

Understanding the Coronavirus Epidemic

Is this hysteria? Isn't it like the flu?
What should I be doing right now?
Where should I look for info?

This coronavirus is not really that different from "flu" in many ways. It has about the same mortality rate as influenza viruses, we think. Most of the deaths have been in people over 60 and people with underlying illnesses, but it may be unpredictable as to what younger adults get very seriously ill. Thankfully, children seem to be handling it pretty well.

The main difference is that it is a novel virus, a virus that no one on earth has ever been exposed to before. So, there is no immunity or partial immunity from other years. That makes it potentially worse than a pandemic influenza year, where there are always some generations that at least have partial immunity. Thus, pretty much everyone will get sick if they are exposed. Maybe not deadly sick, but sick.

When California had its first very sick patients who did not travel and did not have direct contact with a traveler, this suggested they were exposed to unknown sick people in the community. We do not know exactly how many people in the US or how many people in the Bay Area are infected. Judging by what we know of the epidemiology of the illness so far, it is likely that there are already many thousands of infected individuals in the US.

We think every sick person gets another 2-3 people sick - usually people in their household or close contacts. We think people can get sick up to 2 weeks after exposure and infection and that people can spread the virus even when they are not yet having symptoms. Even after their own illness resolves, people can still spread a respiratory virus for perhaps 1 week or so.

Without treatment or a vaccine, likely more than 50% of the US population will be infected over the next 12-18 months. When enough people have been infected and become immune, The number of deaths depends on how many people get infected, and the worst case scenario states that there will be more than 1.5 Million. See the following article if you want to see best and worst case scenarios and mitigation measures from the highly respected former CDC director Tom Frieden, MD MPH: <https://www.thinkglobalhealth.org/article/could-coronavirus-kill-million-americans>

All of this illness will put a great strain on our already strained health care system, especially primary care, urgent care, ERs and ICUs. Our clinics/hospitals do not have the ability to see all people that will likely get sick, and lab samples require a doctor/nurse visit. The leading clinical lab firms, Quest and Labcorp have capacity to process 1000 kits per day for the entire nation. Thus, the US healthcare system cannot run tests everyone that will get sick. We need to reserve human resources for those who need the care and the testing most.

We also need to limit the risk of exposing health care workers and high-risk patients to people infected with the virus. Thus, people should call before coming into a clinic. If you are low risk in terms of your age and medical conditions, and/or you are not having severe symptoms, you will likely be told to stay at home and monitor for severe symptoms, coming in only if you develop shortness of breath or difficulty breathing. People that are very ill and very high risk due to age or chronic medical conditions will likely be sent directly to the hospital.

Who is considered high risk? Who needs medical care and lab testing most? People who are above age 60 and/or have chronic medical conditions, especially heart or lung disease. People who live with someone that meets that description. People who have traveled to a high-risk place or have had a known exposure to someone with Coronavirus.

When people do get sick, most do not get critically ill. When they do get very ill, it is usually in the second week of illness, often >6 days from first symptom onset. The severe illness that is most concerning is an infection and inflammatory process down in the lung tissue, which usually means developing shortness of breath or having difficulty breathing. This is what patients are asked to monitor for and that clinicians are looking for when they measure oxygen saturation and listen to lungs.

The only way to prevent spread is through rigorous and systematic hygiene and through “social distancing”. Cancelling gatherings, closing schools and staying at home does limit spread. Our containment efforts may not reduce the number of people who will ultimately get infected, but they will SLOW the rate or “flatten the curve” of the outbreak. This buys time for drug treatment and vaccine development. It also helps with slowing the demand on our already strained healthcare system.

In the meantime, caring for sick friends/family, closures of schools and businesses, and home isolation will be hard on a lot of people. Many people that get infected will be asked to stay home, and they may have to be isolated for 2 weeks or more. So, trying to prepare and think about childcare and eldercare and the care of the sick is good to do ahead of time.

Ultimately, the main way to PREVENT getting sick from any kind of virus is to minimize close contact with people and to perform extraordinary hygiene measures:

- high risk individuals should stay at home and limit close contact with others as much as possible
- maintain a distance of at least 6-8 feet from someone who is coughing or has symptoms of respiratory illness; you can wear a mask, but that mask may not offer all that much protection, and the mask can also become contaminated with viral particles
- improve your hand-washing technique, washing all surfaces of hands and fingers for at least 20 seconds; make sure hand sanitizer (at least 60% alcohol) is always available, as it works very well on this virus
- wash or sanitize your hands before you eat and before touching your face
- wash or sanitize your hands before touching your personal objects/surfaces, like your cell phone and before entering your car/house
- use sanitizing wipes on those surfaces that most commonly transmit viral illnesses: objects like your cell phone, doorknobs, light switches, handles of sick faucets and toilets, and counters

For information, I would recommend the websites and press releases coming directly from our academic medical and public health institutions like Johns Hopkins and UCSF and our public health agencies: CDC (national) & your local city/county health dept - San Francisco, Berkeley City, Alameda County, Contra Costa County, Santa Clara County, etc.

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Primary Care and Urgent Care - Family Medicine, Preventive Medicine & Public Health