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Coronavirus Disease 2019 (COVID-19)

Clinical Questions about COVID-19: Qu Answers

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What are you looking for?

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COVID-19 Risk

Are there work restrictions recommended for HCP with underlying health condition COVID-19 patients? What about for pregnant HCP?

Among adults, the risk for severe illness from COVID-19 increases with age, with olde Severe illness means that the person with COVID-19 may require hospitalization, intens help them breathe, or they may even die. People of any age with certain underlying me increased risk for severe illness from COVID-19. Based on what we know at this time, **pr an increased risk for severe illness from COVID-19**compared to non-pregnant people. increased risk of adverse pregnancy outcomes, such as preterm birth, among pregnant

What should HCP do outside of work to prevent spread of COVID-19 transmission?

Please review CDC's guidance on Public Health Recommendations for Community-Relat choose to implement extra measures when arriving home from providing healthcare, s worn during delivery of healthcare, taking off shoes, washing clothing, and immediately are optional personal practices because there is insufficient evidence on whether they a person transmission is currently thought to be the main way the virus spreads, but we a how this virus spreads.

Who is at risk for infection with the virus that causes COVID-19?

Currently, those at greatest risk of infection are persons who have had prolonged, unpr patient with symptomatic, confirmed COVID-19 and those who live in or have recently b transmission. For more information, see Risk Assessment.

Who is at risk for severe disease from COVID-19?

COVID-19 is a new disease. and CDC is learning more about it and how it affects people **risk for severe illness from COVID-19 increases with age, with older adults at highest** that the person with COVID-19 may require hospitalization, intensive care, or a ventilat they may even die. People of any age with certain underlying medical conditions are at illness from COVID-19.

Based on what we know at this time, **pregnant people might be at an increased risk fo COVID-19** compared to non-pregnant people. Additionally, there may be an increased r outcomes, such as preterm birth, among pregnant people with COVID-19.

See also Interim Clinical Guidance for Management of Patients with Confirmed Coronav and Information for Healthcare Professionals: COVID-19 and Underlying Conditions.

Patients with Asthma

If I have patients with asthma, do I need to make any changes to their daily asthma p regimens to reduce their risk of getting sick with COVID-19?

People with moderate to severe asthma might be at higher risk of getting very sick from

Based on what we currently know about COVID-19, the selection of therapeutic options recommended treatment of asthma has not been affected. are available. Continuation particularly important for patients already using these medications because there is no COVID-19 morbidity with use of inhaled corticosteroids and an abundance of data show exacerbation with maintenance of asthma controller therapy.

Patients with asthma but without symptoms or a diagnosis of COVID-19 should continu treatments.

Patients with Hypertension

Are patients with hypertension at higher risk for severe illness from COVID-19?

Hypertension is common in the United States. Hypertension is more frequent with adva non-Hispanic blacks, and people with other underlying medical conditions such as obes heart disease. Based on what we know at this time, people with pulmonary hypertensic severe illness. People with hypertension (high blood pressure) may have an increased r

If my patient has an underlying medical condition, what is my patient's risk of acqui illness from COVID-19, and what should I tell my patient?

- There is insufficient information on COVID-19 to determine the level of risk for each CDC is analyzing data continuously and provides updates as soon as new informatio
- You know your patient's overall health and how well their conditions are managed. U evaluate on a case by case basis. Patients frequently in congregate settings are at in Patients with underlying medical conditions may be at increased risk of severe disea
- If possible, work with patients to manage their underlying condition to the best of th that patients have sufficient medication and supplies. Prescribing three-month supp ensure access to sufficient medications.
- Explain to all patients which symptoms of their chronic conditions require emergenc Stress the importance of obtaining emergency care if needed.
- Reassure your patients who require emergency care that emergency departments h to protect them from acquiring COVID-19
- Tell patients with underlying medical conditions that increase their risk of severe illn COVID-19:
  - To stay home as much as possible to reduce their risk of being exposed.
  - Closely follow their care plans for management of their chronic disease, includi better glycemic or blood pressure control.
  - Seek emergency care for acute exacerbations of their underlying medical condi that requires immediate attention.
- Encourage all patients, regardless of risk, to:
  - Take steps to protect yourself.
  - **Call** your healthcare provider if you are sick with a fever, cough, or shortness of
- Follow CDC travel guidelines and the recommendations of your state and local healt about a disease can feel overwhelming, especially for those who might be at higher isolation, and for healthcare providers that are treating patients at higher risk. Do wh your mental health and encourage your patients to do the same.

Additional resources for healthcare providers

Are pregnant healthcare personnel at increased risk for adverse outcomes if they ca COVID-19?

Pregnant healthcare personnel (HCP) should follow risk assessment and infection contr to patients with suspected or confirmed COVID-19. Adherence to recommended infecti practices is an important part of protecting all HCP in healthcare settings. Based on wha pregnant people might be at an increased risk for severe illness from COVID-19 compar Additionally, there may be an increased risk of adverse pregnancy outcomes, such as pr people with COVID-19. Facilities may want to consider limiting exposure of pregnant HC or suspected COVID-19, especially during higher risk procedures (e.g., aerosol-generatir based on staffing availability.

What is multisystem inflammatory syndrome in children (MIS-C) and who is at risk?

CDC is investigating reports of multisystem inflammatory syndrome in children (MIS-C) Patients with MIS-C have presented with a persistent fever and a variety of signs and sy (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic, neurologic) involvemer markers. CDC is collaborating with domestic and international partners to better under including how common it is and its risk factors, and to begin tracking cases. For more ir case definition, visit MIS-C Information for Healthcare Providers.

Infection Control

Do CDC's interim infection prevention and control recommendations for COVID-19 a hospitals or other behavioral health facilities?

Yes. To keep patients and healthcare personnel (HCP) healthy and safe, CDC's infection guidance applies to all settings where healthcare is delivered. However, as with any gui certain recommendations to their setting. For example, inpatient psychiatric care incluc and group activities that may need to continue. If so, these activities might need to be a distancing recommendations. Other recommended infection control measures (for exa alcohol-based hand sanitizer, cohorting patients with COVID-19 and assigning dedicate universal source control measures) might not be safe or appropriate to implement in al due to security and behavioral concerns.

Challenges and potential solutions specific to behavioral health settings might include:

- Cohorting
  - **Challenge:** To prevent transmission, it is generally recommended that patients to a separate area of the facility where they can be cared for by dedicated HCP. or specialized care needs, it might not be possible to cohort certain patients tog assigned to their care.
  - **Potential Solutions:** When cohorting is not possible, implement measures to m least 6 feet) between patients with COVID-19 and others on the unit. Ideally, thi bathroom for COVID-19 patients. Ensure HCP wear all recommended personal when caring for patients with suspected or confirmed COVID-19.
- Group Therapy Sessions
  - **Challenge**: Group counseling, therapy, and discussion sessions are a critical co psychiatric treatment and care plans, but the traditional set-up for these activit social distancing recommendations.
  - **Potential Solutions**: When possible, use virtual methods, or decrease group siz maintained. In the event that COVID-19 is transmitted in the facility, sessions sh discussion forum until additional infection prevention measures are in place to
- Cloth Face Coverings
  - **Challenge:** For some patients, the use of cloth face coverings or facemasks mig or may cause distress. Some patients may be unable or unwilling to use them a straps can be used for strangling oneself or others, and metal nasal bridges car weapon.
  - **Potential Solutions:** Consider allowing patients at low risk for misuse to wear c

If a long-term care facility has a resident or staff member with suspected or confirm whom should this be communicated?

Facilities should follow the reporting requirements of their state or jurisdiction. Those r Medicare and Medicaid Services (CMS) (e.g., nursing homes) should also follow all CMS are being updated to include new requirements for reporting to CDC and to residents a

In addition, CDC recommends that health departments be promptly notified about:

- Residents or healthcare personnel (HCP) with suspected or confirmed COVID-19,
- Residents with severe respiratory infection resulting in hospitalization or death, and
- ≥ 3 residents or HCP with new-onset respiratory symptoms within 72 hours of each

These could signal an outbreak of COVID-19 or other respiratory disease in the facility. provide important guidance to assist with case finding and halting transmission.

The facility should also have a plan and mechanism to regularly communicate with resi HCP, including if cases of COVID-19 are identified in the facility. Often, information in nu communicated through town hall meetings and staff meetings, along with letters or em COVID-19 pandemic, in-person gatherings should not occur. Instead, communication sh meetings over phone or web platforms. These should be supplemented with written co contact information for a staff member who can respond to questions or concerns. Cor information describing the current situation, plans for limiting spread within the facility, they can take to protect themselves and others. Facilities should make this information and offer periodic updates as the situation develops and more information becomes av

Is a negative test for SARS-CoV-2, the virus that causes COVID-19, required before a be discharged to a nursing home?

No. For patients hospitalized with SARS-CoV-2 infection, decisions about discharge from on their clinical status and the ability of an accepting facility to meet their care needs ar infection prevention and control practices. Decisions about hospital discharge are distir discontinuation of Transmission-Based Precautions.

For patients with suspected or confirmed SARS-CoV-2 infection, decisions about discont Precautions should be based on the strategies outlined here. The test-based strategy is limited circumstances.

If a patient with suspected or confirmed SARS-CoV-2 infection **has not** met criteria for d Based Precautions, they should be transferred to a facility with the ability to adhere to i control recommendations for the care of residents with SARS-CoV-2 infection, including the facility designated to care for residents with SARS-CoV-2 infection and provision of r protective equipment to healthcare personnel.

If the patient **has** met the criteria for discontinuing Transmission-Based Precautions, th restrictions.

A patient hospitalized for non-COVID-related illnesses who is not known to have SARS-C transferred to a nursing home without testing. To ensure a patient was not exposed an SARS-CoV-2 infection, nursing homes should place the patient in Transmission-based Pr observation area or in a single-person room for 14 days after admission.

As part of universal source control measures, all residents (including those described in wear a cloth face covering or facemask (if tolerated) whenever they leave their room.

During the COVID-19 pandemic, are there special considerations for surgical and otl settings, including performance of aerosol-generating procedures (AGPs)?

As part of routine practices, healthcare personnel (HCP) should be applying Standard Pr deliberately assess potential risks of exposure to infectious material before engaging in healthcare delivery. Based on their risk assessment, safe work practices, including engi the release of infectious material, administrative controls, and use of personal protecti implemented at the point of care according to CDC guidelines and standards of practice

To reduce SARS-CoV-2 exposure during the COVID-19 pandemic, CDC recommends that

- consider nonoperative approaches when feasible;
- minimize the use of procedures or techniques that might produce infectious aeroso
- minimize the number of people in the operating or procedure room to reduce expos
- use the extent of community transmission and an assessment of the likelihood for p to make decisions about cancelling or postponing elective surgeries and procedures
- implement universal source control measures, which includes having patients wear tolerated) and having HCP wear a facemask at all times while they are in the healthc

If surgery or procedures cannot be postponed, HCP caring for patients with suspected c adhere to all recommended infection prevention and control practices for COVID-19. T

- Using all recommended PPE: an N95 or equivalent or higher-level respirator (or face available), eye protection, gloves, and a gown.
  - Respirators with exhalation valves should not be used during surgical procedur breath would compromise the sterile field.
  - If shortages exist, N95 or equivalent or higher-level respirators should be priori higher risk techniques (e.g., that generate potentially infectious aerosols) or tha where viral loads might be higher (e.g., nose and throat, oropharynx, respirator
- As part of routine practice, HCP should also be using additional engineering controls applicable (e.g., smoke evacuation devices).

Because SARS-CoV-2 can be transmitted by individuals who are infected but do not hav individuals will not be identified by screening for clinical signs and symptoms. HCP pro care to patients not suspected of having SARS-CoV-2 infection should use a tiered appr community transmission to inform the need for universal eye protection and respirator

Why does CDC continue to recommend respiratory protection equivalent or higher
an N95 disposable filtering facepiece respirator for care of patients with known or s

CDC's guidance to use NIOSH-approved N95 disposable filtering facepiece or higher lev
care for patients with suspected or known COVID-19 is based on the current understan
related respiratory viruses.

Current data suggest that close-range aerosol transmission by droplet and inhalation, a
delivery to the eyes, nose, or mouth are likely routes of transmission. Long-range aeros
seen with measles, has not been a feature of SARS-CoV-2.

Potential routes of close-range transmission include splashes and sprays of infectious r
membranes and inhalation of infectious virions exhaled by an infected person. The rela
these is not known for SARS-Co-V-2.

Facemasks commonly used during surgical procedures will provide barrier protection a
contacting mucous membranes of the nose and mouth, but they are not designed to pr
small particles. N95 and higher level respirators, such as other disposable filtering facep
purifying respirators (PAPRs), and elastomeric respirators, provide both barrier and res
their tight fit and filtration characteristics.

Respirators should be used as part of a respiratory protection program that provides st
training, and fit testing.

Although facemasks are routinely used for the care of patients with common viral respi
higher level respirators are routinely recommended for emerging pathogens like SARS
potential for transmission via small particles, the ability to cause severe infections, and
vaccines.

CDC recommendations acknowledge the current challenges with limited supplies of N9
Facilities that do not have sufficient supplies of N95s and other respirators for all patier
use for activities and procedures that pose high risks of generating infectious aerosols a
that does not involve those activities or procedures. Detailed strategies for optimizing t
respirators are available on the CDC website. Once availability of supplies is reestablish
the use of N95 and higher level respirators should resume.

What personal protective equipment (PPE) should be worn by individuals transporti suspected or confirmed SARS-CoV-2 infection within a healthcare facility? For examp worn when transporting the patient to radiology for imaging that cannot be perforn

In general, transport and movement of a patient with suspected or confirmed SARS-CoV room should be limited to medically essential purposes. If being transported outside of radiology, healthcare personnel (HCP) in the receiving area should be notified in advanc For transport, the patient should wear a facemask or cloth face covering (if tolerated) tc covered with a clean sheet.

If transport personnel must prepare the patient for transport (e.g., transfer them to the transport personnel should wear all recommended PPE (gloves, a gown, respiratory prc protective as a fit tested NIOSH-certified disposable N95 filtering facepiece respirator o not available—and eye protection [i.e., goggles or disposable face shield that covers the This recommendation is needed because these interactions typically involve close, ofte the patient in an enclosed space (e.g., patient room). Once the patient has been transfe gurney (and prior to exiting the room), transporters should remove their gown and glov hygiene.

The transporter should continue to wear a respirator or facemask. The continued use c transporter is also recommended if there is potential that the patient might not be able cloth face covering for the duration of transport. Additional PPE should not be require anticipated need to provide medical assistance during transport (e.g., helping the patie facemask).

After arrival at their destination, receiving personnel (e.g., in radiology) and the transpo should perform hand hygiene and wear all recommended PPE. If still wearing their orig and eye protection, the transporter should take care to avoid self-contamination when recommended PPE. This cautious approach will be refined and updated as more inform as response needs change in the United States.

Interim guidance for EMS personnel transporting patients with confirmed or suspected is available here. EMS personnel should wear all recommended PPE because they are p and in close contact with the patient for longer periods of time.

What personal protective equipment (PPE) should be worn by environmental servic clean and disinfect rooms of hospitalized patients with SARS-CoV-2 infection?

In general, only essential personnel should enter the room of patients with SARS-CoV-2 should consider assigning daily cleaning and disinfection of high-touch surfaces to nurs already be in the room providing care to the patient. If this responsibility is assigned to wear all recommended PPE when in the room. PPE should be removed upon leaving th by performance of hand hygiene.

After discharge, terminal cleaning can be performed by EVS personnel. They should del time has elapsed for enough air changes to remove potentially infectious particles. Afte personnel can enter the room and should wear a facemask (for source control) along w performing terminal cleaning. Eye protection should be added if splashes or sprays dur activities are anticipated or otherwise required based on the selected cleaning product recommended at this time for personnel caring for patients with SARS-CoV-2 infection.

Which procedures are considered aerosol generating procedures in healthcare setti

Some procedures performed on patients are more likely to generate higher concentrati aerosols than coughing, sneezing, talking, or breathing. These aerosol generating proce healthcare personnel and others at an increased risk for pathogen exposure and infect

Development of a comprehensive list of AGPs for healthcare settings has not been poss available data on which procedures may generate potentially infectious aerosols and th reported transmissions during AGPs are due to aerosols or other exposures.

There is neither expert consensus, nor sufficient supporting data, to create a definitive AGPs for healthcare settings.

Commonly performed medical procedures that are often considered AGPs, or that crea secretions, include:

- open suctioning of airways
- sputum induction
- cardiopulmonary resuscitation
- endotracheal intubation and extubation
- non-invasive ventilation (e.g., BiPAP, CPAP)
- bronchoscopy
- manual ventilation

Based on limited available data, it is uncertain whether aerosols generated from some such as:

- nebulizer administration*
- high flow O2 delivery

*Aerosols generated by nebulizers are derived from medication in the nebulizer. It is ur associations between performing this common procedure and increased risk of infectio generated by the procedure or due to increased contact between those administering t infected patients.

How long does an examination room need to remain vacant after being occupied by confirmed or suspected COVID-19?

Although spread of SARS-CoV-2 is believed to be primarily via respiratory droplets, the c respirable particles to close proximity transmission is currently uncertain. Airborne trar person over long distances is unlikely.

The amount of time that the air inside an examination room remains potentially infecti depend on a number of factors including the size of the room, the number of air chang patient was in the room, if the patient was coughing or sneezing, and if an aerosol-gene performed. Facilities will need to consider these factors when deciding when the vacate someone who is not wearing PPE.

For a patient who was not coughing or sneezing, did not undergo an aerosol-generating room for a short period of time (e.g., a few minutes), any risk to HCP and subsequent pa matter of minutes. However, for a patient who was coughing and remained in the room underwent an aerosol-generating procedure, the risk period is likely longer.

For these higher risk scenarios, it is reasonable to apply a similar time period as that us the airborne route (e.g., measles, tuberculosis) and to restrict HCP and patients without until sufficient time has elapsed for enough air changes to remove potentially infectious

General guidance on clearance rates under differing ventilation conditions is available.

In addition to ensuring sufficient time for enough air changes to remove potentially infe clean and disinfect environmental surfaces and shared equipment before the room is u

My hospital is experiencing a shortage of isolation gowns. To preserve our supply, c for the care of patients with methicillin-resistant Staphylococcus aureus (MRSA) and multidrug-resistant organisms (MDROs), and Clostridioides difficile?

CDC has released information about strategies to optimize the supply of isolation gown refer to that guidance and implement the recommended strategies to optimize their cu includes shifting toward the use of washable cloth gowns, if feasible.

The use of gowns as part of Contact Precautions in the context of MDROs has been imp the risk of transmission to other patients rather than to protect healthcare personnel (H could consider suspending the use of gowns for the care of patients with endemic MDR ESBL-producing Gram-negative bacilli except as required for Standard Precautions. Faci epidemiology to determine which MDROs are considered endemic. Regardless of the us should continue to wear gloves for contact with these patients and their environment. H to be emphasized. Facilities should also attempt to place patients colonized or infected room, if available.

- **Caring for patients who have highly resistant Gram-negative organisms (e.g., carb Enterobacteriaceae) and other MDROs (e.g., *Candida auris*) that are not considered** gowns being donned for every room entry, they should be reserved for use as part o also prioritized for high-contact patient care activities that pose highest risk for trans patient to HCP. Examples of such high-contact care activities include dressing, bathir providing hygiene, changing linens, changing briefs or assisting with toileting, device urinary catheter, feeding tube, tracheostomy/ventilator), and wound care. To further recommended to bundle high-contact care activities as part of individual care encou of gowns, HCP at facilities should continue to wear gloves for contact with these pati Hand hygiene should continue to be emphasized. Facilities should also attempt to pl infected with an MDRO in a private room, if available.
- **Caring for patients with *Clostridioides difficile* infections (CDI):** Facilities should cor Precautions (putting on a gown and gloves upon entry into the patient's room and p room) for the care of symptomatic patients with CDI. As part of a supplemental stra of CDI, some facilities have implemented Contact Precautions for the care of patient asymptomatic carriage of *Clostridioides difficile*. There are limited data about the ro transmission of CDI. In this setting of a critical national shortage of gowns, facilities s this approach until the shortage is addressed. Gowns should still be used as part of

A healthcare provider at our facility was recently diagnosed with COVID-19. What tir we use to determine the patients, visitors, and other healthcare personnel (HCP) wh exposed to this individual while he/she was potentially infectious?

Anyone who had prolonged close contact (within 6 feet for at least 15 minutes) with the might have been exposed.

- **If the provider had COVID-19 symptoms,** the provider is considered potentially infe before symptoms first appeared until the provider meets criteria to discontinue Tran or Home Isolation.
- **If the provider did not have symptoms**, collecting information about when the prov could help inform the period when they were infectious.
  - **If an exposure is identified.** The provider should be considered potentially infe the exposure until criteria to discontinue Transmission-Based Precautions or H
  - **If the date of exposure cannot be determined**. For the purposes of contact tra cutoff of 2 days before the specimen testing positive for COVID-19 was collecte continuing until the criteria to discontinue Transmission-Based Precautions or I Although the infectious period is generally accepted to be 10 days after onset o during the entire 10 days before obtaining the specimen that tested positive fo In most situations an exposed provider cannot recall all contacts over the prece recent data suggest that asymptomatic persons may have a lower viral burden symptomatic persons, the additional resources required may divert case invest resources away from activities most likely to interrupt ongoing transmission.

Contact tracing is generally recommended for anyone who had prolonged close contact COVID-19 during these time periods. While this question addresses exposure to a pote following actions are also recommended if the potentially infectious individual is a patie

Recommended actions for HCP, patients, and visitors:

- Perform a risk assessment and apply work restrictions for other HCP who were expo based on whether these HCP had prolonged, close contact **and** what PPE they were information is available in the Interim U.S. Guidance for Risk Assessment and Work F Personnel with Potential Exposure to COVID-19.
- Place exposed patients who are currently admitted to the healthcare facility in appro Precautions and monitor them for onset of COVID-19 until 14 days after their last ex

A healthcare provider in our facility worked while infected with SARS-CoV-2. Howeve facemask at all times while interacting with patients. Are the patients at risk for SAR be notified?

Anyone who had prolonged close contact (within 6 feet for at least 15 minutes) should b exposed. The use of a facemask for source control and adherence to other recommen control (IPC) measures (e.g., hand hygiene) by the provider help to reduce the risk of tra areas with moderate to substantial community transmission, patients are already at ris due to exposures outside their home and should be alert to the development of signs c COVID-19.

The following should be considered when determining which patients are at higher risk be prioritized for evaluation and testing:

- Facemask use by the patient – Mirroring the risk assessment guidance for healthcar wearing a facemask would likely be at higher risk for infection compared to those th
- Type of interaction that occurred between the patient and infected provider – An int manipulation or prolonged close contact with the patient's eyes, nose, or mouth (e.g higher risk of transmission to the patient compared to other interactions (e.g., blooc
- PPE used by infected HCP – HCP wearing a facemask (or respirator) and face shield t chin might have had better source control than wearing only a facemask. Note that r valves might not provide source control.
- Current status of patient – Is the patient currently admitted to a hospital or long-terr individuals, if infected, can be at higher risk for severe illness and have the potential individuals at risk for severe disease.

Transmission

When is someone infectious?

The onset and duration of viral shedding and the period of infectiousness for COVID-19 certainty. Based on current evidence, scientists believe that persons with mild to mode replication-competent SARS-CoV-2 for up to 10 days following symptom onset, while a s severe COVID-19, including immunocompromised persons, may shed replication-comp It is possible that SARS-CoV-2 RNA may be detectable in the upper or lower respiratory onset, similar to infections with MERS-CoV and SARS-CoV. However, detection of viral R that infectious virus is present. Based on existing literature, the incubation period (the t development of symptoms) of SARS-CoV-2 and other coronaviruses (e.g., MERS-CoV, SA days.

Which body fluids can spread infection?

SARS-CoV-2 RNA has been detected in upper and lower respiratory tract specimens, an isolated from upper respiratory tract specimens and bronchoalveolar lavage fluid. SARS detected in blood and stool specimens, and SARS-CoV-2 virus has been isolated in cell c patients, including a patient with pneumonia 15 days after symptom onset. The duratio detection in upper and lower respiratory tract specimens and in extrapulmonary specir may be several weeks or longer. Duration of several weeks or longer has been observe SARS-CoV infection. While viable, infectious SARS-CoV has been isolated from respirator specimens, viable, infectious MERS-CoV has only been isolated from respiratory tract sp whether other non-respiratory body fluids from an infected person including blood, vor semen can contain viable, infectious SARS-CoV-2.

Can people who recover from COVID-19 be re-infected with SARS-CoV-2?

The immune response, including duration of immunity, to SARS-CoV-2 infection is not y infected with other betacoronaviruses (MERS-CoV, HCoV-OC43), the genus to which SAR to be re-infected shortly (e.g., 3 months or more) after they recover. However, more inf whether similar immune protection will be observed for patients with COVID-19.

Testing, Diagnosis, and Notification

How do you test a patient for infection with SARS-CoV-2?

- Clinicians are able to access laboratory testing through state and local public health commercial and clinical laboratories across the country. The Association of Public He provides a list of states and territories with laboratories that are using COVID-19 vira see Testing in U.S. Clinicians should direct testing questions to their state health dep reference laboratories are also able to offer a larger volume of testing for SARS-CoV-
- CDC has guidance for who should be tested, but decisions about testing are at the d health departments and/or individual clinicians.
- Healthcare providers should report positive results to their local/state health depar collect these data directly.
- See recommendations for prioritization of testing, and instructions for specimen col COVID-19.

Do existing commercially available multiple respiratory virus panels detect SARS-Co

Yes. There are commercially developed respiratory panels with multi-pathogen molecul respiratory pathogens, including SARS-CoV-2, influenza, and other human coronaviruse respiratory illness. The U.S. Food and Drug Administration (FDA) maintains a list of tests Emergency Use Authorization (EUA).

If a patient tests positive for another respiratory virus, should that exclude SARS-Co

Patients can be infected with more than one virus at the same time. Coinfections with c people with COVID-19 have been reported. Therefore, identifying infection with one res exclude SARS-CoV-2 virus infection.

Should chest CT be used for diagnosis of COVID-19?

Clinicians considering use of chest CT scans for diagnosis or management of COVID-19 whether such imaging will change clinical management. The American College of Radiol CT should not be used to screen for COVID-19, or as a first-line test to diagnose COVID- used sparingly and reserved for hospitalized, symptomatic patients with specific clinical Appropriate infection control procedures should be followed before scanning subseque information see, ACR Recommendations for the use of Chest Radiography and Comput Suspected COVID-19 Infection .

Whom should healthcare providers notify if they suspect a patient has COVID-19?

Healthcare providers should immediately notify infection control personnel at their faci in a patient. If a patient tests positive, providers should report that positive result to the department.

How do you diagnose and report a potential case of multisystem inflammatory sync C)?

Patients with MIS-C have presented with a persistent fever and a variety of signs and sy (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic, neurologic) involvemer markers. Not all children will have the same symptoms. For children who may have MIS signs of this syndrome may include (but are not limited to) chest radiograph, echocardi evaluate for evidence of inflammation.

Healthcare providers who have cared or are caring for patients younger than 21 years c should report suspected cases to their local, state, or territorial health department. Afte health departments are available at the Council of State and Territorial Epidemiologists reporting questions, please contact CDC's 24-hour Emergency Operations Center at 770 information, including a full case definition, please visit MIS-C Information for Healthcar

Testing in Nursing Homes

Do residents or healthcare personnel (HCP) who previously had SARS-CoV-2 confirm reverse-transcriptase polymerase chain reaction, RT-PCR) and who have recently re tested as part of facility-wide testing?

The answer to this question depends on: 1) how much time has passed since the initial the individual has developed symptoms after an initial period of recovery.

- Residents and HCP who had their initial positive viral test in the past 3 months and v not need to be retested as part of facility-wide testing. Until more is known, testing s (e.g., in response to an exposure) 3 months after the date of onset of the prior infect
- Residents and HCP who had a positive viral test at any time and become symptomat initial illness should be evaluated and may need to be retested if an alternate illness

This guidance may be updated as we learn more information on how long SARS-CoV-2 r reinfection.

Should residents or HCP who have a positive antibody test for SARS-CoV-2 be testec testing?

Yes. To determine if residents and HCP have a current infection, they should have a vira transcriptase polymerase chain reaction [RT-PCR]) regardless of their antibody test resu result shows that an individual has antibodies from an infection with the virus that caus infection with a related virus from the same family of viruses (called coronavirus), such common cold. We do not know yet if having antibodies to the virus that causes COVID-1 getting infected again or, if they do, how long this protection might last. Therefore, antil to diagnose COVID-19 and should not be used to inform infection prevention actions.

How should facilities approach residents who decline testing?

Residents, or their medical powers of attorney, have the right to decline testing. Clinical may include alternative specimen collection sources that may be more acceptable to re swabs (e.g., anterior nares). Providing information about the method of testing and rea facilitate discussions with residents and their medical powers of attorney.

If a resident has symptoms consistent with COVID-19, but declines testing, they should Based Precautions until they meet the symptom-based criteria for discontinuation.

If a resident is asymptomatic and declines testing at the time of facility-wide testing, de on Transmission-Based Precautions for COVID-19 or providing usual care should be bas evidence suggesting SARS-CoV-2 transmission (i.e., confirmed infection in HCP or nursir resident).

Only residents who have a confirmed positive viral test should be moved to COVID-19-d

How should facilities approach HCP who decline testing?

If HCP with symptoms consistent with COVID-19 decline testing, they should be presum excluded from work. Return to work decisions should be based on COVID-19 return to v discretion of the facility's occupational health program.

If asymptomatic HCP decline testing, work restriction, if any, should be determined by t health and local jurisdiction policies. All staff should be trained in proper use of persona including universal facemask policies, hand hygiene, and other measures needed to sto CoV-2.

If HCP work at multiple facilities, do they need to receive a viral test at each facility?

No, HCP do not need to be tested at each facility. If documentation of the test result is p results from one setting are adequate to meet the testing recommendations at any faci maintain appropriate documentation of test results and have a plan to evaluate and ma encouraged to tell facilities if they have had exposures at other facilities with recognized

How long should facilities continue serial testing of HCP?

Serial testing of HCP in nursing homes is indicated in two situations: when there is a CO
and as part of the reopening process. If there is a COVID-19 outbreak in the facility, all p
and HCP should be serially tested until the testing identifies no new cases of COVID-19
at least 14 days since the most recent positive result.

As part of the reopening process, the decision to serially test HCP for SARS-CoV-2 sh
of local incidence. Depending on the level of community transmission, HCP could contir
infection in the community and introducing it to residents of nursing homes.

How can public health jurisdictions prioritize testing across nursing homes?

Health departments should have a plan on how to prioritize facilities when testing capa

Priority facilities may include those with confirmed cases, those in counties with high in
to cohort residents who are found to be positive, larger facilities, and facilities with mor
healthcare exposures (e.g., recent hospitalization or outpatient dialysis).

If a facility identifies additional cases through facility-wide testing, then that facility shou
testing of negative residents.

Should asymptomatic HCP who are tested as part of facility-wide testing be exclude waiting for test results?

If HCP remain asymptomatic, they may continue working while awaiting test results, un
been implemented by the occupational health program because of an exposure warrar

Treatment and Management

Should post-exposure prophylaxis be used for people who may have been exposed COVID-19?

There is currently no FDA-approved post-exposure prophylaxis for people who may hav
For information about registered clinical trials of investigational therapeutics for pre- or
SARS-CoV-2 infection, visit ClinicalTrials.gov .

For more information on movement restrictions, monitoring for symptoms, and evalua
to COVID-19, see Interim US Guidance for Risk Assessment and Public Health Managem
Coronavirus Disease 2019 (COVID-19) Exposure in Travel-associated or Community Sett
Guidance for Risk Assessment and Public Health Management of Healthcare Personnel
Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19).

The National Institutes of Health recently published guidelines on prophylaxis use for C
management of COVID-19 patients. For more information, please visit: National Institut
Disease 2019 (COVID-19) Treatment Guidelines .

How are COVID-19 patients treated?

Not all patients with COVID-19 will require medical supportive care. Clinical managemer
with COVID-19 is focused on supportive care for complications, including supplemental
support for respiratory failure, septic shock, and multi-organ failure. Empiric testing and
bacterial etiologies may be warranted.

The National Institutes of Health has published interim guidelines for the medical mana
prepared by the COVID-19 Treatment Guidelines Panel.

For information on investigational therapies, see Therapeutic Options for Patients with

Do patients with confirmed or suspected COVID-19 need to be admitted to the hosp

Not all patients with COVID-19 require hospital admission. Patients whose clinical prese clinical management for supportive medical care should be admitted to the hospital un Transmission-Based Precautions.

Some patients with initial mild clinical presentation may worsen in the second week of i monitor these patients in the inpatient or outpatient setting should be made on a case- will depend not only on the clinical presentation, but also on the patient's ability to enga feasibility of safe isolation at home, and the risk of transmission in the patient's home e information, see Interim Infection Prevention and Control Recommendations for Patien Confirmed Coronavirus Disease 2019 (COVID-19) in a Healthcare Setting and Interim Gu Home Care of People Not Requiring Hospitalization for Coronavirus Disease 2019 (COV

References related to hospitalization and outcomes among patients with COVID-19:

Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel corona China. *Lancet* 2020;395:497-506.

Wang D, Hu B, Hu C, et al. Clinical Characteristics of 138 Hospitalized Patients With 201 Pneumonia in Wuhan, China. *JAMA* 2020.

Dong Y, Mo X, Hu Y, et al. Epidemiology of COVID-19 Among Children in China. *Pediatric*

Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Di Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for D Prevention. *JAMA* 2020.

When can patients with confirmed COVID-19 be discharged from the hospital?

Patients can be discharged from the healthcare facility whenever clinically indicated. Me
discontinuation of Transmission-Based Precautions is not a prerequisite for discharge f
Isolation should be maintained at home if the patient returns home before the time per
discontinuation of hospital Transmission-Based Precautions.

Decisions to discontinue Transmission-Based Precautions or in-home isolation should b
following guidance:

- For hospitalized persons, see Discontinuation of Transmission-Based Precautions ar
SARS-CoV-2 Infection in Healthcare Settings.
- For non-hospitalized persons, see Interim Guidance for Implementing Home Care of
Hospitalization for COVID-19 and Discontinuation of Isolation for Persons with COVII
Settings.

Patients with Persistent or Recurrent Positiv

What do we know about detection of SARS-CoV-2 RNA after clinical recovery from C

Many recovered persons do not have detectable SARS-CoV-2 RNA in upper respiratory t
viral RNA can be persistently detected by reverse transcription polymerase chain reacti
tract samples in some persons after apparent clinical recovery. In some persons, after
two consecutive samples, later samples can test positive again. These persistent detecti
associated with higher cycle threshold (Ct) values (i.e., fewer RNA copies) than Ct values
samples collected shortly before or during clinical illness. Studies that have examined h
be detected in adults have demonstrated that, in some persons, it can be detected for v

Are clinically recovered persons infectious to others if they test persistently or recur CoV-2 RNA?

Whether the presence of detectable but low concentrations of viral RNA after clinical re presence of potentially infectious virus is unknown. Based on experience with other viru persons pose an important infectious risk to others. However, whether this is true for S been definitively established.

After the onset of illness, the detectable viral burden usually declines. After a week or m immunoglobulin becomes detectable and then antibody levels increase. Some of these virus from infecting cells in cell culture. A decline in viral RNA is associated with a decrea virus. For most patients with COVID-19, efforts to isolate live virus from upper respirato unsuccessful when specimens are collected more than 10 days after illness onset. Reco and 20 days after symptom onset has been documented in some persons with severe C these persons were in an immunocompromised state.

Persons who have tested persistently or recurrently positive for SARS-CoV-2 RNA have, and symptoms of COVID-19 improve. When viral isolation in tissue culture has been att South Korea and the United States, live virus has not been isolated. There is no evidenc recovered persons with persistent or recurrent detection of viral RNA have transmitted

Despite these observations, it's not possible to conclude that all persons with persisten SARS-CoV-2 RNA are no longer infectious. There is no firm evidence that the antibodies SARS-CoV-2 infection are protective. If these antibodies are protective, it's not known wh needed to protect against reinfection.

These data and experience with other viral respiratory infections indicate that most per COVID-19 who test persistently or recurrently positive by RT-PCR are likely no longer inf precautions may be discontinued for persons with COVID-19 10 days after symptom or symptoms first began, including non-respiratory symptoms), provided their fever has re without the use of fever-reducing medications, and their other symptoms have improve severe or critical illness, or who are severely immunocompromised, isolation and preca up to 20 days after symptom onset.

Can cycle threshold (Ct) values be used to assess when a person is no longer infecti

No. Although attempts to culture virus from upper respiratory specimens have been lar values are in high but detectable ranges, Ct values are not a quantitative measure of vir values are not standardized by RT-PCR platform nor have they been approved by FDA f CDC does not endorse or recommend use of Ct values to assess when a person is no lo serial Ct values may be useful in the context of the entire body of information available resolution of infection.

What further evidence is needed to be reassured that persistent or recurrent shedd after recovery does not represent the presence of infectious virus?

Prospectively collecting serial respiratory samples and attempting to isolate live virus in persons testing positive by RT-PCR following illness recovery is needed. If repeated atte competent virus in culture from such serial samples are unsuccessful, that data would b infectious virus is absent. Then we would be sure that persons continuing to test positiv risk to others.

Can viral culture be used to demonstrate that a person who had persistently or recu RNA is not infectious to others?

Yes. However, viral culture is not widely performed for SARS-CoV-2. It must be conducte laboratories using BSL-3 practices by experienced virologists and culture results can tak while persons whose specimens do not yield live virus are considered no longer infecti testing and the time required to complete it mean that culture cannot be used routinely infected persons.

A person who previously tested positive by RT-PCR for SARS-CoV-2 and clinically rec later tested again, for example, as part of a contract tracing investigation. If that per by RT-PCR, should they be managed as potentially infectious to others, and isolated

For persons who remain asymptomatic following recovery from COVID-19, retesting (e.g investigation) is not necessary during the first 3 months after the date of symptom onse less than 3 months after the person's symptom onset of their most recent illness, it is p represents a new infection or a persistently positive test associated with the previous ir occurs more than 3 months after a person's symptom onset, clinicians and public healt the possibility of reinfection. Until we have more information, the determination of whe test in these situations is contagious to others should be made on a case-by-case basis. infectious diseases specialists and public health authorities to review all available inforr time from initial positive test, RT-PCR Ct values, and presence of COVID-19 signs or sym determined to be potentially infectious should undergo evaluation and remain isolated for discontinuation of isolation or discontinuation of transmission-based precautions, d circumstances.

If a previously infected person has clinically recovered but later develops symptoms COVID-19, should the person be isolated again and tested for SARS-CoV-2?

Persons who develop new symptoms consistent with COVID-19 more than 3 months af of the most recent illness episode should be retested. Persons with recurrent symptom test positive should be considered infectious and remain isolated until they again meet isolation or of transmission-based precautions. Contact tracing during the person's sec warranted. For persons who develop new symptoms consistent with COVID-19 during t date of symptom onset of the most recent illness episode, retesting may be warranted illness cannot be identified. If reinfection is suspected, repeat isolation and contact trac determination of whether a patient with a subsequently positive test is contagious to ot case-by-case basis, in consultation with infectious diseases specialists and public health available information (e.g., medical history, time from initial positive test, RT-PCR Ct valu COVID-19 signs or symptoms).

If an infected person has clinically recovered and then later is identified as a contact need to be quarantined?

A person who has clinically recovered from COVID-19 and then is identified as a contact months of symptom onset of their most recent illness does not need to be quarantined However, if a person is identified as a contact of a new case 3 months or more *after* syr follow quarantine recommendations for contacts.

If an infected person has clinically recovered using the symptom-based strategy, do they are not infectious?

No. The symptom-based strategy is intended to replace the need for repeated testing.

If an infected person has clinically recovered, should the person continue to wear a public?

Yes. It is recommended that all persons, with a few exceptions, wear cloth face coverinç purpose of cloth face coverings is to limit transmission of SARS-CoV-2 from infected per but do not have clinical symptoms of illness or may have early or mild symptoms that tl face coverings may provide reassurance to others in public settings and be a reminder distancing. However, cloth face coverings are not personal protective equipment (PPE) a instead of a respirator or a facemask to protect a healthcare worker.

[1] Cloth face coverings should not be placed on young children under age 2, anyone wl anyone who is unconscious, incapacitated, or otherwise unable to remove the mask wit

Obstetrical Care

Does CDC recommend use of facemasks or respirators for healthcare personnel (HC patients with known or suspected COVID-19 infection?

When available, respirators (or facemasks if a respirator is not available), eye protectior used for the care of patients with known or suspected COVID-19 infection, including wo more information, please see Interim Infection Prevention and Control Recommendatic Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings.

How should the use of N95 respirators be prioritized within obstetric healthcare set

During respirator shortages, care should be taken to ensure that N95 respirators are re respiratory protection is most important, such as performance of aerosol-generating pr suspected or confirmed COVID-19 infection. In such shortage situations, facemasks mig patient care.

Alternatives to N95 respirators might be considered where feasible. These include othe filtering facepiece respirators, half facepiece or full facepiece elastomeric respirators, ar respirators (PAPRs) where feasible. All of these alternatives will provide equivalent or hi respirators when properly worn. However, PAPRs and elastomeric respirators should n due to concerns that exhaled air may contaminate the sterile field. For more informatic Optimizing the Supply of N95 Respirators: Conventional Capacity Strategies.

When respirator supplies are restored, the facility can switch back to use of N95 respira with known or suspected COVID-19 infection. For more information, please see Interim Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disea Healthcare Settings.

Is forceful exhalation during the second stage of labor considered an aerosol-gener respirator prioritization during shortages?

Based on limited data, forceful exhalation during the second stage of labor would not b aerosols to the same extent as procedures more commonly considered to be aerosol g bronchoscopy, intubation, and open suctioning. Forceful exhalation during the second considered an aerosol-generating procedure for respirator prioritization during shortag likely to generate higher concentrations of infectious respiratory aerosols.

When respirator supplies are restored, as with all clinical care activities for patients with COVID-19, HCP should use respirators (or facemasks if a respirator is not available), eye gowns during the second stage of labor, in addition to other personal protective equipr indicated for labor and delivery. For more information please see: Healthcare Infection

Is use of high-flow oxygen considered an aerosol-generating procedure for respirat shortages?

Based on limited data, high-flow oxygen use is not considered an aerosol-generating pr prioritization during shortages over procedures more likely to generate higher concentr respiratory aerosols (such as bronchoscopy, intubation, and open suctioning). Patients COVID-19 should receive any interventions they would normally receive as standard of supplies are restored, as with all clinical care activities for patients with known or suspe facemasks if a respirator is not available), eye protection, gloves, and gowns should be pregnant patients with known or suspected COVID-19. For more information please see Prevention and Control FAQs

Should intrapartum fever be considered as a possible sign of COVID-19 infection?

Clinicians should use their judgment to determine if a patient has signs and symptoms and whether the patient should be tested. Fever is the most commonly reported sign; n COVID-19 have developed fever and/or symptoms of acute respiratory illness (cough, d

Data regarding COVID-19 in pregnancy are limited; according to current information, pr are expected to be similar to those for non-pregnant patients, including the presence o

Other considerations that may guide testing are epidemiologic factors such as the occu transmission of COVID-19 infections. As part of evaluation, clinicians are strongly encou of respiratory illness and peripartum fever. For more information please see: Testing O Disease 2019 (COVID-19)

What guidance is available for labor and delivery HCP with potential exposure in a h patients with COVID-19 infection?

HCP in labor and delivery healthcare settings should follow the same infection preventi recommendations and personal protective equipment recommendations as all other H patients with COVID-19 infection, guidance is available for HCP and healthcare facilities information, please see: Interim U.S. Guidance for Risk Assessment and Public Health M Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus

Drugs and Investigational Therapies

Are empiric antibiotics recommended for patients suspected of having COVID-19?

Several patients with COVID-19 have been reported to present with concurrent commu pneumonia. Decisions to administer antibiotics to COVID-19 patients should be based c infection (community-acquired or hospital-acquired), illness severity, and antimicrobial information, see Diagnosis and Treatment of Adults with Community-acquired Pneumo Practice Guideline of the American Thoracic Society and Infectious Diseases Society of A

What antiviral drugs are available to treat COVID-19?

There are currently no antiviral drugs approved by FDA to treat COVID-19. See Interim G Management of Patients with Confirmed Coronavirus Disease 2019 (COVID-19).

- For information on use of investigational drugs for treatment of patients with COVID for Patients with COVID-19.
- For information on specific clinical trials underway for treatment of patients with CO clinicaltrials.gov .

Do nonsteroidal anti-inflammatory drugs (NSAIDs) worsen the course of disease for

CDC is currently not aware of scientific evidence establishing a link between NSAIDs (e.g worsening of COVID-19. FDA , the European Medicines Agency , the World Health O continuing to monitor the situation and will review new information on the effects of NS as it becomes available. For those who wish to use treatment options other than NSAID counter and prescription medications approved for pain relief and fever reduction. Pati treat chronic conditions and have additional questions should speak to their healthcare management. Patients should use NSAIDs, and all medications, according to the produc healthcare professional.

Patients with Asthma

If I have patients with asthma, do I need to make any changes to their daily asthma regimens to reduce their risk of getting sick with COVID-19?

People with moderate to severe **asthma**, particularly if not well controlled, might be at l from COVID-19.

Based on what we currently know about COVID-19, the selection of therapeutic options recommended treatment of asthma has not been affected. National asthma guidelines Continuation of inhaled corticosteroids is particularly important for patients already usi because there is no evidence of increased risk of COVID-19 morbidity with use of inhale abundance of data showing reduced risk of asthma exacerbation with maintenance of a

Patients with asthma but without symptoms or a diagnosis of COVID-19 should continu treatments.

If my patient experiences an asthma exacerbation, should the exacerbation be treat reduce risk of COVID-19?

Selection of therapeutic options through guideline-recommended treatment of asthma affected by what we currently know about COVID-19.

Systemic corticosteroids should be used to treat an asthma exacerbation per national a current standards of care, even if it is caused by COVID-19. Short-term use of systemic c asthma exacerbations should be continued. There is currently no evidence to suggest tl corticosteroids to treat asthma exacerbations increases the risk of developing severe C abundance of data to support use of systemic steroids for moderate or severe asthma

Patients with asthma but without symptoms or a diagnosis of COVID-19 should continu treatments, as recommended by national professional organizations, including the Ame Asthma & Immunology (AAAAI) and the American College of Allergy, Asthma & Immuno providers need to be present during nebulizer use among patients who have either sym COVID-19, use CDC's recommended precautions when performing aerosol-generating p

Clinicians may be concerned that an asthma exacerbation is related to an underlying in Clinicians can access laboratory testing for COVID-19 through a network of state and lo across the country. Lists of states and territories with laboratories that are using COVID For more information, see Testing in U.S. Clinicians should direct testing questions to th departments.

Are any changes recommended to the asthma treatment plan if my patient with ast

Patients can be referred to CDC's recommendations for caring for themselves or somec COVID-19.

If nebulizer use at home is necessary for patients with asthma who have symptoms or a of the nebulizer in a location that minimizes and preferably avoids exposure to any oth and preferably a location where air is not recirculated into the home (like a porch, patio by national professional organizations, including the American College of Allergy, Asthm the ACAAI and the Allergy & Asthma Network (AAN). Limiting the number of people in th nebulizer is used is also recommended by the Asthma & Allergy Foundation of America used and cleaned according to the manufacturer's instructions.

If nebulizer use in a healthcare setting is necessary for patients who have either sympto COVID-19, use CDC's recommended precautions when performing aerosol-generating p

Patients with Liver Disease

Should people with COVID-19 and increased ALT or AST be tested for viral hepatitis?

Yes, for your COVID-19 patients with risk factors for viral hepatitis and elevated hepatic them for hepatitis A virus, hepatitis B virus, and hepatitis C virus infections. However, el aminotransferase (ALT) or aspartate aminotransferase (AST) may also be associated wit indicate greater severity of illness. For more information, review CDC's Interim Clinical G Patients with Confirmed Coronavirus Disease (COVID-19)

During the COVID-19 pandemic, should high-risk populations continue to be vaccina response to the ongoing hepatitis A outbreaks?

Yes. People susceptible to hepatitis A virus (HAV) infection during the current hepatitis A the hepatitis A vaccine when possible. This includes:

- people who use drugs (injection or non-injection)
- people experiencing unstable housing or homelessness
- men who have sex with men (MSM)
- people who are or were recently incarcerated
- people with chronic liver disease (including cirrhosis, hepatitis B, or hepatitis C) and where the hepatitis A outbreaks are ongoing

Vaccination in settings such as jails, other correctional facilities, and homeless shelters s previously planned and organized in a way that would adhere to infection control pract distancing standards can be maintained. However, efforts should be made to vaccinate settings that allow for social distancing. Whenever possible, vaccination efforts in non-c continue for people at highest risk of acquiring HAV infection or developing serious com infection, if social distancing standards can be maintained.

Should routinely recommended hepatitis A and hepatitis B vaccines continue to be a children?

Routine hepatitis A and hepatitis B vaccination of children should continue to the exten CDC immunization schedules.

Maintaining Childhood Immunizations During COVID-19 Pandemic

The COVID-19 pandemic is changing rapidly and continues to affect communities acros Some of the strategies used to slow the spread of disease in communities include postp urgent elective procedures and using telemedicine instead of face-to-face encounters f

Different strategies are needed to ensure the delivery of newborn care and well-child ca immunizations. Healthcare providers in communities affected by COVID-19 are using st from sick visits . Examples include:

- Scheduling well visits in the morning and sick visits in the afternoon.
- Separating patients spatially, such as by placing patients with sick visits in different a location from patients with well visits.
- Collaborating with providers in the community to identify separate locations for hol

Because of personal, practice, or community circumstances related to COVID-19, some provide well-child care, including immunizations, for all patients in their practice. **If a pr limited well-child visits, healthcare providers are encouraged to prioritize newborn c infants and young children (through 24 months of age) when possible.** CDC is monitc continue to provide guidance.

Should vaccination of HBV-exposed infants continue during the COVID-19 pandemic

Yes. Hepatitis B vaccination of all infants, especially those exposed to hepatitis B virus, s
Advisory Committee on Immunization Practices (ACIP) recommendations.

Labor and Delivery Care

- Identify HBsAg status of all women presenting for delivery.
- If a woman's HBsAg status is positive, HBIG and single antigen hepatitis B vaccine sh
infant within 12 hours of birth.
- If a woman's HBsAg status is unknown, single antigen hepatitis B vaccine should be a
within 12 hours of birth. Administration of HBIG should be determined per ACIP reco
https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm). Infants weighing <2,000 g
the mother's HBsAg status cannot be determined within 12 hours of birth.
- Provide the birth dose of hepatitis B vaccine to all other newborns within 24 hours o
hepatitis B virus transmission from household or other close contacts.

Should management of infants born to HBV-infected women continue during the CO

Yes. Management should continue to prevent mother-to-child transmission of hepatitis

Pediatric Care of HBV-exposed Infants

- Make every effort to ensure HBV-exposed infants complete the hepatitis B vaccine s
recommendations (see https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm). P
component vaccine who are experiencing immunization service disruption should a
as close to the recommended intervals as possible, including series completion at 6
recommendations for post-vaccination serologic testing.
- If post-vaccination serologic testing is delayed beyond 6 months after the hepatitis B
administering a "booster" dose of single antigen hepatitis B vaccine and then orderin
testing (HBsAg & antibody to HBsAg [anti-HBs]) 1-2 months after the "booster" dose.

Should hepatitis A and hepatitis B vaccines continue to be administered to adults at hepatitis B?

Yes. Continue to administer these vaccines if an in-person visit must be scheduled for s clinical preventive service can be delivered during that visit with no additional risk; or ar clinician believe that there is a compelling need to receive the service based on an asse benefit outweighs the risk of exposure to SARS-CoV-2 virus. For more information see D Preventive Services, Including Immunizations.

Patients with Hypertension

Are patients with hypertension at higher risk for severe illness from COVID-19?

Although many patients with severe illness from COVID-19 have underlying hypertensic hypertension is an independent risk factor for severe illness from COVID-19. Hypertens States. Hypertension is more frequent with advancing age and among men, non-Hispar other underlying medical conditions such as obesity, diabetes, and serious heart diseas only underlying medical condition is hypertension are not considered to be at higher ris COVID-19.

Should angiotensin-converting enzyme inhibitors (ACE-Is) or angiotensin receptor b stopped in patients with COVID-19?

No. The American Heart Association, the Heart Failure Society of America, and the Amer recommend continuing ACE-I or ARB medications for all patients already prescribed indications such as heart failure, hypertension, or ischemic heart disease. At this time, a demonstrates no indication of COVID-specific harm from these agents. Several random under way to better answer this important clinical question. Cardiovascular disease pat COVID-19 should be fully evaluated by a healthcare professional before adding or remc changes to their treatment should be based on the latest scientific evidence. Patients w treat chronic conditions and have additional questions should speak to their healthcare management

Waste Management

What do waste management companies need to know about wastewater and sewag healthcare facility or community setting with either a known COVID-19 patient or pe (PUI)?

Waste generated in the care of PUIs or patients with confirmed COVID-19 does not pres for wastewater disinfection in the United States. Coronaviruses are susceptible to the s community and healthcare settings as other viruses, so current disinfection conditions facilities are expected to be sufficient. This includes conditions for practices such as oxi chlorine bleach) and peracetic acid, as well as inactivation using UV irradiation.

Do wastewater and sewage workers need any additional protection when handling healthcare or community setting with either a known COVID-19 patient or PUI?

Wastewater workers should use standard practices including basic hygiene precautions PPE as prescribed for their current work tasks when handling untreated waste. There is employees of wastewater plants need any additional protections in relation to COVID-1

Should medical waste or general waste from healthcare facilities treating PUIs and p COVID-19 be handled any differently or need any additional disinfection?

Medical waste (trash) coming from healthcare facilities treating COVID-2019 patients is coming from facilities without COVID-19 patients. CDC's guidance states that managem utensils, and medical waste should be performed in accordance with routine procedure suggest that facility waste needs any additional disinfection.

More guidance about environmental infection control is available in section 7 of CDC's I and Control Recommendations for Patients with Confirmed COVID-19 or Persons Unde Healthcare Settings.

Additional Resources

- Clinical Care Guidance
- Therapeutic Options for Patient with COVID-19
- Guidance for Pediatric Healthcare Providers
- Disposition of Hospitalized Patients with COVID-19
- Inpatient Obstetric Healthcare Guidance
- Information for Healthcare Providers: COVID-19 and Pregnant Women
- Ending Isolation for Immunocompromised Patients
- Risk Assessment and Public Health Management of Healthcare Personnel with Poter Setting to Patients with Coronavirus Disease (COVID-19)
- Infection Prevention and Control Recommendations for Patients with Suspected or (Disease 2019 (COVID-19) in Healthcare Settings
- Strategies for Optimizing the Supply of N95 Respirators: Conventional Capacity Strat
- Testing Overview for Coronavirus Disease 2019 (COVID-19)
- Healthcare Infection Prevention and Control FAQs
- National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guide

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