

## COVID-19 Q&A #2 with Dr. Auwaerter | March 27, 2020

As GOLD Supporters, your health and peace of mind are incredibly important to us here at Healthnetwork Foundation. Our president, Megan Frankel, took your COVID-19 questions to Paul Auwaerter, MBA, MD, Clinical Director for the Division of Infectious Diseases at Johns Hopkins and one of Healthnetwork Foundation's Service Excellence Award recipients.

An overview of the topics and questions is below, and Dr. Auwaerter's responses follow.

If you missed the first Q&A we did with Dr. Auwaerter, you can access it at [healthnetworkfoundation.org/our-news](https://healthnetworkfoundation.org/our-news).

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*Please note this discussion is based on information that is known as of Mar 27, 2020.*

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## HOW BAD IS IT?

### Healthnetwork Supporter Question:

Has the virus shown any early signs of slowing down in the U.S? Are we are making limited gains?

### Dr. Auwaerter:

I think everyone knows the number of cases confirmed for COVID-19 is now the greatest in the United States, so we've jumped ahead of any other country. There may be some regions that were initially affected such as Seattle where there may be some plateauing, but I think it's too early to tell. Probably mid-April will be among the peak activities in states that at least have gone about to provide social distancing and more stringent stay-at-home orders. Other states have not been quite as rigorous, and so we're going to probably have a range of situations in the country, I expect, over the Spring.

### Healthnetwork Supporter Question:

Even though this virus has no known cure, it seems to still be less lethal than the seasonal flu that is going around the world. Daily auto accidents and gun deaths are each still killing more Americans than the virus. Our state has a stay-at-home mandate, which we are doing, yet I think this is a complete overkill. What am I missing?

### Dr. Auwaerter:

I would start off by at least questioning the premise that the COVID-19 is less lethal than seasonal influenza. There have been fewer deaths than usually attributed to influenza every year. What I think public health officials and politicians and infectious diseases physicians like myself are saying is, we don't want the numbers to grow far beyond seasonal influenza.

The virus, so far, in different countries does seem to have some differences in terms of the mortality rates. China and Italy are quite high. In the United States we're not quite sure, but it's not low. The best estimates so far are that this SARS coronavirus 2, the novel coronavirus, is anywhere from 6 to 12 times more lethal than seasonal influenza which has an estimated death rate of about 1 in 1000 people.

So, the concern is if the virus becomes widespread all at once that it might overwhelm our health facilities. And, if there is an inability for health facilities to take care of patients, or health care workers are ill themselves and can no longer take care of people, there could be breakdowns in some social order in cities, especially if other frontline providers are infected. So, that's the whole concept behind flattening the curve.

I want to make it very clear that although seasonal influenza on average does cause more deaths, the concern is—*What this will become if there were completely unchecked maneuvers because you have a population that is not immune at all to this virus?* Neil Ferguson at Imperial College had estimated 2.2 million deaths if we do nothing in the United States, which is why I think this prompted a call to action to try to do the only thing we can, and that is enforce social distancing.

## HOW THE VIRUS BEHAVES

### Healthnetwork Supporter Question:

What do we know about the root causes of the virus? (Are people getting it from restaurants, airlines flights, family members, out in public, public rest rooms, grocery stores?)

### Dr. Auwaerter:

This is a very successful virus, which means people can have minimal symptoms and potentially pass this on. People that may not appear very ill yet have a cough that they think is a routine cough or people who have a moderate viral illness but think it's routine.

Some of the areas that have been most affected by this are, of course, mass gatherings. Churches, in particular, where, for example, one infected person has gone on to cause infections in at least 35 other people in South Korea.

I view this as a game of numbers. You can't really tell who is infected all the time; so therefore, it's best to try to reduce the number of people you see and the number of interactions with your environment where virus could potentially remain viable on certain surfaces such as metal and plastics.

There's not really one key situation that you can avoid, but that is why there was first closure of schools and restaurants, and then nonessential businesses where many people group and are capable of spreading the virus without knowing it.

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It's easier to identify a virus such as smallpox, which was eradicated in the United States, because nearly everyone gets ill and has a rash, so you know who to stay away from. That's not the case with this virus.

## Healthnetwork Supporter Question:

Is there any possible harm done by slowing the disease down versus letting it run the natural course? Does the disease mutate, grow stronger, or more resilient if you slow it down versus the disease naturally burning out?

### Dr. Auwaerter:

That is a very insightful question, and we really don't know. This virus can incorporate mutations rather easily. It's an RNA virus which depends on a certain protein called an RNA polymerase that sort of makes new genetic material to make new viruses. The fidelity of that protein is not as good as it is for other viruses that are DNA viruses. So, it tends to incorporate new mutations rather easily.

This virus seems to live in-between the spectrum of coronaviruses. There are four coronaviruses that mainly are not causing serious illness, and they've been around for decades as far as we know and frequently infect children. Then we have SARS and MERS-CoV, the two more lethal coronaviruses, which generally you can identify because people are sicker and have a high mortality rate.

Actually, if it were to mutate towards one of the four regular viruses and become incorporated in our environment and live on for decades, that's a very successful virus. It's been established among the human populations; it doesn't cause serious illness. Now, whether it'll mutate that way, we don't know. It may be stable enough to continue to act as it does.

These are things that we're trying to categorize and trying to follow by sequencing the virus to understand how the strain changes, if at all, and then try to see what kind of health problems people have when they're infected with a given strain—we're calling them mutations—but at least with genetic changes compared to some of the parent virus that was first described back in January.

## Healthnetwork Supporter Question:

To what extent is the higher death rate among older individuals strictly age related versus age coupled with other medical problems related? In other words, do we know the death rate for an otherwise healthy 80-year old versus an 80-year old with underlying medical conditions?

### Dr. Auwaerter:

Age alone does seem to be a risk factor, but it is also true that if you have what we call co-morbidities—additional problems such as heart failure, diabetes, emphysema, for example—those are quite additive. It's not as though an 80-year-old who's healthy is the same as a 30-year-old. But to really refine the risk, we don't yet have the studies to truly understand the magnitude of just age alone because there hasn't been a sufficient study yet to separate out the co-morbidities and figure out what the risks are for someone in excellent health who's 80, for example.

## Healthnetwork Supporter Question:

Is there any reliable research on the genetic susceptibility to this disease that would explain why Italy has been so hard hit despite their lockdown or why men tend to become more gravely ill with COVID-19 than women?

### Dr. Auwaerter:

Well, this has been hypothesized. As I have mentioned, there does seem to be some variability in mortality rates in countries. Some have said that some of this is just due to the steep rate of curve, the intensity of infection, and whether there's crowding, for example. So, it's unclear yet if there is genetic predisposition. People are looking at the so-called ACE-2 protein, which is on many cells, such as the lungs, the kidneys and the gut, and is a receptor for the virus. Others are examining how certain people might react immunologically when they're infected.

It's too early to tell, but this is something that will be explored as we try to understand why this virus makes some people quite ill or causes a fatality, versus those that are not having problems at all or minimally so. You know, children, in particular, under 10 seem to be very rarely suffering from severe infection.

## Healthnetwork Supporter Question:

What do you make of the speculation about blood type, that perhaps people with blood type A are more susceptible?

### Dr. Auwaerter:

There's some preliminary evidence suggesting that people with A blood type may be more prone to health problems with the virus versus O blood types. In these early days of trying to gather knowledge, there's lots of exploratory information that really needs to be confirmed repeatedly before I would truly think of it as a potential risk factor. But as I mentioned with the example of children... I mean, you would think that genetic susceptibilities would be similar in an 8-year-old and an 80-year-old in the same family in Northern Italy, so it's clearly not just genetics.

There may be aspects that are genetic in the sense of how your immune system might handle an infection as we get older. There could be so many other explanations including whether people have been previously exposed to one of the cousin viruses and if that plays a role or not. There's a lot we need to learn.

## Healthnetwork Supporter Question:

With the high incidence of people who test positive for the virus that don't develop symptoms—is that due to natural immunity or prior exposure? It sounds like based on your last response, it's just too soon to tell.

### Dr. Auwaerter:

It is too soon. What we know from coronaviruses generally is that if you're infected, the production of antibodies tends not to be long-lived. It's not like measles virus. Antibodies that are produced that might be protective are around for a few years, sometimes longer, and coronaviruses are very common causes of respiratory illness in children. So, maybe there is some cross-protection and children have those antibodies, but we lose them as we get older and older. That's one particular hypothesis. But you know, influenza is another one where we know older people are much more prone to serious illness than school-age children. So, that's clearly not just because younger people have been exposed. Older people have been exposed to lots of influenza. So again, there is much to learn.

## Healthnetwork Supporter Question:

Are people with very low platelets considered to be at higher risk for severity of COVID-19 if they're exposed to it?

## Dr. Auwaerter:

Platelets are little fragments that help form clots. I have not heard that.

## Healthnetwork Supporter Question:

Does the medical community know yet how many days after a person tests positive for COVID-19 that they are contagious?

## Dr. Auwaerter:

We have some semblance of information. For average people, the sense is if you've had symptoms for at least seven days—so you have to have had at least seven days from the onset of symptoms—and you are free of any cough, fever, or other respiratory complaints and not using any medications like Tylenol or a cough suppressant, that you're probably not contagious at this time. The exception would be someone that has a suppressed immune system or very young children because they tend to shed virus for a longer period of time. But, again, details are not exactly clear how long people might shed in some of these more specific populations.

## IMMUNITY

## Healthnetwork Supporter Question:

Can you explain what is meant by "herd immunity" as is now reported in Wuhan?

## Dr. Auwaerter:

Herd immunity—which could be gained from natural infection or through immunizations—reflects a sufficient population who has protective antibodies or immunity that prevents the virus from being passed from one to another. The measles virus is the one that is most looked at and if the percent of people that have immunity falls in studies usually below 90%, then that population begins to be at risk for having the virus spread amongst the community, and that's what we've seen in areas that have had lower immunization rates against measles virus in the past cases of measles outbreaks.

This is a completely new virus for which no one on the planet is thought to have immunity naturally because it probably had always lived in animals before it jumped to humans. In this case, most of the population's at risk. It takes a period of many months or longer for sufficient numbers of people to likely gain immunity to help reduce it by that mechanism. Modelers have tried to figure this out, but we really don't know yet if there's a seasonality dynamic to this virus.

## Healthnetwork Supporter Question:

Have we learned anything more about acquired immunity? If someone has been diagnosed with COVID-19 and has recovered, are they immune to getting it a second time?

## Dr. Auwaerter:

Some preliminary data from China would suggest, after 14 days after onset of illness, people do develop antibodies that are produced sufficiently enough so that they're protected from reinfection. Now, how long those antibodies hang around, we're not sure. But looking at other coronaviruses, many times those viral antibodies are only around insufficient numbers for protection for one, two, three years. This is this something that I think we'll only learn over time.

## Healthnetwork President Megan Frankel:

I know in some countries, they've gotten past the initial surge, and may be loosening some of their quarantine restrictions, and now may be experiencing an uptick again. That's been discussed as potentially happening here in the U.S. It's not necessarily the concern of people getting it a second time; it's just the concern that the virus may die off a little bit, but then come back again later. It seems like that's become a little bit more certain than perhaps we initially thought. Is that your take as well?

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**Dr. Auwaerter:**

Yes, I think that's true. We'll need to watch carefully what happens now in China as there is a relaxation of what I would call strict measures. Also, in Japan which really seems to be returning rather rapidly after only a relatively small amount of COVID-19 infections described. So, now, what we don't know is, if everyone returns back to completely normal, no change in behavior, I would say there would be a high likelihood of a second wave that would be quite considerable unless it's a seasonal virus. However, if we do relax the very strict measures and the virus does die down let's say sometime by May or June, and then we do some relaxation, businesses open, but we maintain social distancing, we wash our hands, we wipe down our shopping carts and so on and so forth, but people don't go to ball parks and other mass gatherings, but we relax it enough so, people get back to work and so on, it's unclear if that would be effective enough to prevent a second wave to any significant degree. This is what a lot of people are struggling to know, but we'll have some signal, I believe, from China and Japan in the next four to six weeks.

## PROTECTION WHILE STAYING AT HOME AND PRACTICING SOCIAL DISTANCING

**Healthnetwork Supporter Question:**

We all know about human transmission, but how concerned do we need to be about transmission from everyday things we touch—handling mail, newspapers, Amazon packages, take-out food containers, garbage receptacles, or even items from store shelves?

**Dr. Auwaerter:**

My sense is that the possibility of acquiring virus from those physical interactions is very low. It's certainly lower than if you were to go to a supermarket, for example. But that said, it's not impossible that it might happen. My usual advice is if you're handling things that haven't been outside for a few days and so on, you should just really be very careful to wash your hands or wear gloves and don't touch your face and these sorts of standard recommendations.

You know, the virus under optimal conditions might live for up to 12 hours on cardboard. It's not as though virus would survive to be still infectious if, for example, someone who is infected handled your box three days earlier.

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I think that as long as you take care, it is very unlikely to acquire virus from that. Not impossible, but that's why you should wash your hands or wear gloves while you're opening packages and so on.

### Healthnetwork Supporter Question:

At the grocery store, are there any other recommendations other than keeping a six-foot distance from others and wiping shopping cart handles? I see other shoppers wearing masks and gloves. Is this unnecessary or good for extra protection?

### Dr. Auwaerter:

The surgical mask question remains a real question mark as to whether that's really essential if you're not standing close to people and maintaining social distancing. However, surgical masks won't filter out virus to a high degree, but it does seem like N95 masks have generally worked or have been necessary to prevent spread of other coronaviruses like SARS or MERS-CoV. I think people feel better wearing a mask. Certainly, if you're coughing, please wear a mask because that's very helpful to prevent potential spread. But, the other factors you mentioned, the hand-washing, wiping down the cart, you know, before you grab the handle—these sorts of things probably are more useful.

### Healthnetwork Supporter Question:

Can we assume cooked food is safer than uncooked foods such as salads?

### Dr. Auwaerter:

Cooked food, I would say, is completely safe. Viruses don't like heat. Raw foods potentially might transmit. But again, if they've been in the refrigerator for a while and you've rinsed them and so forth, again, I think there's an extraordinarily low risk of acquiring infection from eating green leafy vegetables, for example.

### Healthnetwork Supporter Question:

What about microwaving? Would that kill the virus if one was present?

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**Dr. Auwaerter:**

If you reach it to a sufficient heat, yes.

**Healthnetwork Supporter Question:**

Is there a risk of shoes passing around virus?

**Dr. Auwaerter:**

I think many people have seen photographs from January in China where disinfectant was sprayed on sidewalks and on floors of stores and so on. As far as we can tell, this is not a means of transmitting virus. You don't need to wear booties or disinfect flooring. I understand the concerns that droplets do fall to the ground, but typically, just the normal back and forth and walking is not a way that you'll acquire the virus, as long as you don't lick your sole.

## CLEANING & SANITIZING

**Healthnetwork Supporter Question:**

With so few sanitizing wipes available, how many times can a Clorox-type wipe be used on different surfaces and in what manner?

**Dr. Auwaerter:**

I think as long as the wipe is not caked up with huge amounts of dust and dirt and remains moist, it should still be effective.

**Healthnetwork Supporter Question:**

If we have to resort to making our own wipes at home, is putting bleach or disinfectant spray on a napkin sufficient?

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Dr. Auwaerter:

Bleach will render the virus ineffective. So will alcohol greater than 65 percent. Although many of these substances are in short supply at the moment.

## TRAVEL

Healthnetwork President Megan Frankel:

We have several supporters who winter in Florida and are now wondering if they should consider traveling either via plane or car back to their homes up north. Is it safer to risk traveling up north to be in a more spread out location or should they stay hunkered down where they're at?

Dr. Auwaerter:

Probably staying where you are poses the least risk for acquiring the viral infection. And then, it's sorting through if you feel you must travel, in what way are you least exposed to interactions and environments where you might contract the virus? Traveling by airline right now, while the flights might not be very populated, it's probably still more exposure than traveling by private car, for example. But if it's a long trip and you have to stay in a hotel... You know, there are lots of things that you just can imagine that fit in here that are just unknowns. I think the general sense is that car travel has less opportunity to acquire the virus than by some kind of mass transportation.

## SIGNS AND SYMPTOMS, YOU MIGHT HAVE COVID-19

Healthnetwork Supporter Question:

Do we understand the typical timeline of the typical symptoms? Recognizing that they'll vary based on the individual, but is there somewhat of a progression of symptoms?

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## Dr. Auwaerter:

The short answer is no. Symptoms can be very similar to other respiratory viral infections. Here's what we do know about COVID-19 so far:

- From the time you acquire the virus, it typically takes five to six days incubation until you have the onset of symptoms.
- If people develop symptoms, the first symptoms tend to be fever that can be quite high, like the flu. It could include a dry cough and then flu-like symptoms, muscle aches, headache, and so on.
- Occasionally, some people seem to have gastrointestinal symptoms first before they develop respiratory symptoms.
- Once symptoms develop, people—if they become more ill—tend to do so 7 to 10 days after the onset of the first symptom, on average.
- There is definitely variability and that if people survive, typically by 14 days after onset of symptoms, there's improvement if someone had severe COVID-19 disease.

We'll see what our experience here is in the United States. You know, if genetics have some role, we're a much more heterogeneous society than perhaps in China and other countries, so you know, these are aspects that we're not completely sure whether what happens here in the United States would exactly precisely mimic the experience in China.

## MEDICATION & TESTING

### Healthnetwork Supporter Question:

If you have high blood pressure, but take medication (Lisinopril, for example) that manages it to a normal level, is it still considered an underlying condition that would put you more at risk should an infection with the virus occur?

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## Dr. Auwaerter:

Some early reports suggested hypertension is a risk factor. I think that's a tenuous association, so we'll see if it's borne out. But I think hypertension alone is not likely to be a risk factor that's independent of age. And whether you have good control or imperfect control of your blood pressure, I don't see anything that would suggest that's a variable in this.

## Healthnetwork Supporter Question:

There's been so much mixed news about Acetaminophen or Tylenol vs. Advil. Can you shed some light on this?

## Dr. Auwaerter:

There is a lot of information on social media and the internet, but I don't believe there's any compelling evidence that any use or nonuse of certain medications are beneficial. Generally, there is always a sense that a fever helps combat virus because as the body heats up, a virus is less likely to replicate as fast. Sometimes though, people are very uncomfortable with experiencing extraordinarily high fevers, and therefore, taking medications to lower the fever is prudent. But I don't believe, despite all the internet information, that there is anything that truly is evidence based to give guidance at this time. So, I would just advise members to do what your physicians might tell you if you have questions or concerns along those lines.

## Healthnetwork Supporter Question:

There's been a lot in the news about the combined use of hydroxychloroquine and the antibiotic Azithromycin, and a lot of hope associated with that being an effective therapeutic treatment. Have you seen any data suggesting that that is, in fact, effective or any other therapeutics that show promise right now?

## Dr. Auwaerter:

To date, I don't believe I've seen any sufficient evidence to say we have an effective treatment for infection. What we do know, at least for severely ill patients who got an HIV medication called KALETRA, is that did not work. That's the only robust information we have so far.

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Hydroxychloroquine and azithromycin were studied in France in a small study of 36 patients. It was what we call a non-controlled study—and I believe there were a lot of methodological problems with this study—and that suggested that the use of hydroxychloroquine led to reduced viral shedding. There was no information that said people did better. And then, the combination with azithromycin was based on analysis of only six patients.

So unfortunately, I think when everyone's looking for something to try to help, which is quite understandable, these studies, which would have never passed muster in normal circumstances, have been latched on to. But I think this will clearly require a large study to see if these drugs truly have an effect on the virus. Neither of these medications have ever been shown to have any effect on the virus when studied in the past. So, why it would work now? I suppose it is possible, but I think unlikely.

## Healthnetwork Supporter Question:

There's a lot of talk now about antibody tests and understanding who has developed antibodies towards COVID-19, and potentially using plasma as a treatment for those that are affected and need treatment. Can you share any information about that approach?

## Dr. Auwaerter:

The Food and Drug Administration has loosened requirements for COVID-19 tests across the country. So there have been suddenly a lot of companies offering so-called serology or antibody-based tests. I would tell your members to be highly cautious of tests and only have it performed at a high-quality laboratory, perhaps at an academic medical center or at Quest or LabCorp or one of the established commercial labs. Because antibodies are prone to cross-reactivity, and if they haven't been sufficiently evaluated clinically to really represent authentic infections, you may be misled. If a high-quality serology test is positive, it would suggest that you probably are potentially immune, and therefore, that's quite reassuring. But, the FDA just released a whole batch of warnings on these tests that for the time being, you shouldn't assume that a positive test offers you protection and you can't assume that a negative test means that you haven't been exposed.

I think we're still learning how accurate antibody tests are for this infection, so at this early stage, I would not leap to any conclusions from a test.

## LOOKING FORWARD

### Healthnetwork Supporter Question:

What do you see happening over the next couple of weeks? There is talk about potentially trying to loosen those restrictions and get the economy going again. Can you provide your take?

### Dr. Auwaerter:

I personally feel that it would be best for the country if loosening only occurs when it's very clear the rates of new viral infections have dropped significantly to minimal levels, and then social distancing should still occur to try to help minimize that second wave. This can only really be done or thought about on a week-to-week basis as we look at this.

Although some have proposed that perhaps there can be certain states or regions where such restrictions are lifted earlier rather than others, such as cities. You know, we're not sure. This kind of massive and global restrictions on populations is completely new. As I mentioned, I think we'll have some idea from China and Japan whether the strategy that I just outlined might work, but it does so much depend upon: 1.) Whether this virus is very active or less active during warmer months; and 2.) Whether people can maintain social distancing over time until we have effective measures such as either medication or vaccine that will protect us.

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