

COVID-19: Symptoms, Transmission, and Prevention

Eric S. Starbuck, DrPH, MPH
Advisor, Child Health & Pandemic Preparedness
Save the Children, Fairfield, Connecticut
estarbuck@savechildren.org

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I. Symptoms

Symptoms of COVID-19 include the following:

1. Cough, and/or
2. Fever, and/or
3. Shortness of breath / difficult breathing.

If there is transmission of the virus nearby, or a person may have had contact with COVID-19 cases, then any one or more of the above is a sign that a person may have COVID-19.

In many / most settings, most people who have one or more of the symptoms above will not have COVID-19, because these symptoms overlap with those of many other kinds of respiratory infections and other illnesses.

However, there is no combination of symptoms that is good for identifying people who have COVID-19.

Thus, these symptoms should be considered as helpful for identifying people who may have COVID-19, and thus identifying people who, in the settings in which there is a risk of COVID-19 infection, should be tested for COVID-19, should contact their health provider, and/or should stay home and refrain from travel or work in SC offices, etc.

II. Transmission of COVID-19

Current evidence suggests that COVID-19 and flu are transmitted in much the same ways.

Most cases of pandemic flu are expected to occur during pandemic “waves.” In each community, each pandemic wave (outbreak) is expected to last about 8 to **16** weeks. The pandemic may include 1, 2, or 3 waves over a period of up to approximately 1 to 2 years. The seasonality of the pandemic & pandemic waves cannot be predicted with certainty. We do not yet know the extent to which this will also apply to COVID-19.

With influenza, persons who become ill may be able to transmit infection to others for one-half to one day before the onset of illness (how much of this actually happens remains uncertain). There is now evidence that this can also happen with COVID-19, though current evidence suggests that most COVID-19 transmission is driven by those with mild symptoms, early in illness.

Although the relative contributions of different modes of flu and COVID-19 respiratory transmission are currently unknown, data from observational studies of influenza is generally consistent with **transmission through close exposure (which was redefined for flu in 2007 by the US CDC & OSHA to distances up to 2 meters or 6 feet)**: large respiratory droplets, direct contact, and near-range exposure to aerosols:

Droplet transmission: Large droplets are expelled by coughing, sneezing, and talking, and generally travel through the air no more than 6 feet (2 meters) from the infected person. Transmission via large droplets requires close contact between the source and recipient persons, permitting droplets, which do not remain suspended in the air, to come into direct contact with oral, nasal, or ocular mucosa (though how much transmission happens through the eyes remains uncertain). Special air handling and ventilation systems are not required to prevent droplet transmission.

Direct and indirect contact transmission: Direct contact transmission involves skin-to-skin contact (such as hand-to-hand) between an infected person and a susceptible person. Indirect contact: Influenza viruses can live for 24 to 48 hours on nonporous environmental surfaces and less than 12 hours on porous surfaces, indicating that transmission can occur when hands that touch contaminated surfaces subsequently come into contact with oral, ocular, or nasal mucosa, though this type of transmission appears to be rare.

Airborne transmission (via small-particle aerosols / droplet nuclei): The relative contribution of airborne transmission to influenza outbreaks is uncertain, but is an important issue, because droplet nuclei are smaller in size than large droplets (with implications for the type of masks most likely to be effective), can travel farther, and can remain suspended in air. With flu viruses, airborne transmission may occur at short distances, particularly during medical procedures which may generate aerosols, and in shared air spaces with poor air circulation. (This implies that good air circulation / ventilation may reduce transmission in indoor areas and in other enclosed spaces, such as in vehicles, planes, trains, etc.) There is little evidence of airborne transmission over long distances or prolonged periods of time, and no evidence that influenza transmission can occur through ventilation systems.

Animal-to-Person: As animal-to-person transmission (such as from birds or pigs) is expected to remain a comparatively rare event, the information above all refers to person-to-person transmission.

III. Reducing Transmission & Risk of Infection

(Guidance for Individuals & Households)

The following influenza guidance most likely applies to COVID-19 as well

If a pandemic /COVID-19 vaccine becomes available in your area, we suggest that you get this immunization. If available in your area, we also suggest that you get immunized for seasonal influenza. Though seasonal flu vaccine will not protect you from the pandemic flu strain or COVID-19, it will help protect you from getting several respiratory infections at a similar time and may make diagnosing the cause of respiratory infections somewhat easier.

If COVID-19 may be circulating in your area (likely community transmission):

For All Household Members (with or without respiratory symptoms):

Keep Your Distance (at least 2 meters, or 6 feet) from other people, particularly from people who are coughing or sneezing, to the extent this is feasible. If you are in a high risk group or if the pandemic wave is severe:

- Avoid crowds & groups of people when possible
- Limit your travel
- Avoid crowded public transportation if possible, such as by traveling during off-peak hours
- Work from home, if possible

Wash Your Hands

- Wash hands with warm, soapy water for 20 seconds OR use a hand sanitizer after:
 - Coughing or sneezing,
 - Contact with a respiratory patient or with objects near or used by the patient,
 - Using the bathroom, &
 - Handling garbage or animal waste.

For Those with Any Respiratory Symptoms:

Cover Your Cough & Sneeze

- Cover your mouth & nose with a tissue, & put your tissue in the trash can
- If you do not have a tissue, cough or sneeze into your upper arm, not your hands

Separate the Ill from Other People

- All people with respiratory symptoms should avoid all public activities, & remain at home (or in a health facility) until they have recovered. (This is called “voluntary isolation.”)

- If practical, the ill person should stay in a separate room which most others do not enter. Good ventilation/ airflow in this room (except in cold seasons) may help to somewhat reduce the risk of transmission of the virus.
- Only one caretaker should have contact with the ill, if possible.
- Others should avoid exposures to the ill person, such as sharing toothbrushes, cigarettes, eating utensils, drinks, & linens.
- Use everyday household cleaning products to regularly clean laundry, eating utensils, & household surfaces used by the ill or likely contaminated by their secretions. (However, general disinfection of the environment is not recommended.)
- Those who are ill should wear a medical/ surgical mask (if available, or if not, a scarf) whenever they are in contact with others & if they must leave their home.
- Caretakers of the ill should wear a respirator (if available, or medical/ surgical mask, or a scarf) whenever they are within 2 meters of the ill. (If masks are in short supply, their use by the ill should be prioritized over use by caretakers. General use of masks or particulate respirators in homes or in the community is not recommended.)
- If the outbreak is severe (involving high mortality): The household contacts of ill people should minimize their level of interaction with others outside the home (this is called “voluntary home quarantine”), and isolate themselves at the first sign of any symptoms.

Precautions for Pregnant Women & Others in High Risk Groups

Please see the US CDC website for evolving information on risk groups: www.cdc.gov/

If the Outbreak is Severe (involving high mortality):

Shelter in Place: Even after taking the precautions listed above, some transmission of the virus is still likely, because these measures are only partly effective, & because some transmission is likely from infected people with very mild symptoms or even from those with no symptoms. Risk of infection among household members can be reduced by staying at home & minimizing contact with all other persons, as much as possible. (This is also called “protective sequestration” & “hibernation”.)