In recent weeks, the news has been dominated with stories about coronavirus. The virus, now called COVID-19, first sickened people in Wuhan, China, in late 2019. Since then, many thousands of people in that region, as well as other regions, have fallen ill, and some have died.

**What is coronavirus?**
Coronaviruses are a family of viruses that contain RNA (instead of DNA, like people have). The viruses are circular in shape with spikes on the surface, which appear like a halo when the virus is viewed with a microscope. This halo of spikes is what led scientists to name these “coronaviruses.”

Coronaviruses were first discovered in the 1930s, and as with other families of viruses, some coronaviruses are more worrisome than others. The earliest discovered coronaviruses infected farm animals, causing lung infections in chickens and digestive illness in pigs. Later, scientists found a couple of types that infected people, causing symptoms of the common cold.

This family of viruses garnered more attention in the early 2000s with the epidemic known as severe acute respiratory syndrome, or SARS. The SARS virus infected civet cats and then gained the ability to infect people, leading to the epidemic. In 2012, a similar occurrence led to the Middle East respiratory syndrome, or MERS, epidemic. In this situation a coronavirus that infected camels gained the ability to infect people. Currently, scientists think that COVID-19 also originated in an animal and then infected people, but, right now, it remains uncertain as to which animal.

**Why is COVID-19 such a big deal?**
When a virus that normally infects animals gains the ability to infect people, two things can happen:

1. **Animal-to-person transmission only** — In some cases, although people in close contact with animals that carry the virus get ill, the virus cannot easily spread from one person to another. In these situations, public health teams and animal scientists will work to decrease the chance for individuals to get infected. Because fewer people are likely to be in close enough contact with infected animals, controlling this situation is easier to accomplish and, therefore, less concerning than what happens in the second scenario. However, scientists do need to monitor these situations because at any point, the virus can change again and gain the ability to spread among people.

2. **Animal-to-person and person-to-person transmission** — In this case, not only can the virus spread from infected animals to people, but it also can spread from one person to another. This situation is much more urgent for two reasons. First, it is significantly more difficult to stop the spread of infection between people. Second, because this is a new virus, virtually everyone in the world is susceptible. As a result, it has the capacity to cause a worldwide epidemic.

The second of these scenarios is what is currently occurring with COVID-19.

**What are scientists and public health officials doing about it?**
When a new virus emerges, scientists and public health officials have a long “to do” list that includes:

- **Trying to learn about the virus and the disease** — This includes understanding who the virus infects; how it spreads; how long people are ill; how soon after exposure people show signs of illness; whether they can spread the illness when they are infected but don’t have symptoms; what symptoms they have; what complications may occur; how long people are sick; how often the disease is fatal; and more.

- **Preventing widespread disease** — When the virus is new and virtually everyone can get ill, it is important to try to contain the spread of the virus. This is what you have been seeing in news reports related to COVID-19. This is a crucial component of the public health response, and in order to do their job effectively, public health officials need to ensure that people are aware of the risk. However, these efforts can also inadvertently elevate societal anxiety disproportionately to the risk. (See “What should I worry about?” below.)

- **Determining treatments** — Healthcare providers can treat symptoms of viruses, and public health officials and scientists can work with them to evaluate whether existing treatments are effective, but this takes time. Often, even though the virus is new, these teams of experts can use information learned from similar viruses as a good place to start. Currently, teams around the world are doing this for COVID-19.

- **Developing vaccines** — Likewise, if vaccines exist for similar viruses, scientists can try those methods of vaccine development for the new virus, but any new vaccine needs to be carefully tested. As a result, prevention through vaccination may or may not be an option in the period right after a new virus develops. For example, researchers were able to develop an effective vaccine against the 2009 H1N1 influenza virus because influenza vaccines were already being produced; they just needed to apply the technology to the new virus. However, in the cases of both SARS and MERS, vaccine development was not able to offer an effective protective measure. For COVID-19, researchers are relying on understanding gained from both SARS and MERS, since they are also coronaviruses.
We have watched this scenario of “people versus novel virus” play out many times in history, such as during the 1918 influenza pandemic, during the 1980s with the AIDS epidemic, and more recently, related to SARS (2003), H1N1 influenza (2009) and MERS (2012). The good news is that public health officials and scientists who work with infectious diseases have learned from each of these events. The bad news is that new viruses are unknown and, therefore, less predictable.

What should I worry about?
In situations such as the current COVID-19 epidemic, it is important not to “FORGET” these points:

F – Follow advice of officials — Officials are continuing to monitor the spread of COVID-19, and as necessary, they are adjusting travel recommendations and protective health practices. The best approach is to listen to this advice since they have the latest information available. Check the latest CDC guidance: [https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html](https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html).

O – Observe the big picture — While tens or hundreds of thousands of cases of COVID-19 have occurred, only a few thousand people have died. While this sounds scary, let’s consider the big picture. Public health officials have estimated that less than 3% of those infected have died. To put this in context in the U.S., between the beginning of December 2019 and the end of January 2020, more than 28,000 people have died from influenza and pneumonia. This represents almost 7% of the total deaths that occurred in the U.S. during this two-month period. So, the big picture in the current situation is that you, or a family member, is significantly more likely to be exposed to, get sick with, and, possibly, die from influenza than from coronavirus.

R – Remain calm — It is completely understandable for people to be upset and worry about coronavirus, especially when hearing about it regularly, but it is important to manage emotions. This is especially true for parents of children old enough to understand the news. If you are upset, your children are likely to sense that and be upset too. Situations like this offer “teachable moments” in which we can discuss the situation with our children in an age-appropriate way, reassure them that adults are monitoring the situation to keep them safe, and remind them about the importance of good preventive measures, such as handwashing, covering coughs, and getting vaccinated when vaccines are available.

G – Get reliable information — Misinformation, and even scams, are rampant. So much so, in fact, that the World Health Organization (WHO) had to post a scam alert on their website ([https://www.who.int/about/communications/cyber-security](https://www.who.int/about/communications/cyber-security)). Don’t just retweet or repost if you are not sure of the source. Don’t rely solely on social media or online news feeds to get information. Go to reliable sources, like the WHO ([https://www.who.int/emergencies/diseases/novel-coronavirus-2019](https://www.who.int/emergencies/diseases/novel-coronavirus-2019)) or the Centers for Disease Control and Prevention (CDC) ([https://www.cdc.gov/coronavirus/2019-ncov/index.html](https://www.cdc.gov/coronavirus/2019-ncov/index.html)) to get answers to your questions. Both have special website sections they are keeping updated with information.

E – Expect information to change — Public health officials, scientists and healthcare providers are learning as they go, so new information should be expected, not viewed as poor communication. Certainly, there may be specific situations or reports that, in retrospect, people will feel could have been handled better, but understand that these experts are all doing the best they can under the circumstances.

T – Take preventive health measures — Even though COVID-19 has not become widespread in the U.S. at this point, it could. And we are in the midst of cold and flu season, so preventive health measures, like handwashing, covering coughs, and staying home when ill are all good practices to follow, and to reinforce with children.

**Subscribe to our newsletter**
If you’re interested in receiving our free email newsletter, visit our website: [www.vaccine.chop.edu/parents](http://www.vaccine.chop.edu/parents) to sign up. If you have a question about vaccines, visit the Vaccine Education Center website: [www.vaccine.chop.edu](http://www.vaccine.chop.edu).

**Send us your comments**
If you have any comments about this newsletter or suggestions about how we can make our program more helpful, please send them to [contactPACK@email.chop.edu](mailto:contactPACK@email.chop.edu).