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## Separating Fact from Fiction: Novel Coronavirus Myths

Mr. Nacinovich:

Throughout history, there have been multiple viral outbreaks, but very few have caused such an immediate public panic than the novel coronavirus known as 2019-nCoV that's currently sweeping across China, Europe, and now America, but it's not the only virus we're facing. Fear is spreading due to the rapid information being released on social media, and how we in the clinical space respond to both viruses will define the next days, weeks, and months to come.

Welcome to the *Clinician's Roundtable* on ReachMD. I'm Mario Nacinovich, and here to share with us what we need to know about the recent novel coronavirus outbreak is Dr. Charles Gerba, a microbiologist and professor of environmental science at the University of Arizona. Thanks so much for joining us today, Dr. Gerba.

Dr. Gerba:  
Thank you.

Mr. Nacinovich:

So to start, Dr. Gerba, can you give us some background on what we currently know about the novel coronavirus? How is its composition and transmission unique from what we've seen before?

Dr. Gerba:

Yeah, it's very similar to other coronaviruses because respiratory infections, basically, are very readily transmitted by coughing and sneezing, and they're aerosol transmitted. There are other coronaviruses, you know. Every year, we do get coronavirus respiratory infections in the United States, so it's not an unusual virus from that standpoint, but it can spread very rapidly among the population usually. The concern with the new coronavirus like this one is, you know, does it have an increased mortality rate with it as it's spread? People haven't really seen this coronavirus before, so that's always a concern, and what the total impact may be on the population, and the severity of this particular coronavirus is a potential issue, too. It still has to all be sorted out from all the epidemiological data that's being gathered and what we're really looking at in terms of impact and how readily it spreads. It does seem to be spread very readily as a respiratory infection much more so than the SARS agent, which was a previous coronavirus.

Mr. Nacinovich:

There are several ongoing questions as to the origins of this virus, and it's currently tied to the Wuhan province in China, but can you walk us through the timeline of events that evolves to where we are right now?

Dr. Gerba:

Yeah, it seemed to, you know, evolved late last year somewhere in, like you said, the Chinese city of Wuhan and spread very rapidly. Now, coronaviruses infect both humans and animals, and the likely scenario that's being developed here is somehow in Wuhan, maybe at an animal market, is potentially the case, jumped from an animal to man, novel coronavirus that apparently previously hadn't been infecting human beings to any extent, and that's a concern with the coronaviruses like the SARS agent. It appeared to jump from animals, particularly with bats has been pointed as a potential source, that eventually made its way to mankind. So, I think one of the things you have to worry about is close contact with animals in open markets where there might be live animal markets and the potential of the agent being transmitted from an animal to a human being. One thing is you have to realize, these viruses do mutate at a fairly rapid rate, so even the current coronaviruses, people have already speculated it may be mutating as being spreaded to the whole population.

Mr. Nacinovich:

Let's speak to the clinical features of this disease. How is it presenting, what is the known incubation period, and is the severity of the disease fully understood?

Dr. Gerba:

Yeah, you know, that information is still coming in and being gathered, too, but it looks like an incubation period of several days longer than SARS, maybe up to 10 days incubation period, which if the virus is being excreted during that time, gives more time to actually be spread, so it does seem to have a longer incubation period than a lot of respiratory viruses that you might see in that population, but generally these viruses are spread by sneezing, coughing, and then either you inhaling it or potentially you can get it on your fingers and hands by touching surfaces that may have been contaminated, and then you touch your nose, and coronaviruses are very effectively spread by getting into your nose. That's been shown with human studies before, but basically you're looking at coughing, sneezing, typical respiratory infections, maybe more severe than some of the typical ones like the common cold, for example. But you're sneezing, coughing out the virus all the time, so that's really where the potential spread is going on. How long you're going to be ill? Maybe several days to a week or longer. A lot really has to be looked at as the data is being gathered currently to really get a total picture of how long this illness is exactly.

Mr. Nacinovich:

Any insights thus far on the especially vulnerable populations? Is this virus equally dangerous to all?

Dr. Gerba:

Yeah, that's really the concern. Most of the people who are seriously ill or die from these infections usually have some kind of underlying illness that they have or are immunocompromised in some other way. So, generally, most of the people who have been dying from it have underlying illness or immunocompromised are usually the elderly people or the very young. Those are the people that are at the greatest risk of any type of respiratory infection, even influenza.

Mr. Nacinovich:

For those just tuning in, this is *Clinician's Roundtable* on ReachMD. I'm Mario Nacinovich, and today I'm speaking with Dr. Charles Gerba about the recent and novel coronavirus outbreak. So, Dr. Gerba, now that we've covered what we currently know about the virus, I'd like to separate some of the facts from the myths that are spreading at equal speed as the virus itself. So, on that track, there have been multiple reports spreading on social media as to whether this virus is, in fact, natural or synthetic given the major virology lab located at the site of origin. Do any of these claims have substance? Or are they products of growing hysteria?

Dr. Gerba:

The last likely SARS outbreak originated also in this same region, so it's probably more of the interaction of the people with the animals in the environment and the live animal markets that have been pinpointed as a potential source. Also, you have a large population, a rather dense population, so something like this can get started very readily. Genetically, there's been a lot of initial work on this SARS virus, so it indicates it coming from some animal source. Which one was the original animal, though, to pick it up, the other animals pick it up, I think all that still has to be sorted out yet.

Mr. Nacinovich:

There are also some concerns about whether this information coming from the origin site is complete or if it's being suppressed in some way. As a microbiologist, do you have any concerns about the possible lack of information to address this outbreak most effectively?

Dr. Gerba:

Well, I think any outbreak is hard to follow as it develops, and the information isn't exactly reported all the time to the health department necessarily immediately or right away. Sometimes people have fears reporting in that. I mean, I think they're doing the best job possible. I don't think there's any attempt at the least in this outbreak to really hide any information. There's really updates all the time. Some people have been concerned maybe the numbers aren't accurate or maybe they're underestimated, but I think looking at the strata, it's more information that I'd really seen in an outbreak at this stage going on and the number of cases being reported, and I think the health departments are doing the best job they can from what I see. It's not necessarily easiest information to acquire and document and track all the time, either, especially when you're dealing with large populations all the time. I've been impressed actually how fast the number of cases have been documented because the clinical tools are available to actually diagnose this virus very rapidly, so I think, at least from previous outbreaks that I've looked at and studied, I think the amount of information coming out of it is much better than I've seen in a lot of other outbreaks. I think, again, there are better diagnostic tools. I think the health departments are concerned. I think there's been a lot of effort to try to control the outbreak the best that can be done.

Mr. Nacinovich:

What general recommendations would you suggest to health care professionals at this time?

Dr. Gerba:

I think it's important to follow the information that comes up, particularly the Centers for Disease Control page and recommendations that they may make and to become familiar with the symptoms of it. Now, there's a lot of similar symptoms this time of year because respiratory infections are fairly common, but I would follow the advice of the Centers for Disease Control on their webpage. I would be concerned with anybody that might have the characteristics of the coronavirus infection, particularly if they've been overseas recently, and they should be aware of the potential for actually acquiring this type of infection, too. Standard procedures of wearing gloves and washing your hands regularly I think are still the best procedures you can do to reduce your risk of actually acquiring it when you're seeing patients.

Mr. Nacinovich:

As we have witnessed the World Health Organization declare coronavirus outbreak a global health emergency and we've seen restrictions on travel to that area, do you envision any changes in our own domestic travel recommendations or even restrictions while efforts to contain this virus are continuing?

Dr. Gerba:

I hope not. I don't know if that would really do much good in the United States. I would hope it doesn't really get to that and the concern doesn't develop that bad that we would need to take that type of action, but I think anybody traveling should follow some simple rules of washing their hands on a regular basis and maybe disinfecting key high-touch surfaces like the tray in front of you in the airplane. Actually, in studies we've done on trays in airplanes, we found influenza virus and parainfluenza viruses on the trays because they don't get disinfected all the time, but those are some precautions. I don't think at this time there's any necessary need to restrict the transportation in the United States for sure.

Mr. Nacinovich:

So, we've talked about general recommendations to health care professionals regarding the coronavirus, but there's an ever-present danger of the influenza strain that we are currently experiencing here domestically. How would you recommend clinicians allay patients' fears about the coronavirus and then speak to them practically about what they need to be doing to be aware of the current flu strain?

Mr. Gerba:

You know, that's a really good question, respiratory infections like coronaviruses actually have an impact every year on human health in the United States, a rather serious one if you look at it. In any given year, between 10 and 50 thousand people die from influenza in the United States, so respiratory infections in general are fairly serious, largely being an issue with older individuals and younger children tend to be, and I think we shouldn't lose our perspective on that in terms of it's always good this time of year to practice good hygiene because a lot of these agents are spread by your hands and surface contamination and sneezing and coughing inappropriately without covering it up. So, we shouldn't lose perspective, and we should always have respect for respiratory infections because they do play a significant impact on our health every year. I think it's really important physicians emphasize between older individuals, individuals over 55, 60 years of age, and infants, the importance of good hygiene, practicing good hand hygiene, surface hygiene, and making sure to emphasize that among their patients, too, because in studies that we've done and others shows you can reduce your risk of getting respiratory infections by almost half by just practicing good hygiene.

Mr. Nacinovich:

Well, considering the far-reaching impact of this virus, I want to thank Dr. Charles Gerba for joining me to help separate fact from fiction and for getting up to speed on the novel coronavirus outbreak. It was certainly great speaking with you today, Dr. Gerba.

Dr. Gerba:

Thank you.

Mr. Nacinovich:

I'm Mario Nacinovich, and you've been listening to *Clinician's Roundtable* on ReachMD. To access this episode and others in the series, visit [ReachMD.com/CliniciansRoundtable](https://ReachMD.com/CliniciansRoundtable) where you can be part of the knowledge. Thanks for listening.