the marketplace for HCP. These include isolation gowns and surgical gowns. When selecting the most appropriate protective clothing, employers should consider all of the available information on recommended protective clothing, including the potential limitations. Nonsterile, disposable patient isolation gowns, which are used for routine patient care in healthcare settings, are appropriate for use by HCP when caring for patients with suspected or confirmed COVID-19. In times of gown shortages, surgical gowns should be prioritized for surgical and other sterile procedures. In March 2020, FDA issued an enforcement policy for gowns and other apparel during the COVID-19 pandemic. In May 2020, FDA issued an Emergency Use Authorization regarding the use of certain gowns in healthcare settings.

Reusable (i.e., washable) gowns are typically made of polyester or polyester-cotton fabrics. Gowns made of these fabrics can be safely laundered after each use according to routine procedures and reused.

Laundry operations and personnel may need to be augmented to facilitate additional washing loads and cycles. Systems are established to:

- routinely inspect, maintain (e.g., mend a small hole in a gown, replace missing fastening ties)
- replace reusable gowns when needed (e.g., when they are thin or ripped)
- store laundered gowns in a manner such that they remain clean until use.

Contingency Capacity Strategies

Decrease length of stay for medically stable patients with COVID-19.

Selectively cancel elective and non-urgent procedures and appointments for which a gown is typically used by HCP.

Consider the use of coveralls.

Coveralls are less convenient to use in most healthcare settings. Their one-piece design covers the back and lower legs, in addition to arms and the front of the body, making them useful for situations in which vigorous physical mobility is anticipated (e.g., emergency medical services). If coveralls are used, the material and seams should be appropriate to serve the intended barrier function effectively. Facilities should anticipate challenges and potential hazards to staff related to doffing coveralls and should provide training and practice in their safe use and designated places for donning and doffing, before providing them for patient care.

In the United States, the NFPA 1999 standard specifies the minimum design, performance, testing, documentation, and certification requirements for new single-use and new multiple-use emergency medical operations protective clothing, including coveralls for HCP.

Use of gowns beyond the manufacturer-designated shelf life for training.

The majority of isolation gowns do not have a manufacturer-designated shelf life. However, consideration can be made to using gowns that do and are past their manufacturer-designated shelf life. If there is no shelf-life information available on the gown label or packaging, facilities should contact the manufacturer.

Use gowns or coveralls conforming to international standards.

Current guidelines do not require use of gowns that conform to any regulatory standards. In times of shortages, healthcare facilities can consider using international gowns and coveralls. Gowns and coveralls that conform to international standards, including with EN 13795 high performance gowns and EN14126 Class 5–6 coveralls, could be reserved for activities that may involve moderate to high amounts of body fluids.

Crisis Capacity Strategies

Cancel all elective and non-urgent procedures and appointments for which a gown is typically used by HCP.

Extended use of isolation gowns.

Consideration can be made to extend the use of isolation gowns (disposable or reusable) such that the same gown is worn by the same HCP when interacting with more than one patient housed in the same location and known to be infected with the same infectious disease (i.e., COVID-19 patients residing in an isolation cohort). However, this can be considered **only** if there are no additional co-infectious diagnoses transmitted by contact (such as *Clostridioides difficile, Candida auris*) among patients. If the gown becomes visibly soiled, it must be removed and discarded or changed as per usual practices.

Prioritize gowns.

Gowns should be prioritized for the following activities:

- During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures
- During the following high-contact patient care activities that provide opportunities for transfer of pathogens to other patients and staff via the soiled clothing of healthcare providers, such as:
    - Dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care

Surgical gowns should be prioritized for surgical and other sterile procedures. If used for isolation purposes, the gown must be removed and changed if it becomes soiled, as per usual practices. Different areas of the surgical gown may provide different levels of barrier protection. Facilities may consider suspending use of gowns for endemic multidrug resistant organisms (e.g., MRSA, VRE, ESBL-producing organisms). Note: the organisms that are considered endemic can vary in different regions. In general, isolation gowns, as part of Contact Precautions, should continue to be used for patients colonized or infected with emerging highly resistant organisms including *Candida auris*, carbapenemase-producing carbapenem-resistant Enterobacterales, Carbapenem-resistant *Pseudomonas* and *Acinetobacter*, and pan-resistant organisms.

Consider using gown alternatives.

In situation of severely limited or no available isolation gowns, the following pieces of clothing can be considered as a last resort for care of COVID-19 patients as single use. However, none of these options can be considered PPE, since their capability to protect HCP is unknown. Preferable features include long sleeves and closures (snaps, buttons) that can be fastened and secured.

- Disposable laboratory coats
- Reusable (washable) patient gowns
- Reusable (washable) laboratory coats
- Disposable aprons

- Combinations of pieces of clothing can be considered for activities that may involve high amounts of body fluids and when there are no gowns available:

Reusable patient gowns and lab coats can be safely laundered according to routine procedures.

- Laundry operations and personnel may need to be augmented to facilitate additional washing loads and cycles
- Systems are established to routinely inspect, maintain (e.g., mend a small hole in a gown, replace missing fastening ties) and replace reusable gowns when needed (e.g., when they are thin or ripped)

Re-use of isolation gowns.

The risks to HCP and patient safety must be carefully considered before implementing a gown reuse strategy. Disposable gowns generally should NOT be re-used, and reusable gowns should NOT be reused before laundering, because reuse poses risks for possible transmission among HCP and patients that likely outweigh any potential benefits. Similar to extended gown use, gown reuse has the potential to facilitate transmission of organisms (e.g., *C. auris*) among patients. However, unlike extended use, repeatedly donning and doffing a contaminated gown may increase risk for HCP self-contamination. If reuse is considered, gowns should be dedicated to care of individual patients. Any gown that becomes visibly soiled during patient care should be disposed of or, if reusable, laundered.

Link to full CDC Guidance: Strategies for Optimizing the Supply of Isolation Gowns

Strategies for Optimizing the Supply of Eye Protection

Cancel all elective and non-urgent procedures and appointments for which eye protection is typically used by HCP

Extended use of eye protection

Use eye protection devices beyond the manufacturer-designated shelf life during patient care activities. If there is no date available on the eye protection device label or packaging, facilities should contact the manufacturer. The user should visually inspect the product prior to use and, if there are concerns (such as degraded materials), discard the product.

Prioritization measures

Prioritize eye protection for selected activities such as:

- During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures.
- During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable.

Also consider using safety glasses (e.g., trauma glasses) that have extensions to cover the side of the eyes.

Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients

During severe resource limitations, consider excluding HCP who may be at higher risk for severe illness from COVID-19, such as those of older age, those with chronic medical conditions, or those who may be pregnant, from caring for patients with confirmed or suspected COVID-19 infection.

Designate convalescent HCP for provision of care to known or suspected COVID-19 patients

It may be possible to designate HCP who have clinically recovered from COVID-19 to preferentially provide care for additional patients with COVID-19. Individuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been confirmed.

Selected Options for Reprocessing Eye Protection

Adhere to recommended manufacturer instructions for cleaning and disinfection

When manufacturer instructions for cleaning and disinfection are unavailable, such as for single use disposable face shields, consider:

1) While wearing gloves, carefully wipe the inside, followed by the outside of the face shield or goggles using a clean cloth saturated with neutral detergent solution or cleaner wipe.
2) Carefully wipe the outside of the face shield or goggles using a wipe or clean cloth saturated with EPA-registered hospital disinfectant solution.
3) Wipe the outside of face shield or goggles with clean water or alcohol to remove residue.
4) Fully dry (air dry or use clean absorbent towels).
5) Remove gloves and perform hand hygiene.

Full CDC Guidance: Strategies for Optimizing the Supply of Eye Protection

Strategies for Optimizing the Supply of Facemasks

Once personal protective equipment (PPE) supplies and availability return to normal, healthcare facilities should promptly resume conventional practices.

Audience: These considerations are intended for use by federal, state, and local public health officials; leaders in occupational health services and infection prevention and control programs; and other leaders in healthcare settings who are responsible for developing and implementing policies and procedures for preventing pathogen transmission in healthcare settings.

Purpose: This document offers a series of strategies or options to optimize supplies of facemasks in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare facilities can refer to COVID-19 preparedness plans.

Surge capacity refers to the ability to manage a sudden increase in patient volume that would severely challenge or exceed the present capacity of a facility. While there are no commonly accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of facemasks during the COVID-19 response. To help healthcare facilities plan and optimize the use of facemasks in response to COVID-19, CDC has developed a Personal Protective Equipment (PPE) Burn Rate Calculator. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve facemask supplies along the continuum of care.

- **Conventional capacity:** measures consisting of engineering, administrative, and personal protective equipment (PPE) controls that should already be implemented in general infection prevention and control plans in healthcare settings.
- **Contingency capacity**: measures that may be used temporarily during periods of expected facemask shortages. Contingency capacity strategies should only be implemented after considering and implementing conventional capacity strategies. While current supply may meet the facility's current or anticipated utilization rate, there may be uncertainty if future supply will be adequate and, therefore, contingency capacity strategies may be needed.
- **Crisis capacity**: strategies that are not commensurate with U.S. standards of care but may need to be considered during periods of known facemask shortages. Crisis capacity strategies should only be implemented after considering and implementing conventional and contingency capacity strategies. Facilities can consider crisis capacity strategies when the supply is not able to meet the facility's current or anticipated utilization rate.

CDC's optimization strategies for facemask supply offer a continuum of options for use when facemask supplies are stressed, running low, or exhausted. Contingency and then crisis capacity measures augment conventional capacity measures and are meant to be considered and **implemented sequentially**. Once facemask availability returns to normal, healthcare facilities should promptly resume standard practices.

Decisions to implement contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their facemask inventory and supply chain
2. Facilities understand their facemask utilization rate
3. Facilities are in communication with local healthcare coalitions, federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) to identify additional supplies
4. Facilities have already implemented other engineering and administrative control measures including:
    - Use physical barriers and other engineering controls
    - Limit number of patients going to hospital or outpatient settings
    - Use telemedicine whenever possible
    - Exclude all HCP not directly involved in patient care
    - Limit face-to-face HCP encounters with patients

- Limit visitors to the facility to those essential for the patient's physical or emotional well-being and care (e.g., care partner, parent).
- Cohort patients and/or HCP

5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care

Once availability of facemasks returns to normal, healthcare facilities should promptly resume conventional practices. Determining the appropriate time to return to conventional strategies can be challenging. Considerations affecting this decision include:

1. The anticipated number of patients for whom a facemask should be worn by HCP providing their care
2. The number of days' supply of facemasks currently remaining at the facility
3. Whether or not the facility is receiving regular resupply with its full allotment

Conventional Capacity Strategies

Use facemasks according to product labeling and local, state, and federal requirements.

In healthcare settings, facemasks are used by HCP for 2 general purposes:

1. As PPE to protect their nose and mouth from exposure to splashes, sprays, splatter, and respiratory secretions (e.g., for patients on Droplet Precautions). When used for this purpose, facemasks should be removed and discarded after each patient encounter.
2. When recommended for source control while they are in the healthcare facility, to cover one's mouth and nose to prevent spread of respiratory secretions when they are talking, sneezing, or coughing. When used for this purpose, facemasks may be used until they become soiled, damaged, or hard to breathe through. They should be immediately discarded after removal.

FDA-cleared surgical masks are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures. Facemasks that are not regulated by FDA, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

Contingency Capacity Strategies

Selectively cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP as PPE.

Remove facemasks from facility entrances and other public areas.

Healthcare facilities can consider removing all facemasks from public areas (e.g., entrances, near elevators) and instead keep them in a secure and monitored site where they are distributed at check-in only to patients who do not have their own cloth mask or facemask. This is especially important in high-traffic areas like emergency departments.

Implement extended use of facemasks as PPE.

Extended use of facemasks is the practice of HCP wearing the same facemask as PPE (e.g., for patients on Droplet Precautions) during encounters with several different patients, without removing the facemask between encounters.

- The facemask should be discarded whenever the facemask is removed, and always at the end of each workday.
- The facemask should also be removed and discarded if soiled, damaged, or hard to breathe through.
- HCP must take care not to touch their facemask. If they touch or adjust their facemask, they must immediately perform hand hygiene.
- HCP should leave the patient care area if they need to remove the facemask.

Restrict facemasks for use only by HCP when needed as PPE (e.g., encounters with patients on Droplet Precautions).

HCP who only require source control may use a cloth mask. Instead of providing a facemask to patients not already wearing their own cloth mask for source control, have them use tissues or other barriers to cover their mouth and nose

Crisis Capacity Strategies

Cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP as PPE.

Use facemasks beyond the manufacturer-designated shelf life during patient care activities.

If there is no date available on the facemask label or packaging, facilities should contact the manufacturer. The user should visually inspect the product prior to use and, if there are concerns (such as degraded materials or visible tears), discard the product.

Implement limited re-use of facemasks with extended use.

Pairing limited re-use of facemasks with extended use is the practice of using the same facemask by one HCP for multiple patient encounters but removing it after several encounters and redonning it for further patient encounters. As it is unknown what the potential contribution of contact transmission is for SARS-CoV-2, care should be taken to ensure that HCP do not touch outer surfaces of the mask during care, and that mask removal and replacement be done in a careful and deliberate manner.

- At this time, there is not known a maximum number of uses (donnings) the same facemask could be re-used.
- The facemask should be removed and discarded if soiled, damaged, or hard to breathe through.
- Not all facemasks can be re-used.
    - Facemasks that fasten to the provider via ties may not be able to be undone without tearing and should be considered only for extended use, rather than re-use.
    - Facemasks with elastic ear hooks may be more suitable for re-use.
- HCP should leave patient care area if they need to remove the facemask. Facemasks should be carefully folded so that the outer surface is held inward and against itself to reduce contact with the outer surface during storage. The folded mask can be stored between uses in a clean sealable paper bag or breathable container.

Prioritize facemasks for selected activities such as:

- For provision of essential surgeries and procedures
- During care activities where splashes and sprays are anticipated
- During unavoidable activities where prolonged face-to-face or close contact with a potentially infectious patient for whom facemask use is recommended
- If respirators are no longer available, during the care of patients with SARS-CoV-2 infection, other infections, or situations for which a respirator is recommended (e.g., during aerosol generating procedures when there is moderate to substantial community transmission of SARS-CoV-2)

When No Facemasks Are Available, Options Include

Exclude HCP at increased risk for severe illness from SARS-CoV-2 infection from contact with patients with suspected or confirmed SARS-CoV-2 infection.

During severe resource limitations, when respirators and facemasks are not available, consider excluding HCP who may be at increased risk for severe illness from SARS-CoV-2 infection, such as those of older age, those with chronic medical conditions, or those who may be pregnant, from caring for patients with confirmed or suspected SARS-CoV-2 infection.

Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask.

HCP use of cloth masks:

In settings where neither respirators nor facemasks are available, HCP might use cloth masks as a last resort for care of patients with suspected or confirmed diagnosis for which facemask or respirator use is normally recommended.

However, cloth masks are not considered PPE, since their capability to protect HCP is unknown. Caution should be exercised when considering this option. Cloth masks should ideally be used in combination with a face shield that covers the entire front (that extends to the chin or below) and sides of the face.

Full CDC Guidance: Strategies for Optimizing the Supply of Facemasks

Ventilators - Policy for Modifications to FDA-Cleared Devices

In the context of the COVID-19 public health emergency in which affected patients may develop respiratory illness, it is necessary to maintain an adequate supply of devices to treat patients who develop respiratory failure or respiratory insufficiency. The devices listed in Table 1, which include ventilators, anesthesia gas machines, and other respiratory devices, and their accessories, are needed to support patients who develop respiratory compromise from COVID-19 or other respiratory disorders.

Wherever possible, healthcare facilities should use FDA-cleared conventional/standard full featured ventilators when necessary to support patients with respiratory failure, or a device subject to an Emergency Use Authorization (EUA), if any. However, to help ensure the availability of the greatest possible number of devices for this purpose, and as described in more detail below, FDA does not intend to object to limited modifications to the indications, claims, functionality, or to the hardware, software, or materials of FDA-cleared devices used to support patients with respiratory failure or respiratory insufficiency, without prior submission of a premarket notification under section 510(k) of the FD&C Act and 21 CFR 807.81, for the duration of the declared public health emergency. This policy applies where a modification is made to the device that triggers the requirement that a manufacturer submit a new premarket notification (510(k)) to FDA. Examples of such changes could include a significant change or modification in design, material, chemical composition, energy source, or manufacturing process.

More specifically, this policy will create more flexibility for manufacturers that make device modifications to address current manufacturing limitations or supply shortages. Examples may include:

- Changes to the ventilator motor to allow an alternate supplier to meet the required design specifications
- Changes to the material in the ventilator tubing to allow for more flexible material sourcing

We believe this approach will help manufacturers that want to add production lines or manufacture at alternative sites which may have different manufacturing equipment to increase manufacturing capacity and supply and reduce supply change interruptions and manufacturing bottlenecks.

Table 1

Classification Regulation	Device Type	Product Code	Device Classification
21 CFR 868.5895	Ventilator, Continuous, Facility Use	CBK	II
	Ventilator, Continuous, Minimal Ventilatory Support, Facility Use	MNT	II
	Continuous, ventilator, home use NOU II	NOU	II
	Ventilator, continuous, minimal ventilatory support, home use	NQY	II
	Ventilator, continuous, non-life supporting	MNS	II
	Mechanical Ventilator	ONZ	II
21 CFR 868.5925	Ventilator, Emergency, Powered (Resuscitator)	BTL	II
21 CFR 868.5160	Gas-machine, anesthesia	BSZ	II
21 CFR 868.5905	Ventilator, non-continuous (respirator) Including masks and interfaces under the same product code	BZD	II
	Conserver, Oxygen	NFB	II
	Device, Positive Pressure Breathing, Intermittent	NHJ	II
	Resuscitator, Manual, Non-Self Inflating	NHK	II
21 CFR 868.5454	High flow/high velocity humidified	QAV	II

1. Modifications to FDA-Cleared Indications, Claims, or Functionality

In developing this policy, FDA's intent is to foster the continued availability of safe and effective medical devices while being flexible regarding modifications made to ventilators, anesthesia gas machines and other respiratory devices, and their accessories, in response to the COVID-19 public health emergency.

As noted above, wherever possible, healthcare facilities should use FDA-cleared conventional/standard full-featured ventilators to treat patients who develop respiratory failure or respiratory insufficiency. However, for the duration of the public health emergency, to help foster the wider availability of devices for patients in need of ventilatory support, FDA does not intend to object to modifications to the FDA-cleared indications, claims, or functionality of these devices, without prior submission of a premarket notification where the modification will not create an undue risk in light of the public health emergency. Examples of circumstances where FDA currently believes a modification would not create such undue risk include:

1) The use of powered emergency ventilators and anesthesia gas machines for patients needing mechanical ventilation;
2) The use of ventilators outside their cleared environment of use (for example, use of a ventilator in a healthcare facility when it is only cleared for use at home or during transport);
3) The use of devices indicated for sleep apnea (including noncontinuous ventilators delivering continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP)) to treat patients with respiratory insufficiency, provided that appropriate design mitigations are in place to minimize aerosolization;
4) The use of oxygen concentrators for primary supply when medically necessary and clinically appropriate.

2. Hardware, Software, and Material Changes to FDA cleared Ventilators and Anesthesia Gas Machines

As stated above, wherever possible, healthcare facilities should use conventional/standard full featured ventilators to treat patients who develop respiratory failure or respiratory insufficiency. However, for the duration of the public health emergency, in order to help foster the wider availability of devices for patients in need of ventilatory support and to help manufacturers respond to potential device component disruptions in the supply chain, FDA does not intend to object to limited modifications to the FDA-cleared hardware, software, or materials, without prior submission of a premarket notification under section 510(k) of the FD&C Act and 21 CFR 807.81, where the modification does not create an undue risk in light of the public health emergency. Examples of circumstances where FDA currently believes a modification would not create such undue risk include:

1) Modifications to motors, batteries, or other electrical components;
2) Material changes to components in the gas pathway or with other patient tissue contact;
3) Introduction of filtration to minimize aerosolization.
4) Software modifications intended to modify the ventilation parameters including inspiratory pressure, tidal volumes, flow rates, positive end-expiratory pressure (PEEP) in accordance with any applicable device standard;
5) Software modifications implementing physiological closed loop (automated) algorithms for oxygen titration where the algorithms/devices are the subject of an FDA-approved Investigational Device Exemption (IDE);
6) Hardware and/or software modifications implementing the capability for remote monitoring and remote adjustment of ventilator parameters (i.e., adjustment of parameters by trained healthcare providers from outside an isolation unit to avoid unnecessary exposures).

Additionally, FDA does not intend to object to firms making modifications or adding to the hardware/software architectures to allow for increased remote monitoring and setting adjustment capability/availability to support additional claims or indications described above. One example is the addition of wireless and/or Bluetooth capability. For any such changes, manufacturers should develop and implement appropriate cybersecurity controls to assure device

cybersecurity and maintain device functionality and safety. FDA recommends firms refer to the following FDA guidance documents for consideration when pursuing these design changes:

- Guidance for the Content of Premarket Submissions for Software Contained in Medical Devices
- Content of Premarket Submissions for Management of Cybersecurity in Medical Devices
- Radio Frequency Wireless Technology in Medical Devices
- Design Considerations and Pre-market Submission Recommendations for Interoperable Medical Devices

3. Use of Ventilator and Anesthesia Gas Machine Breathing Circuit Devices Beyond Their Indicated Shelf Life and Duration of Use

Ventilators and anesthesia gas machines are designed to work as a breathing circuit, which is comprised of various ancillary devices such as the tubing that connects the ventilator to the patient, filters, and humidifiers. Constituent parts of the breathing circuit may include, but are not limited to, those identified in Table 2:

Table 2

Classification Regulation	Device Type	Product Code	Device Classification
21 CFR 868.5240	Anesthesia breathing circuit	OFP	I
	Anesthesia breathing circuit	CAI	I
21 CFR 868.5260	Filter, Bacterial, Breathing-Circuit	CAH	II
21 CFR 868.5270	Heated breathing circuit	BZE	II
21 CFR 868.5340	Cannula, Nasal, Oxygen	CAT	I
21 CFR 868.5440	Generator, oxygen, portable	CAW	II
21 CFR 868.5450	Humidifier, Respiratory Gas, (Direct Patient Interface)	BTT	II
21 CFR 868.5580	Mask, Oxygen	BYG	I
21 CFR 868.5730	Tube, Tracheal (W/Wo Connector)	BTR	II
	Airway Monitoring System	OQU	II
21 CFR 868.5895	Accessory to Continuous Ventilator (Respirator)	MOD	II
21 CFR 868.5965	Attachment, Breathing, Positive End Expiratory Pressure	BYE	II
21 CFR 868.5975	Set, Tubing and Support, Ventilator	BZO	I

These breathing circuit devices might be labeled with specific durations of use and shelf life. Given the potential for extensive use of ventilators and anesthesia gas machines in response to the COVID-19 pandemic, and to avoid depletion of breathing circuit supplies, for the duration of the public health emergency, FDA does not intend to object to changes in the indicated shelf life and duration of use of these products for treating individual patients, without prior submission of a premarket notification under section 510(k) of the FD&C Act and 21 CFR 807.81, where the change does not create an undue risk in light of the public health emergency. Examples of circumstances where FDA currently believes a change would not create such an undue risk: the devices are used according to healthcare institutional protocols, or useful life is limited to the occurrence of malfunction or visible soiling.

4. Labeling of Modified Devices

In addition, FDA recommends that the devices described above use labeling that helps users better understand the device modifications such as:

1) A clear description of the device's new indications, claims, or functions, and information on the device's performance and potential risks.
2) Adequate instructions for use for the intended user and indicated environment(s) of use. The labeling highlight the differences in design compared to the unmodified, FDA cleared version of the device, along with instructions for mitigating any known risks associated with these differences.
3) A clear distinction delineating FDA-cleared indication and claims from those that are not FDA-cleared. In addition, FDA recommends the labeling include a general statement about changes that have not been cleared by FDA.

Full FDA Guidance Document: Enforcement Policy for Ventilators, Accessories, and Other Respiratory Devices During COVID-19 Public Health Emergency

Preparedness Guidance for COVID-19

Comprehensive Hospital Preparedness Checklist for COVID-19

Planning for a community outbreak of Coronavirus Disease 2019 (COVID-19) is critical for maintaining healthcare services during a response. The Centers for Disease Control and Prevention (CDC), with input from partners, has developed a checklist to help hospitals (acute care facilities) assess and improve their preparedness for responding to a community-wide outbreak of COVID-19. Because of variability of outbreaks, as well as differences among hospitals (e.g., characteristics of the patient population, size of the hospital/community, scope of services), each hospital will need to adapt this checklist to meet its unique needs and circumstances. This checklist should be used as one of several tools for evaluating current plans or in developing a comprehensive COVID-19 preparedness plan. Additional information can be found at www.cdc.gov/coronavirus.

An effective COVID-19 hospital preparedness plan will incorporate information from state, regional, tribal and local health departments, emergency management agencies/authorities, hospital associations, and suppliers of resources. In addition, hospitals should refer to state and federal pandemic influenza plans to inform their response (available at https://www.cdc. gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf). Hospitals will also need to ensure their plans comply with applicable state and federal regulations and with standards set by accreditation organizations, such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Comprehensive COVID-19 planning can also help facilities plan for other emergency situations.

All U.S. hospitals should be prepared for the possible arrival of patients with COVID-19. All hospitals should ensure their staff are trained, equipped and capable of practices needed to: (1) Prevent the spread of COVID-19 within the facility; (2) Promptly identify and isolate patients with possible COVID-19 and inform the correct facility staff and public health authorities; (3) Care for a limited number of patients with confirmed or suspected COVID-19 as part of routine operations; (4) Potentially care for a larger number of patients in the context of an escalating outbreak while maintaining adequate care for other patients; (5) Monitor and manage any healthcare personnel that might be exposed to COVID-19; and (6) Communicate effectively within the facility and plan for appropriate external communication related to COVID-19.

Healthcare Professional Preparedness Checklist for Transport and Arrival of Patients with Confirmed or Possible COVID-19

Front-line healthcare personnel in the United States should be prepared to evaluate patients for coronavirus disease 2019 (COVID-19). The following checklist highlights key steps for healthcare personnel in preparation for transport and arrival of patients with confirmed or possible COVID-19.

Full CDC Preparedness Checklist: Healthcare Professional Preparedness Checklist For Transport and Arrival of Patients With Confirmed or Possible COVID-19

Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings

1. Minimize Chance for Exposures

Ensure facility policies and practices are in place to minimize exposures to respiratory pathogens including SARS-CoV-2, the virus that causes COVID-19. Measures should be implemented before patient arrival, upon arrival, throughout the duration of the patient's visit, and until the patient's room is cleaned and disinfected. It is particularly important to protect individuals at increased risk for adverse outcomes from COVID-19 (e.g. older individuals with comorbid conditions), including HCP who are in a recognized risk category.

2. Adhere to Standard and Transmission-Based Precautions

Standard Precautions assume that every person is potentially infected or colonized with a pathogen that could be transmitted in the healthcare setting. Elements of Standard Precautions that apply to patients with respiratory infections, including COVID-19, are summarized below. Attention should be paid to training and proper donning (putting on), doffing (taking off), and disposal of any PPE. This document does not emphasize all aspects of Standard Precautions (e.g., injection safety) that are required for all patient care; the full description is provided in the Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

3. Patient Placement

For patients with COVID-19 or other respiratory infections, evaluate need for hospitalization. If hospitalization is not medically necessary, home care is preferable if the individual's situation allows. If admitted, place a patient with known or suspected COVID-19 in a single-person room with the door closed. The patient should have a dedicated bathroom.

As a measure to limit HCP exposure and conserve PPE, facilities could consider designating entire units within the facility, with dedicated HCP, to care for known or suspected COVID-19 patients. Dedicated means that HCP are assigned to care only for these patients during their shift. Limit transport and movement of the patient outside of the room to medically essential purposes.

4. Take Precautions When Performing Aerosol-Generating Procedures (AGPs)

Some procedures performed on patient with known or suspected COVID-19 could generate infectious aerosols. In particular, procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) should be performed cautiously and avoided if possible.

5. Collection of Diagnostic Respiratory Specimens

When collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) from a possible COVID-19 patient, the following should occur:

- HCP in the room should wear an N95 or higher-level respirator (or facemask if a respirator is not available), eye protection, gloves, and a gown.
- The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for specimen collection.
- Specimen collection should be performed in a normal examination room with the door closed.
- Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

Full CDC guidance: Interim Infection Prevention and Control Recommendations for Healthcare Personnel During COVID-19

Strategies to Prevent and Mitigate the Spread of COVID-19 in Jails and Prisons

The population density and quick cycling of inmate/detainees in and out of correctional facilities creates a heightened risk of the 2019 novel coronavirus (COVID-19) infection being transmitted to inmate/detainees and staff. In addition, people in jails, prisons, and other detention facilities typically have a greater underlying disease burden and worse health conditions than the general population. They also frequently face greater exposure to risks, such as: smoking; poor hygiene; and weak immune defenses due to stress, poor nutrition, or the prevalence of coexisting diseases, such as: bloodborne viruses; tuberculosis; and substance use disorders. Therefore, the Nevada Department of Health and Human Services (DHHS) has developed strategies to assist jails, prisons, and other detention facilities to respond to the outbreak.

Most correctional facilities already have a written health promotion, safety, and disease prevention plan that addresses exposure control, medical isolation, and standard precautions used to detect and prevent the spread of other respiratory viruses like the influenza. Those same outbreak management principles should be used with the COVID-19 virus, and the DHHS recommendations below should complement but not replace, those general prevention and control standards.

Limit Visitation

Social Visits: Restrict or suspend all social visitation for 30 days and then re-evaluate at that time. To maintain inmate/detainee social contact, it is recommended facilities allow for increased inmate/detainee telephone communications and use alternative contact-visitation methods, such as video visits (where available) or tablets. The phone and video visits should be provided at no charge to the inmate/detainee. If visiting is allowed, screen the visitors using the same procedures the facility uses for staff. Visitors who are symptomatic should be excluded from visiting. Decisions to limit or restrict social visits need to consider the particular impact on the mental well-being of the inmate/detainee and the increased levels of anxiety that separation from children and the outside world may cause.

Legal Visits: Restrict or suspend in-person legal visits for 30 days and then re-evaluate at that time. To ensure inmates/detainees have access to legal counsel, use alternative visitation methods (e.g., video conferencing). Provide case-by-case accommodations for attorneys seeking in-person visits, and if attorneys are approved for in-person visits, screen them for the virus using the same procedures the facility uses for staff.

Contractors: Restrict or suspend contractor access to the facility for 30 days unless the person is there to perform essential services (e.g., medical care, mental healthcare, religious functions/services) or is there to perform necessary maintenance on essential systems; reassess after 30 days. For contractors allowed access to the facility, screen them using the same procedures the facility uses for staff.

Volunteers and non-essential service providers: Suspend volunteers and non-essential service providers for 30 days; then reassess the situation. Allow exceptions for volunteers providing religious functions/services. For those allowed access to the facility, screen them using the same procedures the facility uses for staff.

Facility Prevention Strategies

- Conduct a COVID-19 risk assessment of all persons entering the facility: inmate/detainees, visitors, and facility staff.
    - All symptomatic inmates should be screened and tested, if tests are available. If an inmate tests positive, or testing is not available, but they are symptomatic, they should be isolated based on these guidelines for discontinuation or released after 2 negative tests conducted 24 hours apart.
        - At least 3 days (72 hours) have passed recovery defined as resolution of fever without the use of fever-reducing medications; and,
        - Improvement in respiratory symptoms (e.g., cough, shortness of breath); and,
        - At least 7 days have passed since symptoms first appeared.

    - Collect information on the person's history of cough and/or shortness of breath, travel history, and possible contact with confirmed cases within the last 10 days.
    - Provide clear messaging to staff so those who have traveled recently or who are coming from affected areas and who develop COVID-19 symptoms can self-isolate and their managers can provide a high level of vigilance and support of the isolating-staff.
- Be aware of stress on inmates due to decreased personal ability to control or minimize exposure to the virus. Inmates may perceive that their environment is unclean or unsafe, increasing anxiety and agitation.
- Any inmate/detainee who presents with signs, symptoms, and exposure criteria consistent with COVID-19 should be isolated and tested, per local health authority protocols, and immediately placed on contact and droplet precautions for 10 days, unless otherwise cleared.
    - Place symptomatic inmates/detainees in single rooms if space is available. If space is not available, place symptomatic inmates/detainees together in a designated area of the facility.
- If possible, maintain incoming inmate/detainees in a designated isolation unit for 10 days prior to release into general population.
- If aerosol-generating medical procedures are needed, all healthcare workers should wear an N95 respirator (and eye protection).
- Incorporate social distancing measures: cancel all inmate/detainee group activities (recreation, education, chapel, therapy and support groups (e.g., Alcoholics Anonymous)) and events where people gather; cancel communal dining, stagger meals and recreational activities; provide the pill line by unit or administer medications on the units.
- Screen inmates/detainees who work in food service and health services.
- Minimize self-serve in food service (eliminate salad bars, etc.).
- Temporarily suspend handshakes.
- Limit facility points of entry.
- Use logs on each unit to document staff and inmate/detainee entry.
- Restrict moving inmates/detainees between housing units.

Prevention Strategies for Law Enforcement Officers Who Transport Detainees to Jail

Recommendations for law enforcement officers who, during an apprehension, come into close contact with a person who has been confirmed or is suspected of having COVID-19:

- Clean and disinfect the duty belt and gear prior to reuse.
    - Use a household cleaning spray or wipe, as outlined on the product label.
- Follow standard operating procedures for the containment and disposal of used PPE.
- Follow standard operating procedures for containing and laundering clothes.
- Avoid shaking the clothes.

The CDC provides guidance for law enforcement officers who make contact with persons confirmed or suspected to have COVID-19.

Facility Mitigation Strategies

In addition to following the facility's infection disease management plan, implement modified operations and administrative controls for 30 days; then reassess the situation. Recommended strategies include:

- Isolate any asymptomatic inmate/detainee with exposure risk factors.
- Confine symptomatic inmates/detainees to their rooms.
- Isolate cellmates of symptomatic inmates/detainees until it is determined the cellmates are symptom free.
- If transportation of a symptomatic person is necessary, have the affected person wear a mask to contain respiratory secretions.

- Collaborate with the local health department to arrange appropriate medical care for inmates/detainees who are sick and scheduled for release.
- Transfers of symptomatic inmates/detainees from county to state facilities should be limited, prudent, and reviewed by the receiving facility's medical team before the inmate/detainee is transferred.
- Work in collaboration with your local health department to arrange appropriate aftercare for inmates/detainees who are sick and scheduled for release.
- Designate staff to work on either affected or non-affected units in order to avoid cross contamination.
- Ensure only trained staff wearing appropriate personal protective equipment (PPE) have contact with inmates/detainees who have or who may have the virus. Follow the CDC's Interim Guidance for Emergency Medical Services (EMS) Systems for PPE.
- Have a proactive sick leave policy and follow the CDC's recommended work restrictions and monitoring based on staff exposure to COVID-19 individuals.
- Provide staff with information about COVID-19 symptoms so they can self-assess before reporting for duty.
- Advise staff to check for any signs of illness before reporting to work each day and to notify their supervisor if they become ill while at work.
- Screen symptomatic staff if they present to work with symptoms or if they develop them while at work.
- In settings of widespread transmission, consider screening all staff for fever or respiratory symptoms before they can enter the facility.
- Consider identifying staff who may be at higher risk for COVID-19 and assigning them to unaffected units, if possible.
- Follow the most updated public health requirements for when staff can return to work after having a COVID-19 diagnosis.
- Corrections work of all disciplines, whether in institutional or in community-based settings, has been recognized as being exceptionally stressful. With the added stress of COVID-19, checking in with colleagues around mental wellness and self-care is imperative. Screening for thoughts of suicide would be recommended for those with increased risk and signs of burnout, depression, and anxiety.
- Make contingency plans for increased absenteeism caused by staff illness or by illness in staffs' family members that would require staff to stay home. Contingency planning includes:
    - Identifying and prioritizing essential and non-essential functions;
    - Identifying minimum staffing needs for essential facility operations;
    - Extending shift hours;
    - Cross-training current staff or hiring temporary staff; and
    - Collaborating with the local health department to identify facility space that could be adapted for use as an isolation area for symptomatic individuals.

Attachment A

Crisis Standards of Care During COVID-19 Pandemic: Allocation of Limited Resources

The following attachment is an example of a locally adopted *Crisis Standards of Care During COVID-19 Pandemic: Allocation of Limited Resources* document that was reviewed and endorsed by the Governor's COVID-19 Medical Advisory Team (MAT) members for adoption within the Northwestern region of the state. This attachment is an example of what may be adopted by other local health jurisdictions during this pandemic response.

Crisis Standards of Care During COVID-19 Pandemic: Allocation of Limited Resources

April 3, 2020
Revised April 6, 2020
Revised April 8, 2020
Revised April 10, 2020
Revised April 11, 2020
State Medical Advisory Team Determination of Consistency
with State Crisis Standards of Care April 14, 2020

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Introduction

This document serves to provide guidance for allocation of adult patient care resources (including intensive care beds and ventilators) in the event that, during a public healthcare emergency such as a viral pandemic or acute disaster, demand for such services outstrip resources. These guidelines are provided in accordance with guidelines provided in the 2020 Nevada Crisis Standards of Care Plan (NCSCP)[1]. The NCSCP is "an all-hazards plan that works in conjunction with the Nevada Division of Emergency Management's State Comprehensive Emergency Management Plan (SCEMP) and serves as the framework for supporting the ethical and effective provision of medical care during a catastrophic public health disaster".

An essential feature of this proposal is that it does not use categorical exclusion criteria; all individuals are "worth saving." It proposes keeping all patients who would receive critical care during routine clinical circumstances eligible for such care. The limitation to access to critical care/ventilator is determined by the availability of beds and services. It is important to note that there are some conditions that lead to immediate or near-immediate death despite aggressive therapy such that during routine clinical circumstances clinicians do not provide critical care services (e.g., cardiac arrest unresponsive to appropriate ACLS, massive intracranial bleeds, intractable shock). During a public health emergency, clinicians should still make clinical judgments about the appropriateness of critical care using the same criteria they use during normal clinical practice.

There are several components of the ethical framework that underlie our guidelines[2-6].

1. The duty to care is the fundamental obligation of providers to care for patients.
2. The duty to steward resources is the need to responsibly manage resources during periods of true scarcity.
3. The duty to plan is the responsibility of government to plan for a foreseeable crisis.
4. Distributive justice requires that an allocation system is applied broadly and consistently to be fair to all.
5. Transparency ensures that the process of developing a clinical ventilator allocation protocol is open to feedback and revision, which helps promote public trust in these guidelines.

Based on these five components, the following ethical considerations where used for developing the guidelines and recommendations outlined in this document:

1. Is the health outcome used to guide allocation (lives saved or years of life) ethically defensible?
2. Are the limited resources allocated in a way that is fair, consistent and transparent?
3. Are the limited resources allocated without favoring privileged groups?
4. Have the interests of vulnerable groups been considered?
5. Are there provisions for palliative care and support in the algorithms to care for those who are not to receive scarce resources?
6. Do those who are creating the allocation algorithms have any professional or personal conflicts?
7. If algorithms favor providers of a key service are those decisions being made in a transparent, consistent and reasonable manner?

Furthermore, consideration was given in exploring various non-clinical approaches to allocating ventilators, including distributing ventilators on a first-come first-serve basis, randomizing ventilator allocation (e.g., lottery), requiring only physician clinical judgment in making allocation decisions and prioritizing certain patient categories (i.e., health care workers and patients with certain social criteria). After careful consideration it was concluded that these approaches would not be the best primary method to allocate scarce resources because they are often subjective and do not support the goal of saving the most lives. Furthermore, advanced age was rejected as a triage criterion because it discriminates against the elderly. Age already factors indirectly into any criteria that assess the overall health of an individual (because the likelihood of having chronic medical conditions increases with age) and there are many instances where an older person could have a better clinical outlook than a younger person. Thus, the guidelines for ventilator allocation should utilize clinical factors only to give patients who are deemed most likely to survive with
ventilator therapy an opportunity for treatment.

Phased Allocation of Limited Resources

As a pandemic emerges within a community there will be a predictable strain on the healthcare system that parallels the incidence of the infection curve. There will be three phases, which are described below. It is difficult to know prospectively exactly where a community is on the incidence of infection curve, relative to the "surge". There are however, clinical circumstances that can offer insight as to how to best manage patients and resources.

Of great concern is the potential of withholding limited resources from an individual prematurely in anticipation of the community needing them, and later learning there would have been enough resources to care for that individual. On the other hand, if resources are used on a first come, first served basis, there is the potential to use limited resources on patients that did not have the best chance for survival. This approach is in opposition to the primary directive in a pandemic to "do the most good, for the most people."

To mitigate the risk of limiting resources too early or too late one must recognize the phases of a crisis and their varying degree of strain on the healthcare system(s). Each phase, in and of itself, requires different allocation of limited resources. Phase identification is assessed continuously based on resource inventory by Incident Command. The three phases are as follows:

Phase I

In this phase, there are enough standard of care resources (beds/ventilators) for everyone that presents for medical care. Institutional capacity has not been reached.

Phase II

In this phase, standard of care resources have been exhausted, but there are alternative means to deliver care (e.g., transport ventilators, CPAP, improvised treatment areas.) Standard capacity has been

exhausted but alternative strategies allow for increased volume of patient care. The following actions will be taken:

- Activation of Crisis Standards of Care During COVID-19 Pandemic: Allocation of Limited Resources protocols are initiated. All patients will be categorized by clinical means using the Sequential Organ Failure Assessment (SOFA) score[7] for future triage if Phase III is reached.
- When Phase II is initiated, standard resources have reached capacity and critical care resources will be deemed non-beneficial for certain conditions outlined in Table 1.
- Blue category – (SOFA>11), lowest priority (lowest likelihood of survival) receives next available limited resources.

Phase III

In this phase, all alternative resources have been exhausted. Allocation of resources will be determined by resource allocation priority as determined by the Triage Committee.

- Blue category – (SOFA>11), lowest priority (lowest likelihood of survival) does not receive limited resources but will receive medical care, palliative care and hospice referral.

In Phase II/III non-beneficial treatment shall not be provided as determined by the attending provider.

For Phases I, II and III the following steps will be followed:

1. In all phases, all patients are evaluated for treatment.
2. In Phase I, critical care resources will be allocated as indicated by their need.
3. In Phase II/III, critical care resource allocation will be determined by SOFA classification and Table 1 criteria.
4. The provider assesses the function of six key organs: lungs, liver, brain, kidneys, blood clotting and heart. The function of these six organs form the basis for the SOFA score (Table 2). *Originally, the use of SOFA scores was developed by the Ontario Health Plan for an Influenza Pandemic (OHPIP) plan in 2006[7]. Subsequently many jurisdictions in Canada and the USA have adapted this score[8-10] (or alternative so called Modified Sequential Organ Failure Assessment (MSOFA)[11] as the basis for ventilator allocation when demand exceeds capacity[j].*
5. Based on the information gathered, the SOFA score is calculated. A perfect SOFA score, indicating normal function in all six categories, is zero; the worst possible score is 24 and indicates life-threatening abnormalities in all six systems[k]. The SOFA score will be used as a proxy for mortality risk.

[j] Despite the criticism that SOFA may not adequately determine prognosis for individual patients in all circumstances, SOFA will be used until a better clinical tool is developed. SOFA is simple to use, with few variables or lab parameters, and the calculation of the score (i.e., simple addition) is straightforward, which makes SOFA a good tool to provide a consistent, clinical approach to allocate ventilators. The score is calculated only from clinical factors based on available medical evidence, and not personal values or subjective judgments, such as quality of life. The decision to use the SOFA score is supported by the fact that SOFA score as a proxy for mortality risk is currently used by several other jurisdictions, including New York State, Minnesota, Maryland, Utah, and Pittsburgh.

[k] By design SOFA weights all six systems equally.

6. For most patients who are sick with only COVID-19 and have no other comorbidities, the single organ failure is often limited to their lungs, which gives them a low SOFA score. However, because the clinical ventilator allocation protocol applies to all patients in need of a ventilator, a patient may also have a comorbidity(s) that affects another organ system(s) which will increase his/her SOFA score. Intubation for control of the airway (without lung disease) is not considered lung failure.
7. The Triage Committee examines the available scores and will allocate the next available critical care resource(s) according to a patient's SOFA score (Table 3a or Table 4a). While a SOFA score does provide discrete numbers, it is not appropriate to suggest that a score of 5 is indicative of a lower risk of mortality than a score of 6. Instead, both of these scores suggest that both patients have near equal probabilities of survival. Thus, all patients in the same color category have the same likelihood of survival.
8. Each patient allocated a ventilator will have his/her SOFA score reassessed at 48 and 120 hours. The decision whether a patient remains on a ventilator is based on his/her SOFA score and the magnitude of change in the SOFA score compared to the results from the previous official clinical assessment (Table 3b and 3c or Table 4b and 4c). The primary difference between the 48 and 120-hour assessment is the extent of improvement in overall health prognosis and of the trajectory of a patient's health status required to continue to be eligible for ventilator therapy. At 48 hours, because a patient has had only two days to benefit from ventilator therapy, the progress required to justify continued ventilator use is not expected to be dramatic. However, after 120 hours, a patient must demonstrate a pattern of further significant improvement in health to justify continued ventilator use.

   Although additional clinical assessments may be performed, the official SOFA assessments only occur after 48 and 120 hours of ventilator therapy. No formal triage decision or action may be taken until a patient's official assessment. However, at any point during the time trial, even before an official assessment occurs, if a patient develops a condition on the exclusion criteria list and there is an eligible patient waiting, then the ventilator is reallocated. A patient who no longer meets the criteria for continued ventilator use receives alternative forms of medical intervention and/or palliative care.

Mortality Risk Assessment and Periodic Reassessment
Decision to offer Critical Care, ICU admission and Ventilation

Consistent with an ethically sound framework for healthcare during public health emergencies, when one must balance the patient-centered duty of care with public-focused duties to promote equality of persons and equity in distribution of risks and benefits in society, the primary goal of the allocation framework during a public healthcare emergency is to maximize benefit to populations of patients, specifically by maximizing survival to hospital discharge and beyond for as many patients as possible.

During the declared public health emergency, all patients who meet usual medical indications for admission to an ICU will be assigned a SOFA score. The SOFA score assists in determining a patient's likelihood of surviving from hospital admission to hospital discharge (lower scores indicate higher likelihood of benefit from critical care) [5]. The SOFA score is converted to four color-coded priority groups (Tables 3A, 3B, and 3C) to facilitate streamlined implementation. All patients will be assessed and are

eligible to receive available critical care resources. These resources will be allocated according to SOFA score and resource availability.

In the event that there are ties in priority scores between patients, life-cycle considerations will be used as a tiebreaker, with priority going to younger life-stage patients, who have had less opportunity to live through life's stages. Life stages will be defined by these four categories: young adulthood (40 years and younger), middle adulthood (41 to 60 years), late adulthood (61-74 years) and lastly those 75 years and up.

Next, if a tie cannot be broken by life-cycle criteria, priority will be given to frontline first responders and hospital staff, specifically, those whose work directly supports the provision of acute care to others.

Individuals who perform tasks that are vital to the public health response, including all those whose work directly supports the provision of acute care to others, should be given heightened priority. This category should be broadly construed to include those individuals who play a critical role in the chain of treating patients. However, it would not be appropriate to prioritize front-line physicians and not prioritize other front-line clinicians (e.g., nurses and respiratory therapists) and other key personnel (e.g., maintenance staff that disinfects hospital rooms). The rationale for this priority is based on the acknowledgment that the recovery of these individuals would allow the greatest potential for the healthcare system to maximize 'saving the most lives' by returning them to work after recovery.

All patients who are allocated critical care services will be allowed a therapeutic trial of 48 hours and subsequently 120-hour duration to determine the benefits of therapy. All patients receiving critical care/ventilation will be reassessed, using the SOFA scoring system as well as appraisal of new clinical complications from the treating clinicians. The ethical justification for such reassessment is that, in a public health emergency when there are not enough critical care resources for all, the goal of maximizing population outcomes would be jeopardized if patients who were determined to be unlikely to survive were allowed indefinite use of scarce critical care services. In addition, periodic reassessments lessen the chance that arbitrary considerations, such as when an individual develops critical illness, unduly affect patients' access to treatment.

Patients with clear clinical deterioration resulting in higher SOFA scores that would put them in a different color-coded category, would become candidates for discontinuation of ventilation, if patients with lower scores were waiting for a ventilator.

Although patients will generally be given the full duration of a trial (i.e. 48 and 120 hours), if patients experience a precipitous decline (e.g., refractory shock and DIC) or a highly morbid complication (e.g., massive stroke) which portends a very poor prognosis, a decision may be taken before the completion of the specified trial length that the patient is no longer eligible for critical care treatment.

Patients who are triaged to not receive ICU beds or services will be offered medical care including intensive symptom management and psychosocial support. Where available, specialist palliative care teams will provide additional support and consultation.

Decision to only Offer Intensive Symptom Management, Psychosocial Support and Palliative Care

It is critical to ensure that all patients are assured of the best care possible. If available resources prevent patients from receiving treatment in an Intensive Care Unit, patients need to know that the best care possible will be provided within the resource limitations. This care will include but not be limited to intensive symptom management and psychosocial support with palliative care teams available for consultation.

Decision Not to Accept Transfer from Outside Hospitals

When demand exceeds care supply resources, the usual ability to accept patients from other hospitals may be severely impacted. Table 1 highlights conditions that under extraordinary circumstances warrant a decision not to accept transfers.

- Emergency Medical Treatment and Labor Act (EMTALA)

The Emergency Medical Treatment and Labor Act (EMTALA) states that a medical screening exam (MSE) must be provided to every individual who comes to the ED for examination of treatment for a medical condition to determine if they have an emergency medical condition (EMC). According to Centers for Medicare and Medicaid Services (CMS) Center for Clinical Standards and Quality/Quality, Safety and Oversight Group, EMTALA MSE and stabilization requirements can be waived in certain circumstances such as in the case of a public health emergency involving pandemic infectious disease. In the case that a waiver is granted, CMS will provide notice to covered hospitals through Regional Offices and/or State Agencies[12].

Code Status

Based on current literature, COVID-19 positive patients who are intubated and receive vasopressors have a >90%[13] mortality risk. These patients will automatically receive a DNR status. The change to DNR status of such patients will be discussed with family members before a cardiopulmonary arrest occurs.

Triage Committee

The allocation of scarce resources will not be made by the attending of record providing care for patients; their role remains to be the best possible advocates for their patients. While the direct treatment team interacts with and conducts the clinical evaluation of a patient, a triage committee, which has no direct contact with the patient, examines pre-determined data provided by the attending physician and makes the decision about a patient's level of access to a ventilator. The local (Northern Nevada) institutions participating in the NCSCP will designate three (3) triage officers from a pool of at least fifteen (15), who will apply the agreed upon guidelines described in this document to prioritize patients for access to limited healthcare resources (ventilators). Separating the roles of the direct treatment team and triage committee members reduces conflicts of commitments, promotes objectivity and minimizes moral distress.

It is important to recognize that the decisions of the Triage Committee are grounded in public health (community) ethics, not clinical ethics. As such, decisions of the Triage Committee are focused on the greatest good for the greatest number of people.

- Triage Officers

The Triage Committee will consist of at least fifteen appointed members. Desirable qualities of triage committee members are: integrity, no evident conflict of interest, strong leadership skills, effective communication and conflict resolution skills. The group should also include healthcare providers, including physicians, respiratory therapists or nurses with established expertise in the management of critically ill patients. The Triage Committee Members will be appointed by the appropriate approving body.

At any given time, three of the Triage Committee members will function as the Triage Officers. At least one of them should be a healthcare provider with established expertise in the management of critically ill patients. The three Triage Officers on duty will oversee the triage process, assess the agreed-upon data from all patients eligible for a ventilator, assign a level of priority for each, and communicate the level of priority to the patients' treating physicians. The on-duty Triage Officers are expected to make decisions according to the allocation framework described below, which is designed to benefit the greatest number of patients, even though these decisions may not necessarily be best for some individual patients. The level of priority score for each patient will be decided by majority determination (using Table 6A, 6B and 7).

The Triage Officers have the responsibility and authority to apply the principles and processes of this document to make decisions about which patients will receive the highest priority for receiving critical care. They are also empowered to make decisions regarding reallocation of critical care resources that have previously been allocated to patients, again using the principles and processes in this document. In making these decisions, the Triage Officers should not use principles or beliefs that are not included in this document.

A large enough roster of appointed Triage Officers will be maintained to ensure that Triage Officers will be available on short notice at all times, and that they will have sufficient rest periods between shifts.

- Triage Team

In addition to the Triage Officers, the Triage Team should also consist of a nurse with acute care (e.g., critical care or emergency medicine) experience (even if no longer clinically active) and one administrative staff member who will conduct data-gathering activities, documentation and record keeping and assistance liaising with a hospital Command Center or bed management. The staff member will be provided with appropriate computer and IT support to maintain updated databases of patient priority levels and scarce resource usage (total numbers, location and type). The role of triage team members is to provide information to the Triage Officers and to help facilitate and support their decision-making process. A representative from hospital administration should also be linked to the

team, in order to supervise maintenance of accurate records of triage scores and to serve as a liaison with hospital leadership.

The triage officers and team members should function in shifts lasting no longer than 13 hours, including 30 minutes of handoffs. Therefore, there should be two shifts per day to fully staff the triage function. Team decisions and supporting documentation should be reported daily to appropriate hospital leadership and incident command.

- Triaging

The Triage Officers on duty will use the described SOFA scoring system to determine priority scores of all patients eligible to receive the scarce critical care resource. For patients already being supported by the scarce resource, the evaluation will include reassessment to evaluate for clinical improvement or worsening at 48 hours and 120 hours after intubation. Each Triage Officer will review the information for each patient and assign a score. The three scores will be compared and when discrepant, a consensus will be sought. If no consensus is reached, the score provided by the majority of members will be the final score. If all 3 Triage Officers have a different score and no consensus can be reached, the median score will be assigned to the patient.

The Triage Officers on duty may encounter a situation where there are several patients in the red color (highest priority) code who are equally eligible for ventilator therapy. Further clinical examination of these patients in the red color category may not be useful or possible in a pandemic because it has already been determined using exclusion criteria and a SOFA score that all the individuals have equal (or near equal) likelihoods of survival. A secondary allocation system will take into effect.

In this situation, from an ethical point of view, a decision must be made whether to prioritize ‘maximizing benefits for the community’, ‘treating people equally’, ‘promoting instrumental value’, or ‘treating to the worst off’. It is elected to prioritize ‘maximizing benefits to the community’, which focuses on ‘saving the most lives’ and ‘saving the most-life years.’

When several patients are equally eligible for ventilator therapy, the Triage Officers will utilize life-cycle considerations as a tiebreaker, with priority going to younger patients who have had less opportunity to live through life stages. Life stages will be defined by these four categories: young adulthood (40 years and younger), middle adulthood (41 to 60 years), late adulthood (61-74 years) and lastly those 75 years and up. Next, if a tie cannot be broken by life-cycle criteria priority will be given to frontline first responders and hospital staff, specifically, those whose work directly supports the provision of acute care to others.

The Triage Officers will review the comprehensive list of priority scores for all patients and will communicate with the clinical teams immediately after a decision is made regarding allocation or reallocation of a critical care resource.

- Communication of triage decisions to patients and families

One of the three Triage Officers on duty will inform the affected patient's attending physician about the triage decision. It will be the responsibility of the attending physician to inform the patient and/or the family. This would bridge naturally to a conveyance of prognosis, which is a responsibility of bedside physicians. It may limit the number of people exposed to a circulating pathogen and increase the ability of the Triage Officers to remain objective. The attending physician would emphasize that the triage decision was not made by the attending physician but is instead one that arose from the extraordinary emergency circumstances and reflect a public health decision. It may useful to explain the medical factors that informed the decision, as well as the factors that were not relevant (e.g., race, ethnicity, gender, insurance status, perceptions of social worth, immigration status, etc.). If resources permit, palliative care clinicians or social workers should be present or available to provide ongoing emotional support to the patient and family.

- Appeals process for individual triage decisions and Triage Appeals Committee

The Triage Appeals Committee is made up of at least three individuals, recruited from the following groups: medical leadership (e.g. Chief Medical Officer, Dean of the School of Medicine), nursing leadership (e.g. Chief Nursing Officer, Dean of the School of Nursing), legal counsel, a hospital ethics committee or consult service, and/or members of an institution's ethics faculty. Three committee members are needed for a quorum to render a decision using a simple majority vote. The process can happen by telephone or in person, and the outcome will be promptly communicated to whomever brought the appeal.

It is possible appellants (patients, families or clinicians) will challenge individual triage decisions. Procedural fairness requires the availability of an appeals mechanism to resolve such disputes. On practical grounds, different appeals mechanisms are needed for the initial decision to allocate a scarce resource among individuals, none of whom are currently using the resource, and the decision whether to withdraw a scarce resource from a patient who is not clearly benefiting from that resource. This is because initial triage decisions for patients awaiting the critical care resource will likely be made in highly time-pressured circumstances. Therefore, an appeal will need to be adjudicated in real time to be operationally feasible. For the initial triage decision, the only permissible appeals are those based on a claim that an error was made by the triage team in the calculation of the SOFA score or use/non-use of a tiebreaker. The process of evaluating the appeal should only involve verifying the accuracy of the SOFA score calculation by recalculating it. The treating clinician should be prepared to explain the calculation to the patient or family on request.

Periodically, the Triage Appeals Committee should retrospectively evaluate whether the review process is consistent with effective, fair and timely application of the allocation framework.

Decisions to withdraw mechanical ventilation from a patient who is already receiving it may cause heightened moral concern. Therefore, there should be a robust process for appealing decisions to withdraw or reallocate critical care beds or services. Elements of this appeals process should include:

- The appellants will explain to the attending of record the grounds for their appeal.
- Appeals based on an objection to the overall allocation framework will not be granted.
- The attending of record will notify the Triage Appeals Committee of the appeal.
- The Triage Appeals Committee will review the appeal in real time.
- The appeals process must occur quickly enough as to not harm patients who are in the queue for scarce critical care resources.
- The Triage Appeals Committee will recalculate the SOFA score or the use/non-use of a tiebreaker.
- The ruling of the Triage Appeals Committee will be final.
- The Triage Appeals Committee will convey the ruling to the attending of record and the appellant.

Recognizing a Crisis

Recognizing the appropriate point in time to initiate Crisis Standards of Care is vitally important. As a pandemic surge within a community becomes imminent, the usual model of individualized care and shared decision making must transition to a community base triage model. The goal, "to do the greatest good, for the greatest number of people."

In usual circumstances there are enough resources for everyone who needs intensive care to receive "standard of care" intensive care resources. When the demand for "standard of care" resources are outstripped by demand the community will be forced to use alternative strategies to meet the demands of the crisis.

Therefore, by definition, whenever non-standard resources are required to meet the demand to care for patients at any of our community facilities, then a crisis exists. This will serve as the formal point of activation for the allocation of limited resources.

Point of Activation

Activation of Crisis Standards of Care must be preceded by focused efforts to spare existing resources and procure as many anticipated needed resources as possible. These actions should include but are not limited to: discontinuation of elective surgeries, strict ICU admission criteria, increasing inventory of key equipment, medications, and optimizing staffing levels.
Activation of Crisis Standards of Care During COVID-19 document should occur when either of the two circumstances exist:

1. All standard ventilators are in use, only alternative ventilators are available for additional patients.

Or

2. Improvised bed/staffing strategies are required to manage extreme patient volumes.

Acknowledgment

The Committee wishes to acknowledge reliance on the 2020 Nevada Crisis Standards of Care[1] as well as other Federal, state, public health, health industry and academic crisis standards of care plans, documents, references, recommendations, guidance and literature. The Committee has reviewed these resources carefully and has incorporated what it believes to be the best recommendations, elements and guidance into this Plan. In doing so, the Committee acknowledges that a pandemic may create a shift in focus from individual patients to the good of the community at large, and the intention of this Plan is to provide a medical and ethical framework to assure the best care possible despite resource limitations.

Limitation of Liability, Immunity and Exemption

This Crisis Standards of Care document was created while recognizing Emergency Directive 011[14], issued by the Governor of the State of Nevada on April 1, 2020, which waived or suspended certain requirements, and allowed for broader protections under NRS 414.110, until specifically modified or terminated by a subsequent Directive. This Crisis Standards of Care document incorporates by reference all limitations of liability, immunities, and exemptions granted under Emergency Directive 011 and related statutes to the fullest extent possible under the laws of the State of Nevada and the United States. For ease of reference, NRS 414.110 provides in pertinent part as follows:

- All functions under this chapter and all other activities relating to emergency management are hereby declared to be governmental functions. Neither the State nor any political subdivision thereof nor other agencies of the State or political subdivision thereof, nor except in cases of willful misconduct, gross negligence, or bad faith, any worker complying with or reasonably attempting to comply with this chapter, or any order or regulation adopted pursuant to the provisions of this chapter, or pursuant to any ordinance relating to the necessary emergency procedures or other precautionary measures enacted by any political subdivision of the State, is liable for the death of or injury to persons, or for damage to property, as a result of any such activity.
- Any requirement for a license to practice any professional, mechanical, or other skill does not apply to any authorized worker who, in the course of performing his or her duties as such, practices that professional, mechanical or other skill during an emergency or disaster.
- As used in this section, “worker” includes, without limitation, any full-time or part-time paid, volunteer or auxiliary employee of this State, of any political subdivision thereof, of other states, territories, possessions or the District of Columbia, of the Federal Government, or any neighboring country, or of any political subdivision thereof, or of any agency or organization, performing services for emergency management at any place in this State subject to the order or control of, or pursuant to a request of, the State Government or any political subdivision thereof.

Crisis Standards of Care Tables

Table 1: Phase II/III Criteria Determination for Ineligibility to Receive Limited Critical Care Resources

- POLST with a DNR and comfort focused treatment
- Current Hospice or Hospice eligible (Table 7)
- Cardiac Arrest:
    - Unwitnessed arrest
    - Recurrent arrest without hemodynamic stability
    - Arrest unresponsive to standard ACLS interventions within 20 minutes
- Irreversible hypotension unresponsive to fluid resuscitation and vasopressor therapy
- Persistent coma or vegetative state (Modified Rankin Score ≥ 5; Table 8)
- Known severe Dementia who meets Hospice eligibility criteria (Table 7 Figure 1 and 2)
- Acute severe neurologic event such intracranial hemorrhage or acute stroke with minimal chance of recovery (neurosurgeon or neurology assessment)
- Incurable adult metastatic malignant disease
- Severe acute trauma (Appendix A)
- Severe burns with minimal chance of survival. Coordinate with the burn center
- SOFA score >11

Table 2 SOFA Scoring

Respiratory system, PaO_2/FiO_2 (mmHg)	SOFA score
> 400	0
< 400	1
< 300	2
< 200 with respiratory support	3
< 100 with respiratory support	4
Nervous system, Glasgow Coma Scale	
15	0
13–14	1
10–12	2
6–9	3
< 6	4
Cardiovascular system, Mean arterial pressure (MAP) OR administration of vasopressors required	
MAP > 70 mmHg	0
MAP < 70 mm/Hg	1
Dopamine ≤ 5 µg/kg/min or dobutamine (any dose)	2
Dopamine > 5 µg/kg/min OR epinephrine ≤ 0.1 µg/kg/min OR norepinephrine ≤ 0.1 µg/kg/min	3
Dopamine > 15 µh/kg/min OR epinephrine > 0.1 µg/kg/min OR norepinephrine > 0.1 µg/kg/min	4
Liver, Bilirubin (mg/dl) {µmol/L}	
< 1.2 {< 20}	0
1.2–1.9 {20–32}	1
2.0–5.9 {33–101}	2
6.0–11.9 {102–204}	3
> 12.0 {> 204}	4
Coagulation, Platelets $\times 10_3$/ml	
> 150	0
< 150	1
< 100	2
< 50	3
< 20	4
Kidneys, Creatinine (mg/dl) {µmol/L}; urine output	
< 1.2 {< 110}	0
1.2–1.9 {110–170}	1
2.0–3.4 {171–299}	2
3.5–4.9 {300–440} (or urine output < 500 ml/day)	3
> 5.0 {> 440}; urine output < 200 ml/day	4

Table 3A: Phase I Assessment at presentation (hour 0)

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Admission to Intensive Care Unit Ventilator Allocation
SOFA 8-11	YELLOW Intermediate Admission to Intensive Care Unit Ventilator Allocation
SOFA >11 and/or Table 1 criteria	BLUE Admission to Intensive Care Unit Ventilator allocation

Table 3B: Phase 1 Assessment at Hour 48

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Admission to Intensive Care Unit Ventilator Allocation
SOFA 8-11	YELLOW Intermediate Admission to Intensive Care Unit Ventilator Allocation
SOFA >11 and/or Table 1 criteria	BLUE Admission to Intensive Care Unit Ventilator allocation

Table 3C: Phase 1 Assessment at Hour 120

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Admission to Intensive Care Unit Ventilator Allocation
SOFA 8-11	YELLOW Intermediate Admission to Intensive Care Unit Ventilator Allocation
SOFA >11 and/or Table 1 criteria	BLUE Admission to Intensive Care Unit Ventilator allocation

Table 4A: Phase II/III Assessment at Hour (0)

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Priority ICU/use ventilators available
SOFA 8-11	YELLOW Intermediate Priority ICU/use ventilators as available
SOFA >11 and/or Table 1 Criteria	Phase II ICU/ventilators as available Phase III NO VENTILATOR PROVIDED Use alternative forms of medical intervention, palliative care, Hospice referral

Table 4B: Phase II/III Assessment at Hour 48

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Priority ICU/use ventilators available
SOFA ≤7 AND worsening or no improvement from 48 hours SOFA 8-11 AND no improvement from 48 hours	YELLOW Intermediate Priority ICU/use ventilators as available
SOFA >11 and/or Table 1 Criteria	Phase II ICU/ventilators as available Phase III NO VENTILATOR PROVIDED Use alternative forms of medical intervention, palliative care, Hospice referral

Table 4C: Phase II/III Assessment at Hour 120

Assessment of Mortality Risk/Organ Failure	Color Code and Level of Access
No significant organ failure AND/OR No significant requirement for lifesaving resources	GREEN Use alternative forms of medical intervention or defer or discharge Reassess as needed
SOFA ≤7 OR Single organ failure	RED Highest Priority ICU/use ventilators available
SOFA ≤7 AND worsening or no improvement from 48 hours SOFA 8-11 AND no improvement from 48 hours	YELLOW Intermediate Priority ICU/use ventilators as available
SOFA >11 and/or Table 1 Criteria	Phase II ICU/ventilators as available Phase III NO VENTILATOR PROVIDED Use alternative forms of medical intervention, palliative care, Hospice referral

Table 5A: Phase I Hospital and ICU/Ventilator Admission Triage Algorithm

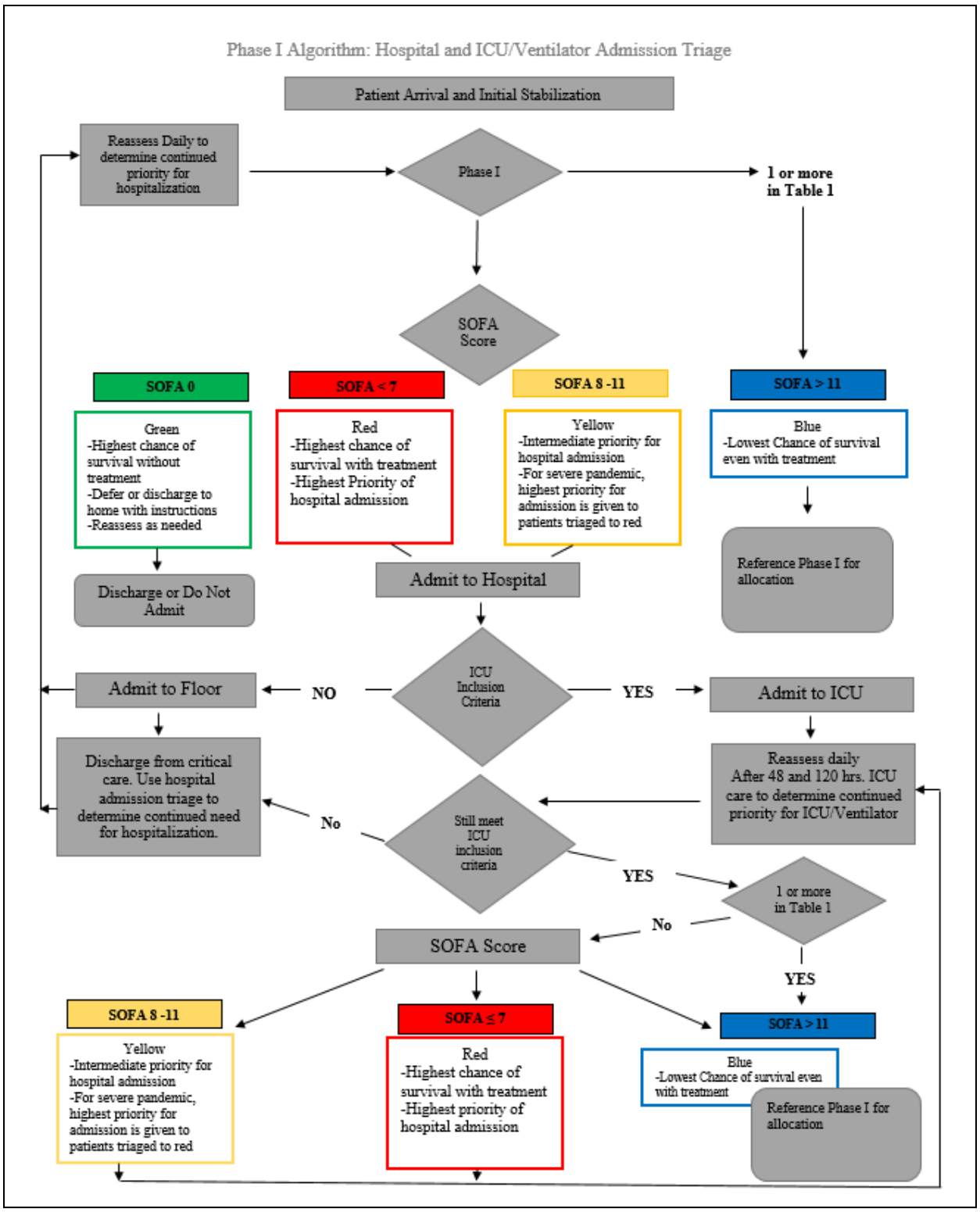


Table 5B: Phase II/III Hospital and ICU/Ventilator Admission Triage Algorithm

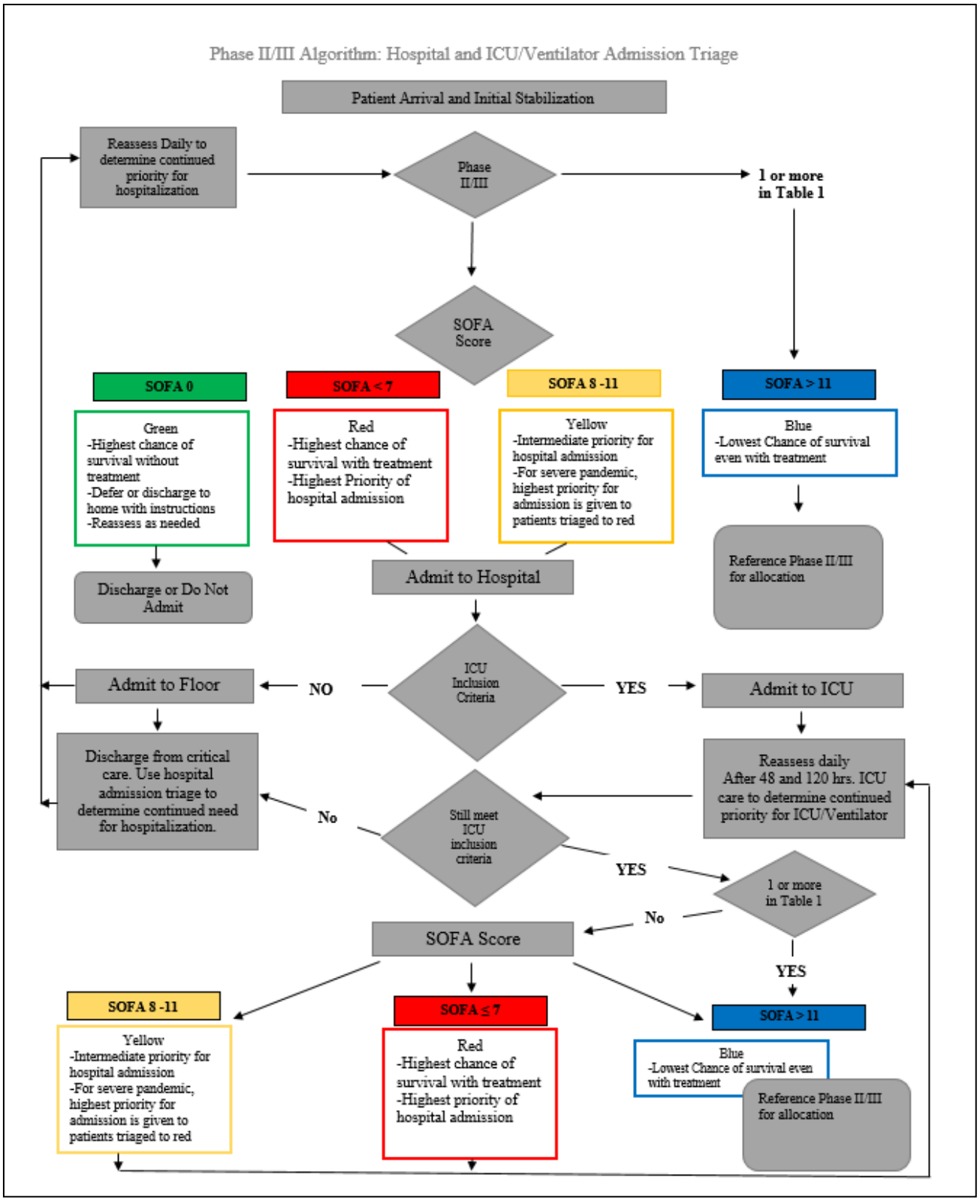


Table 6: Triage Screening Document for Triage Committee

Phase II/III Criteria Determination for Ineligibility to Receive Limited Critical Care Resources

- ☐ POLST with a DNR and comfort focused treatment
- ☐ Current Hospice or Hospice eligible (Table 7)
- ☐ Cardiac Arrest:
  - Unwitnessed arrest
  - Recurrent arrest without hemodynamic stability
  - Arrest unresponsive to standard ACLS interventions within 20 minutes
- ☐ Irreversible hypotension unresponsive to fluid resuscitation and vasopressor therapy
- ☐ Persistent coma or vegetative state (Modified Rankin Score ≥ 5; Table 8)
- ☐ Known severe Dementia who meets Hospice eligibility criteria (Table 7 Figure 1 and 2)
- ☐ Acute severe neurologic event such intracranial hemorrhage or acute stroke with minimal chance of recovery (neurosurgeon or neurology assessment)
- ☐ Incurable adult metastatic malignant disease
- ☐ Severe acute trauma (Appendix A)
- ☐ Severe burns with minimal chance of survival. Coordinate with the burn center
- ☐ SOFA score >11

Sequential Organ Failure Assessment

SOFA score	0	1	2	3	4
Respiratory PaO2/FiO2 (mm Hg) SaO2/FiO2					100 67
Coag Platelets					20
Liver Bilirubin					12.0
Cardio Hypotension			(any)		nine >15 or nephrine >0.1
CNS Glasgow Coma Score	15	13–14	10–12	6–9	<6
Renal Creatinine (mg/dL) or urine output (mL/d)	<1.2	1.2–1.9	2.0–3.4	3.5–4.9 or <500	>5.0 or <200

Triage Committee Assessment:

Date:
Time:
Triage Outcome:

Table 7: Medicare Hospice Eligibility Criteria (page 1 of 2)

Functional Assessment Scale (FAST)

1	No difficulty either subjectively or objectively.
2	Complains of forgetting location of objects. Subjective work difficulties.
3	Decreased job functioning evident to co-workers. Difficulty in traveling to new locations. Decreased organizational capacity. *
4	Decreased ability to perform complex task, (e.g., planning dinner for guests, handling personal finances, such as forgetting to pay bills, etc.)
5	Requires assistance in choosing proper clothing to wear for the day, season or occasion, (e.g. pt may wear the same clothing repeatedly, unless supervised.*
6	Occasionally or more frequently over the past weeks. * for the following **A)** Improperly putting on clothes without assistance or cueing . **B)** Unable to bathe properly (not able to choose proper water temp) **C)** Inability to handle mechanics of toileting (e.g., forget to flush the toilet, does not wipe properly or properly dispose of toilet tissue) **D)** Urinary incontinence **E)** Fecal incontinence
7	**A)**Ability to speak limited to approximately ≤ 6 intelligible different words in the course of an average day or in the course of an intensive interview. **B)** Speech ability is limited to the use of a single intelligible word in an average day or in the course of an intensive interview **C)** Ambulatory ability is lost (cannot walk without personal assistance.) **D)** Cannot sit up without assistance (e.g., the individual will fall over if there are not lateral rests [arms] on the chair.) **E)** Loss of ability to smile. **F)** Loss of ability to hold up head independently.

*Scored primarily on information obtained from a knowledgeable informant.
Psychopharmacology Bulletin, 1988 24:653-659.

Palliative Performance Scale (PPS)

%	Ambulation	Activity and Evidence of Disease	Self-Care	Intake	Level of Conscious
100	Full	Normal activity, no evidence of disease	Full	Normal	Full
90	Full	Normal activity, some evidence of disease	Full	Normal	Full
80	Full	Normal activity with effort, some evidence of disease	Full	Normal or reduced	Full
70	Reduced	Unable to do normal work, some evidence of disease	Full	Normal or reduced	Full
60	Reduced	Unable to do hobby or some housework, significant disease	Occasional assist necessary	Normal or reduced	Full or confusion
50	Mainly sitting	Unable to do any work, extensive disease	Considerable assistance required	Normal or reduced	Full or confusion
40	Mainly in bed	Unable to do any work, extensive disease	Mainly assistance	Normal or reduced	Full, drowsy, or confusion
30	Totally bed bound	Unable to do any work, extensive disease	Total care	Reduced	Full, drowsy, or confusion
20	Totally bed bound	Unable to do any work, extensive disease	Total care	Minimal sips	Full, drowsy, or confusion
10	Totally bed bound	Unable to do any work, extensive disease	Total care	Mouth care only	Drowsy or coma
0	Death	—	—	—	—

Hospice Card

A hospice is a program designed to care for the dying and their special needs. Among these services all hospice programs should include:
(a) **Control of pain and other symptoms** through medication, environmental adjustment and education.
(b) **Psychosocial support** for both the patient and family, including all phases from diagnosis through bereavement.
(c) **Medical services** commensurate with the needs of the patient.
(d) **Interdisciplinary "team"** approach to patient care, patient/ and family support, and education.
(e) Integration into existing facilities where possible.
(f) Specially trained personnel with expertise in care of the dying and their families.

Hospice Eligibility Criteria

GENERAL (NON-SPECIFIC) TERMINAL ILLNESS

1. Terminal condition cannot be attributed to a single specific illness. And
2. Rapid decline over past 3-6months Evidenced by:
Progression of disease evidenced by sx, signs & test results
Decline in PPS to ≤ 50%
Involuntary weight loss >10% and/or Albumin <2.5 (helpful)

ADULT FAILURE TO THRIVE

Patient meets ALL of the following:

- Palliative performance Scale ≤ 40%
- BMI <22
- Pt refusing enteral or parenteral nutrition support or has not responded to such nutritional support, despite adequate caloric intake

CANCER

Patient meets ALL of the following:
1.Clinical findings of malignany with widespread, aggressive or progressive disease as evidenced by increasing sx, worsening lab values and/or evidence of metastatic disease
2.Palliative performance Scale (PPS) ≤ 70%
3.Refuses further life-prolonging therapy OR continues to decline in spite of definitive therapy
Supporting documentation includes:
Hypercalcemia > 12
Cachexia or weight loss of 5% in past 3 months
Recurrent disease after surgery/radiation/chemotherapy
Signs and sx of advanced disease (e.g. nausea, requirement for transfusions, malignant ascites or pleural effusion, etc.)

DEMENTIA

The patient has both 1 and 2:
1. Stage 7C or beyond according to the FAST Scale
AND
2. One or more of the following conditions in the 12 months:
Aspiration pneumonia
Pyelonephritis
Septicemia
Multiple pressure ulcers (stage 3-4)
Recurrent Fever
Other significant condition that suggests a limited prognosis
Inability to maintain sufficient fluid and calorie intake in the past 6months (10% weight loss or albumin < 2.5 gm/dl)

Table 7: Medicare Hospice Eligibility Criteria (page 2 of 2)

HEART DISEASE

The patient has 1 and either 2 or 3.

1. CHF with NYHA Class IV* sx and both :
Significant sx at rest
Inability to carry out even minimal physical activity without dyspnea or angina

2. Patient is optimally treated
(ie diuretics, vasodilators, ACEI, or hydralazine and nitrates)

3. The patient has angina pectoris at rest, resistant to standard nitrate therapy, and is either not a candidate for/or has declined invasive procedures.

Supporting documentation includes:
EF ≤ 20%, Treatment resistant symptomatic dysrythmias h/o cardiac related syncope, CVA 2/2 cardiac embolism H/o cardiac resuscitation, concomitant HIV disease

HIV/AIDS

The patient has either 1A or 1B and 2 and 3.
1A. CD4+ < 25 cells/mcL **OR** 1B. Viral load > 100,000
AND
2. At least one (1) : CNS lymphoma, untreated or refractory wasting (loss of > 33% lean body mass), (MAC) bacteremia,
Progressive multifocal leukoencephalopathy
Systemic lymphoma , visceral KS, Renal failure no HD, Cryptosporidium infection, Refractory toxoplasmosis
AND
3. PPS* of < 50%

LIVER DISEASE

The patient has both 1 and 2.
1. End stage liver disease as demonstrated by A or B, & C:
A. PT> 5 sec **OR** B. INR > 1.5
AND
C. Serum albumin <2.5 gm / dl
AND
2. One or more of the following conditions:
Refractory Ascites, h/o spontaneous bacterial peritonitis, Hepatorenal syndrome , refractory hepatic encephalopathy, h/o recurrent variceal bleeding

Supporting Documents includes:
Progressive malnutrition, Muscle wasting with dec. strength. Ongoing alcoholism (> 80 gm ethanol/day), Hepatocellular CA HBsAg positive, Hep. C refractory to treatment

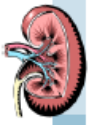
PULMONARY DISEASE

Severe chronic lung disease as documented by 1, 2, and 3.
1. The patient has all of the following:
Disabling dyspnea at rest
Little of no response to bronchodilators
Decreased functional capacity (e.g. bed to chair existence, fatigue and cough)
AND
2. Progression of disease as evidenced by a recent h/o increasing office, home, or ED visits and/or hospitalizations for pulmonary infection and/or respiratory failure.
AND
3. Documentation within the past 3 months ≥1:
Hypoxemia at rest on room air (p02 < 55 mmHg by ABG) or oxygen saturation < 88%
Hypercapnia evidenced by pC02 > 50 mmHg
Supporting documentation includes: Cor pulmonal and right heart failure Unintentional progressive weight loss

NEUROLOGIC DISEASE (chronic degenerative conditions such as ALS, Parkinson's, Muscular Dystrophy, Myasthenia Gravis or Multiple Sclerosis)

The patient must meet at least one of the following criteria (1 or 2A or 2B):
1. Critically impaired breathing capacity, with all:
Dyspnea at rest, Vital capacity < 30%, Need O_2 at rest, patient refuses artificial ventilation
OR
2. Rapid disease progression with either A or B below:
Progression from :
independent ambulation to wheelchair or bed-bound status
normal to barely intelligible or unintelligible speech
normal to pureed diet
independence in most ADLs to needing major assistance in all ADLs
AND
A. Critical nutritional impairment demonstrated by all of the following in the preceding 12 months:
Oral intake of nutrients and fluids insufficient to sustain life
Continuing weight loss
Dehydration or hypovolemia
Absence of artificial feeding methods
OR
B. Life-threatening complications in the past 12 months as demonstrated by ≥1:
Recurrent aspiration pneumonia, Pyelonephritis, Sepsis, Recurrent fever, Stage 3 or 4 pressure ulcer(s

RENAL FAILURE



The patient has 1, 2, and 3.
1. The pat is not seeking dialysis or renal transplant
AND
2. Creatinine clearance* is < 10 cc/min (<15 for diabetics)
AND
3. Serum creatinine > 8.0 mg/dl (> 6.0 mg/dl for diabetics)
Supporting documentation for chronic renal failure includes: Uremia, Oliguria (urine output < 400 cc in 24 hours), Intractable hyperkalemia (> 7.0), Uremic pericarditis, Hepatorenal syndrome, Intractable fluid overload.
Supporting documentation for acute renal failure includes:
Mechanical ventilation, Malignancy (other organ system) Chronic lung disease, Advanced cardiac disease, Advanced liver disease

STROKE OR COMA

The patient has both 1 and 2.
1. Poor functional status PPS* ≤ 40% **AND**
2. Poor nutritional status with inability to maintain sufficient fluid and calorie intake with ≥1 of the following:
≥ 10% weight loss in past 6 months
≥7.5% weight loss in past 3 months
Serum albumin <2.5 gm/dl
Current history of pulmonary aspiration without effective response to speech therapy interventions to improve dysphagia and decrease aspiration events

Supporting documentation includes:
Coma (any etiology) with 3 of the following on the third (3rd) day of coma:
Abnormal brain stem response
Absent verbal responses
Absent withdrawal response to pain
Serum creatinine > 1.5 gm/dl

Table 8: Modified Rankin Scale

Modified Rankin Scale

Score	Description
0	No symptoms at all
1	No significant disability despite symptoms; able to carry out all usual duties and activities
2	Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
3	Moderate disability; requiring some help, but able to walk without assistance
4	Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
5	Severe disability; bedridden, incontinent, and requiring constant nursing care and attention
6	Dead

Table 9: FAST (Figure 1) and Hospice Eligibility Criteria (Figure 2)

Functional Assessment Scale (FAST)

1	No difficulty either subjectively or objectively.
2	Complains of forgetting location of objects. Subjective work difficulties.
3	Decreased job functioning evident to co-workers. Difficulty in traveling to new locations. Decreased organizational capacity. *
4	Decreased ability to perform complex task, (e.g., planning dinner for guests, handling personal finances, such as forgetting to pay bills, etc.)
5	Requires assistance in choosing proper clothing to wear for the day, season or occasion, (e.g. pt may wear the same clothing repeatedly, unless super-vised.*
6	Occasionally or more frequently over the past weeks. * for the following **A)** Improperly putting on clothes without assistance or cueing . **B)** Unable to bathe properly (not able to choose proper water temp) **C)** Inability to handle mechanics of toileting (e.g., forget to flush the toilet, does not wipe properly or properly dispose of toilet tissue) **D)** Urinary incontinence **E)** Fecal incontinence
7	**A)**Ability to speak limited to approximately ≤ 6 intelligible different words in the course of an average day or in the course of an intensive interview. **B)** Speech ability is limited to the use of a single intelligible word in an average day or in the course of an intensive interview **C)** Ambulatory ability is lost (cannot walk without personal assistance.) **D)** Cannot sit up without assistance (e.g., the individual will fall over if there are not lateral rests [arms] on the chair.) **E)** Loss of ability to smile. **F)** Loss of ability to hold up head independently.

*Scored primarily on information obtained from a knowledgeable informant.
Psychopharmacology Bulletin, 1988 24:653-659.

DEMENTIA

The patient has both 1 and 2:

1. Stage 7C or beyond according to the FAST Scale

AND

2. One or more of the following conditions in the 12 months

Aspiration pneumonia
Pyelonephritis
Septicemia
Multiple pressure ulcers (stage 3-4)
Recurrent Fever
Other significant condition that suggests a limited prognosis
Inability to maintain sufficient fluid and calorie intake in the past 6months (10% weight loss or albumin < 2.5 gm/dl)

Crisis Standards of Care

Transfer Guidelines Appendices

Appendix A

TRAUMA TRANSFER CRITERIA

General or Multisystem Trauma General Guidelines

Route call to Trauma Surgeon on Call—see standard work (Trauma Attachment 1)

Patients to remain at referring hospitals with general surgical capability:

- Isolated spleen or renal injury. This includes patients who might otherwise be candidates for angiography.
- Pubic rami fractures that are hemodynamically stable
- Patients with < 5 multiple rib fractures in hospitals with general surgical support
- Severe burn patients should be transferred directly to Burn centers. Manage marginal transfer candidates in house with consultation from the burn center.

Trauma Transfer Candidates:

- Complex pelvic fractures including acetabular, sacral vertical shear injury, open book-pubic diastasis
- Significant multisystem trauma (ISS>14)
- Severe Liver Injuries Grade 3 or higher especially with significant ACTIVE extravasation
- Trauma surgery must approve all transfers
-

Isolated Neurosurgical Trauma General Guidelines

Route call to Neurosurgery

Do not accept:

- GCS 3 Fixed/Dilated pupils
- Severe brain injury deemed fatal or care not beneficial after review of imaging by neurosurgery
- Stable compression fractures
- Non operative spine fractures

Candidates for transfer to [Acute Care Hospital] following neurosurgical review:

- Epidural hematoma
- Subdural Hematoma (severity of underlying brain injury and age are prognostic factors and should be considered prior to approving transfer)
- Severe TBI (consider prognosis)
- Unstable spine fractures without neurologic deficit
- Spine fractures with paralysis

Patient to remain at requesting hospital:

- Isolated subarachnoid hemorrhage
- Small intracerebral contusions with GCS > 13

Isolated Orthopedic Trauma General Guidelines

Hospitals with orthopedic support are encouraged to treat isolated femur and tibia fractures

Orthopedic Transfer Candidates:

- Complex open and closed tibia or femur fractures
- Fractures with neurovascular compromise

Isolated Facial Fracture Trauma General Guidelines

Transfers must be approved by the on call facial fracture surgeon.

Transfer Candidates:

- Displaced mandible fractures with difficulty swallowing or maintaining airway
- Intractable pain
- Compromised vision

All other facial fractures:

- Patients to remain at referring hospital
- Arrange outpatient follow up within 2 weeks

Burn Trauma General Guidelines

Do **not** accept burn patient transfers. All burn patients should be transferred directly to burn centers in Las Vegas, Salt Lake City or California.

Trauma Attachment 1 (page 1 of 2)

CSC Trauma Inter-facility Transfers

(ED to ED, and IP to ED)

Purpose: To facilitate safe and timely transfers of trauma patients to Renown Acute Care Facilities.

Step #	Operator	Task Description	Tools
1.	TC RN	Request received from outside facility to transfer a trauma patient to a Renown facility. • Complete Sections 1 and 2 of the Transfer Center (TC) Intake Form. • **TC RN requests Sending Facility to push imaging immediately** ➢ Isolated Brain or Spine Trauma → Page Neuro-hospitalist ➢ Multi-system, Pelvic Fractures, or Limb Threat → Page Trauma * Refer Burn Patients to nearest burn center	Computer Phone TC Intake Form EPIC
2.	TC RN	Complete Transfer Center Call Encounter	EPIC
3.	TC RN	Tiger Text Neuro-hospitalist or Trauma using *CSC Trauma Tiger Text Template* *Escalation Process – See attached*	Phone
4.	TC RN	Give MRN and ask film room to upload immediately	Phone
5.	TC RN	Complete Section 3 of TC Intake Form.	TC Intake Form
6.	Surgeon	Trauma Surgeon calls Transfer Center • Transfer Center contacts sending facility and establishes 3-way call on recorded line.	Phone
7.	TC RN	If patient **is not** accepted for transfer: • Document Information in Transfer Center log. *End of process.*	Computer
8.	TC RN	If patient **is** accepted for transfer: • Notify ERP of incoming patient. • Facilitate call with ERP and sending facility on recorded line.	Phone
9.	ERP	ERP Receives information from sending facility and notifies the ED Charge RN of incoming transfer utilizing Blue Sheet	Phone and Blue Sheet
10.	ED Charge RN	Charge RN activates the trauma team using existing process	

Approval Date:	**Author:**	**Reviewed by:**	**Next Review Date:**
April 2020	Hospital Care Management Leadership	Jennifer Crossley, Director of HCM and CDI	April 2021

Page 1 of 2

Trauma Attachment 1 (page 2 of 2)

11.	TC RN	Upon acceptance complete Sections 4 and 5 of the TC Intake form	TC Intake Form
12.	TC RN	Update Transfer Log	Computer

Approval Date: April 2020	**Author:** Hospital Care Management Leadership	**Reviewed by:** Jennifer Crossley, Director of HCM and CDI	**Next Review Date:** April 2021

**Shown as an example for Renown Acute Care Facilities.*

Appendix B

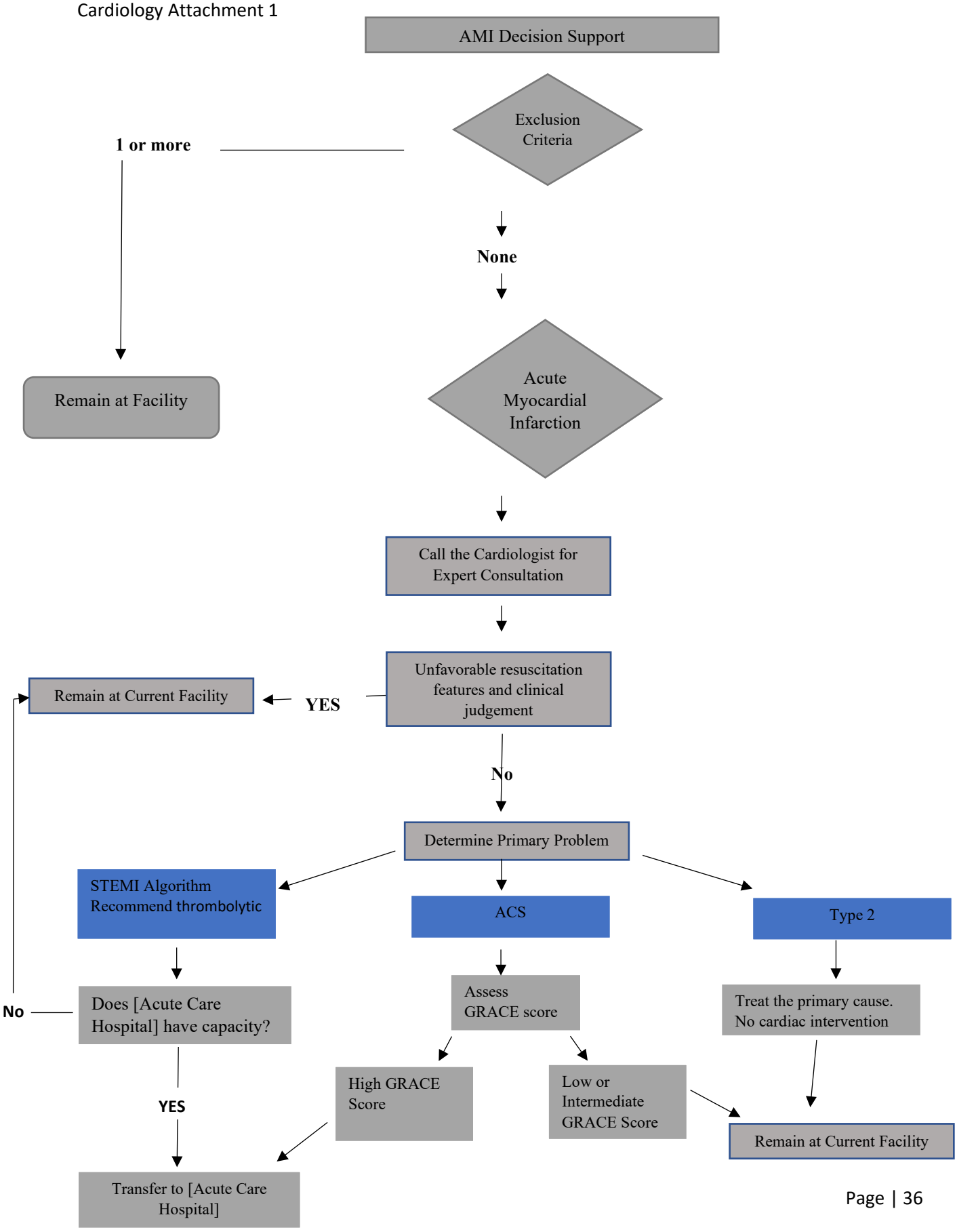
ACUTE MYOCARDIAL INFARCTION

CRITERIA FOR TRANSFER AND INTERVENTION CRITERIA

Acute Myocardial Infarction (AMI) Transfer Criteria: Decision Making Tools for Intervention

- Transfers must be approved by the cardiologist on call following normal operating process with Transfer Center
- Initiation of Transfer and/or Intervention will be guided by the AMI Decision Support Algorithm (Cardiology Attachment 1)
- Supporting Clinical Decision-making tools will also be used
    - Cardiology Attachment 2 Figures 1 and 2
    - Cardiology Attachment 3

Cardiology Attachment 1



Cardiology Attachment 2 (Figures 1 and 2)

Figure 1 *Tools to Aid Decision-Making in ACP* – Robert M. Taylor MD

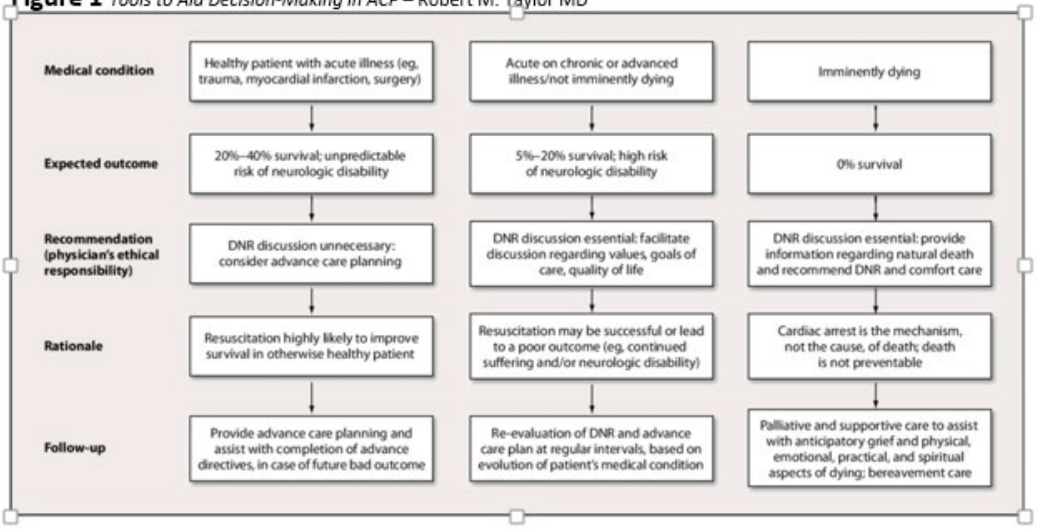
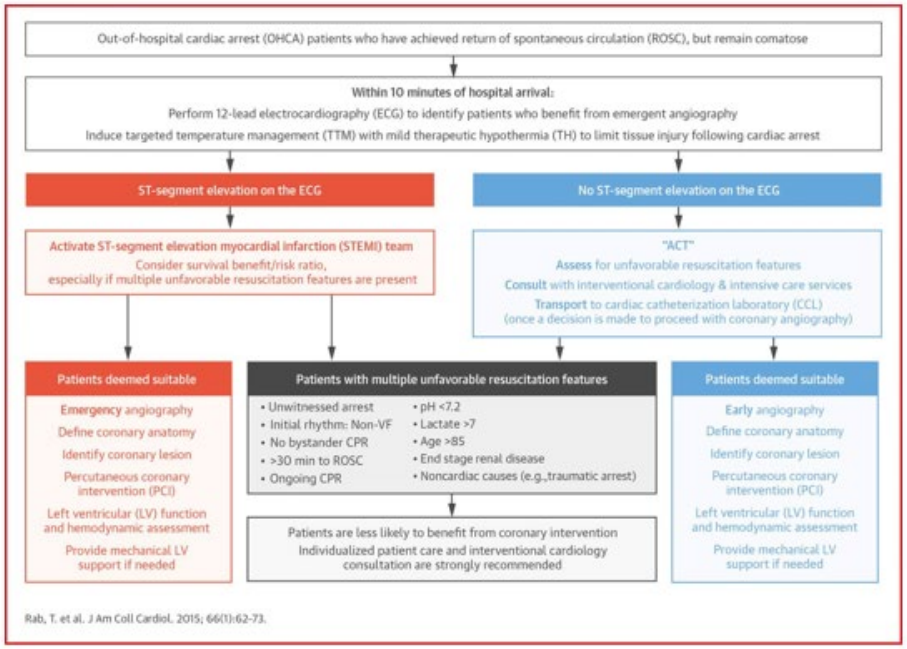
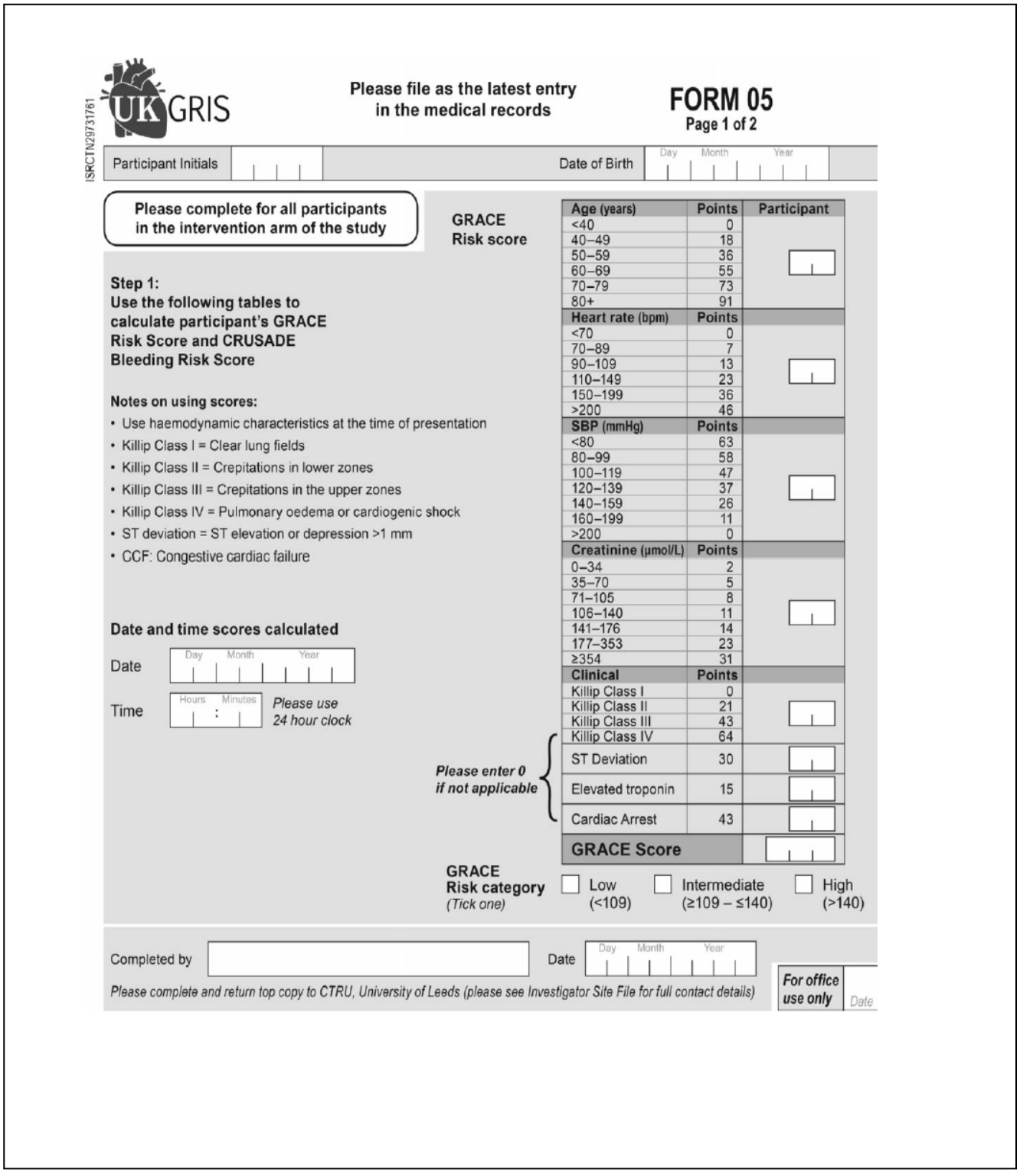


Figure 2 *Treatment Algorithm for Emergent Invasive Cardiac Procedure in the Resuscitated Comatose Patient (JACC July 2015: 66:1)*



Cardiology Attachment 3



ISRCTN29731761

UKGRIS

Please file as the latest entry in the medical records

FORM 05
Page 1 of 2

Participant Initials | Date of Birth (Day Month Year)

Please complete for all participants in the intervention arm of the study

GRACE Risk score

Step 1:
Use the following tables to calculate participant's GRACE Risk Score and CRUSADE Bleeding Risk Score

Notes on using scores:
- Use haemodynamic characteristics at the time of presentation
- Killip Class I = Clear lung fields
- Killip Class II = Crepitations in lower zones
- Killip Class III = Crepitations in the upper zones
- Killip Class IV = Pulmonary oedema or cardiogenic shock
- ST deviation = ST elevation or depression >1 mm
- CCF: Congestive cardiac failure

Age (years)	Points	Participant
<40	0	
40–49	18	
50–59	36	
60–69	55	
70–79	73	
80+	91	
Heart rate (bpm)	**Points**	
<70	0	
70–89	7	
90–109	13	
110–149	23	
150–199	36	
>200	46	
SBP (mmHg)	**Points**	
<80	63	
80–99	58	
100–119	47	
120–139	37	
140–159	26	
160–199	11	
>200	0	
Creatinine (µmol/L)	**Points**	
0–34	2	
35–70	5	
71–105	8	
106–140	11	
141–176	14	
177–353	23	
≥354	31	
Clinical	**Points**	
Killip Class I	0	
Killip Class II	21	
Killip Class III	43	
Killip Class IV	64	
ST Deviation	30	
Elevated troponin	15	
Cardiac Arrest	43	
GRACE Score		

Please enter 0 if not applicable

Date and time scores calculated

Date (Day Month Year)

Time (Hours : Minutes) *Please use 24 hour clock*

GRACE Risk category *(Tick one)*
☐ Low (<109) ☐ Intermediate (≥109 – ≤140) ☐ High (>140)

Completed by | Date (Day Month Year)

Please complete and return top copy to CTRU, University of Leeds (please see Investigator Site File for full contact details)

For office use only Date

Appendix C

STROKE TRANSFER CRITERIA

All transfers must be approved by Neurohospitalist on call – see standard work below

CSC Stroke Inter-facility Transfers

(ED to ED, and IP to ED)

Purpose: To facilitate safe and timely transfers of Stroke patients to Renown Acute Care Facilities.

Step #	Operator	Task Description	Tools
1.	TC RN	Request received from outside facility to transfer a stroke patient to a Renown Regional. • Complete Sections 1 and 2 of the Transfer Center (TC) Intake Form. • **TC RN requests Sending Facility to push imaging immediately**	Computer Phone Intake Form EPIC
2.	TC RN	Complete Transfer Center Call Encounter	EPIC
3.	TC RN	Tiger Text Neuro-hospitalist *CSC Stroke Tiger Text Template*	Phone
4.	TC RN	Contact Film Room and give MRN and ask film room to upload immediately	Phone
5.	TC RN	Complete Section 3 of TC Intake Form.	TC Intake Form
6.	MD	Neuro-hospitalist calls Transfer Center • Transfer Center contacts sending facility and establishes 3-way calling on recorded line.	Phone
7.	TC RN	If patient **is not** accepted for transfer to Renown Regional • Document Information in Transfer Center log. *End of process.*	Computer
8.	TC RN	If patient **is** accepted for transfer. • Notify ERP of incoming patient. • Facilitate call with ERP and sending facility on recorded line.	Phone
9.	ERP	ERP Receives information from sending facility and notifies the ED Charge RN of incoming transfer utilizing Blue Sheet	Phone and Blue Sheet
10.	ED Charge RN	Charge RN activates the trauma team using existing process	
11.	TC RN	Upon acceptance complete Sections 4 and 5 of the TC Intake form	TC Intake Form
12.	TC RN	Update Transfer Log	Computer

Approval Date: April 2020	**Author:** Hospital Care Management Leadership	**Reviewed by:** Jennifer Crossley, Director of HCM and CDI	**Next Review Date:** April 2021

Page 1 of 1

**Shown as an example for Renown Acute Care Facilities.*

Appendix D

ADDITIONAL SPECIALTY POPULATIONS TRANSFER CRITERIA

MATERNAL-CHILD CRITERIA

- No transfer exclusions - Follow standard operating process

PEDIATRIC CRITERIA

- No transfer exclusions - Follow standard operating process

**Shown as an example for Renown Health.*

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