

Pregnancy & Covid19

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Assess Patient's Symptoms and Exposures

Symptoms typically include fever $\geq 38^{\circ}\text{C}$ (100.4°F) or one or more of the following:

- Cough
- Difficulty breathing or shortness of breath
- Chills
- Repeated shaking with chills
- Headache
- Sore throat
- New loss of taste or smell
- Unprotected exposure to known COVID-positive individual
- Fatigue
- Muscle or body aches
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

No Positive Answers

Routine Prenatal Care

Any Positive Answers

Recommend testing for SARS-CoV-2 infection*

Conduct Illness Severity Assessment

- Does she have difficulty breathing or shortness of breath?
- Does she have difficulty completing a sentence without gasping for air or needing to stop to catch breath frequently when walking across the room?
- Does patient cough more than 1 teaspoon of blood?
- Does she have new pain or pressure in the chest other than pain with coughing?
- Is she unable to keep liquids down?
- Does she show signs of dehydration such as dizziness when standing?
- Is she less responsive than normal or does she become confused when talking to her?

Any Positive Answers

Elevated Risk

Recommend she immediately seek care in an emergency department or equivalent unit that treats pregnant women. When possible, send patient to a setting where she can be isolated.

Notifying the facility that you are referring a PUI is recommended to minimize the chance of spreading infection to other patients and/or healthcare workers at the facility

Adhere to local infection control practices including personal protective equipment

No Positive Answers

Assess Clinical and Social Risks

- Comorbidities (Hypertension, diabetes, asthma, HIV, chronic heart disease, chronic liver disease, chronic lung disease, chronic kidney disease, blood dyscrasia, and people on immunosuppressive medications)
- Obstetric issues (eg, preterm labor)
- Inability to care for self or arrange follow-up if necessary

Any Positive Answers

Moderate Risk

See patient as soon as possible in an ambulatory setting with resources to determine severity of illness.

When possible, send patient to a setting where she can be isolated. Clinical assessment for respiratory compromise includes physical examination and tests such as pulse oximetry, chest X-ray, or ABG as clinically indicated.

Pregnant women (with abdominal shielding) should not be excluded from chest CT if clinically recommended.

No Positive Answers

Low Risk

- Refer patient for symptomatic care at home including hydration and rest
- Monitor for development of any symptoms above and re-start algorithm if new symptoms present
- Routine obstetric precautions

If no respiratory compromise or complications and able to follow-up with care

If yes to respiratory compromise or complications

Admit patient for further evaluation and treatment. Review hospital or health system guidance on infection control measures to minimize patient and provider exposure

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.¹⁻³ 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

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. Patients may have abnormalities on chest imaging before the onset of symptoms

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%

Reinfection

There are no data concerning the possibility of re-infection 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

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).

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.

Clinical Management and Treatment

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.

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.

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.

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

Based on what we know at this time, **pregnant people might be at an increased risk** for severe illness from COVID-19 compared to non-pregnant people. Additionally, there may be an increased risk of adverse pregnancy outcomes, such as preterm birth, among pregnant people with COVID-19.

Prehospital Considerations

- Pregnant patients with suspected 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 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 suspected¹ or confirmed COVID-19.

During Hospitalization

Pregnant women admitted with suspected 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

A close-up photograph of a hand holding a blue pen, writing the words "Thank you!" in a cursive script on a white, rounded rectangular card. The card is placed on a light-colored surface with a soft, blurred background. The lighting is bright and even, highlighting the texture of the paper and the smooth motion of the pen tip.

Thank you!