Understanding Coronavirus disease 2019 (COVID-19)

Coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person to person. Coronaviruses are a large family of viruses that are common in people and many different species of animals, including camels, cattle, cats, and bats. The virus that causes COVID-19 is a novel coronavirus that was first identified during an investigation into an outbreak in Wuhan, China in late December 2019.

In this guide, we present the latest research on COVID-19. This information reflects the current scientific understanding of this disease, including who is at risk to contract it, how it spreads, and how many cases have been identified in the U.S. *All information in this guide is updated continually to make sure it includes timely information about COVID-19 from the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), the National Institute for Health (NIH), and other public health researchers.*

What are the symptoms of COVID-19?
Patients with COVID-19 have had mild to severe respiratory illness with symptoms of fever, cough and shortness of breath. There can be severe complications for COVID-19 patients, including pneumonia and organ failure, and severe cases can result in death.

Early information out of China, where COVID-19 first started, shows that some people are at higher risk for serious illness from COVID-19, including older adults and people who have serious chronic medical conditions (i.e. heart disease, diabetes, lung disease).

How does COVID-19 spread?
May be updated as more testing and reporting is done
The virus that causes COVID-19 probably emerged from an animal source, but is now spreading from person to person. The virus that causes COVID-19 seems to be spreading easily and sustainably in the community in some affected geographic areas, including China, Italy, Iran, and South Korea.

The virus is thought to spread mainly between people who are in close contact with one another (within about 6 feet) through respiratory droplets produced when an infected person coughs or sneezes. It also may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads.

There is evidence now of *community spread*, where people have been infected with the virus in an area, including some who are not sure how or where they became infected.

Have there been cases of COVID-19 in the U.S.?

Yes. The first case of COVID-19 in the United States was reported on January 21, 2020. Currently, COVID-19 is spreading from person to person in parts of the United States. Risk of infection with COVID-19 is higher for people who are close contacts of someone known to have COVID-19, for example healthcare workers, or household members. Other people at higher risk for infection are those who live in or have recently been in an area with ongoing spread of COVID-19.

The current count of cases of COVID-19 in the United States is available on CDC's webpage. More cases of COVID-19 are likely to be identified in the United States in the coming days, including more instances of community spread. It's likely that at some point, widespread transmission of COVID-19 in the United States will occur.

How is COVID-19 affecting your community? [Local insert]

Most recent infection rate at state and national level to be included based on data from the CDC: https://www.cdc.gov/coronavirus/2019-ncov/summary.html. Additional local information about area outbreaks or at-risk population based on Johns Hopkins dashboard or other reputable population health sources will also be included. As more reliable models from government and health organizations becomes available, the estimates for local potential infection will also be shared.

How does the COVID-19 outbreak compare to a normal flu season?

COVID-19 is sometimes being compared to what happens normally during influenza season. For example, the COVID-19 death toll - roughly 1,400 per month globally - is much lower than the death toll from global influenza - approximately 25,000 per month globally. However, this is not an appropriate comparison for a variety of reasons:

1. We are just in the first two months of the outbreak. We are still learning about COVID-19 and its impacts.
2. COVID-19 is caused by one strain of coronavirus (SARS-CoV-2). Influenza can be caused by one of four basic viruses (A, B, C, D) that all have subtypes, and multiple strains of influenza virus are active in a given flu season.
3. We have vaccines available for certain flu strains, although not everyone gets them. There is currently no vaccine available for this strain of coronavirus.

A closer comparison might be the H1N1 flu pandemic, a new strain of Influenza A that was first detected in the United States in 2009. The CDC estimates that 151,700 - 575,400 people died during the first year of the H1N1 pandemic. Based on current and projected rates of infection for COVID-19, H1N1 deaths exceed what we expect to see from COVID-19.

More information about past pandemics can be found on the CDC website.

How can the spread of COVID-19 be limited?

May be updated as more testing and treatment is conducted.

Someone who is actively sick with COVID-19 can be isolated either in the hospital or at home (depending on how sick they are) until they are better and no longer pose a risk of infecting others. How long

someone is actively sick can vary so the decision on when to release someone from isolation is made on a case-by-case basis in consultation with doctors, infection prevention and control experts, and public health officials and involves considering specifics of each situation including disease severity, illness signs and symptoms, and results of laboratory testing for that patient.

People who have been exposed to COVID-19 can be quarantined. Quarantine means separating a person or group of people who have been exposed to a contagious disease but have not developed symptoms from others who have not been exposed, in order to prevent the possible spread of that disease. Quarantine is usually established for the incubation period of the communicable disease, which is the span of time during which people have developed illness after exposure. For COVID-19, the period of quarantine is 14 days from the last date of exposure, because 14 days is the longest incubation period seen for similar coronaviruses. Someone who has been released from COVID-19 quarantine is not considered a risk for spreading the virus to others because they have not developed illness during the incubation period.

Community-based interventions such as school dismissals, event cancellations, social distancing, and creating employee plans to work remotely can help slow the spread of COVID-19. Decisions about whether to implement these kind of community measures will be made by local and state officials, in consultation with federal officials as appropriate, and based on the scope of the outbreak and the severity of illness. Implementation will require extensive community engagement, with ongoing and transparent public health communications.

What steps should individuals take to prevent the spread of COVID-19?

There is currently no vaccine to prevent coronavirus disease 2019 (COVID-19). The best way to prevent illness is to avoid being exposed to this virus. However, as a reminder, the CDC always recommends everyday preventive actions to help prevent the spread of all respiratory diseases, including COVID-19. These recommended steps include:

- Washing hands often with soap and water for at least 20 seconds, especially if you have been in a public place and after blowing your nose, coughing, or sneezing
    - If soap and water are not readily available, use an alcohol-based hand sanitizer that contains at least 60% alcohol
- Avoiding touching your eyes, nose, and mouth with unwashed hands
- Avoiding close contact with people who are sick
- Putting distance between yourself and other people if COVID-19 is spreading in your community
- Staying home when you are sick
- Covering your mouth and nose with a tissue when you cough or sneeze and throwing used tissues in the trash
- Cleaning and disinfecting frequently touched objects and surfaces daily
- Following CDC's recommendations for using a facemask
    - Facemasks should be used by people who show symptoms of COVID-19 to help prevent the spread of the disease to others. The use of facemasks is also crucial for health workers

and people who are taking care of someone in close settings (at home or in a health care facility).
    - *If you are not sick, you do not need to wear a facemask* unless you are caring for someone who is sick.

Individuals that think they may have COVID-19 should arrange to be tested by a health care provider, Call first to make sure that they can administer a test and that they have the capacity to separate COVID-19 patients from others at the facility.

Additional Information

Additional information from government health organizations or public health researchers regarding either the outbreak, treatment efforts, and private or public sector responses may be shared here as it becomes available or relevant.

What can government and other organizations do in response to COVID-19?

Right now, we are still in the early stages in the COVID-19 outbreak and the public health measures being taken now are incredibly important in determining the spread and effects of this disease. The rate of infection and illness will be greatly determined by how *quickly* and *fully* all of us— national and state governments, health organizations, businesses and individuals—take actions called for by our individual and local situations.

Below are a range of different policy actions for how we might address COVID-19 as well as the trade-offs that they require. These options do not reflect all possible ways to confront COVID-19. But they come from several different perspectives and can serve as a starting point for thinking about what should be done to address this pressing public health challenge.

Actions described below may take place over different time periods--restrictions may be in place in some areas for a short period of time (days or a week) or longer if necessary (weeks or more), depending on the severity of the outbreak in certain communities. *Time periods/ranges may be inserted or updated as outbreak evolves and further information is available from public health officials.*

Action	**Tradeoff**
Provide immediate funding to set up emergency testing centers and intensive care units. Take emergency steps to make sure medications and other essentials that may be sourced from China or other affected regions can be replaced.	Making perhaps hasty additions to our health care capacity will be difficult to do efficiently and will be expensive.

Restrict all international commercial air travel arriving to the US and departing from the US for all countries that the CDC identifies as having sustained and ongoing community transmission of COVID-19. Domestically, test passengers for fever before letting them fly. Restrict domestic air travel arriving to or departing from cities with high rates of infection. Essential public health and government travel would be exempted.	Airlines will suffer dramatically, as will the productivity of international businesses that require a lot of travel. There are likely to be economic consequences. Important medical or scientific conferences and meetings that might help us understand and respond to COVID-19 will also have to be postponed.
Institute mandatory at-home quarantine for any individual who tests positive for COVID-19, has temperature above 99.5 degrees, or anyone who has come into contact with a person with COVID-19.	Some people who are not sick with this virus, but just have a cold or flu, will also end up being quarantined unnecessarily.
Institute mandatory quarantines for entire localities that experience an outbreak of infections, enforced by police or national guard if necessary.	This will cause massive disruption to entire neighborhoods, cities, or even states, even though many residents are not ill.
Close all public and private schools, places of worship, sports arenas, theatres and other large public gathering spaces.	Many parents in the U.S. depend on schools for both childcare, and often, two meals a day for their children. Students would fall behind on their education, and final exams and/or entrance exams for next year could be affected.
Encourage employers to allow flexibility for workers with children who might be affected by school closures. Make teleworking available whenever possible.	Businesses of all sizes are likely to see significant declines in productivity. Small businesses, lacking both staff and customers, might be more likely to feel the effects.
Close all but essential businesses who cannot ensure 3 feet of space between patrons.	This will spread the economic impact of the outbreak even further, and could be a death knell for many small businesses. Millions of workers would be affected.
Provide wage subsidies, temporary unemployment benefits or paid sick leave to workers directly affected by COVID-19, including infected employees as well as those	This could cost billions of dollars and be difficult to implement.

whose jobs are suspended due to economic effects of the disease.	
Provide tax benefits for companies affected by the outbreak.	The government will have to bail out many companies, many of whom have recently banked record profits.
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Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/2019-ncov-factsheet.pdf
https://www.cdc.gov/coronavirus/2019-ncov/faq.html
https://www.cdc.gov/coronavirus/2019-ncov/about/prevention.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fabout%2Fprevention-treatment.html