



Update 33 - COVID-19 – From Office of the Medical Director 14 JUL2020 1000

To: All EMS Personnel in the EMS System for Metropolitan Oklahoma City & Tulsa

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Key Content:

- **Next Gen COVID-19 Testing – Promising Steps? – The New York Times**
- **The 239 Scientists Letter – Clinical Infectious Diseases**
- **Arghhhhhhhhhhhhhhhhh! One Damnpemic, I Mean Pandemic, at a Time**
- **Educational Resource – The Osterholm Update – Episode 15**

If you'd rather not receive this Update (and honestly in fair estimation many more to come), I do understand. Writing, receiving, reading, discussing, sharing them – anywhere along that spectrum invokes recognizing an unfortunate reality. These Updates, while not unique in their content or intent, do mark the ongoing presence of a serious viral pandemic that WE ALL want to vanish.

This week, this virus and its symptoms may feel more real, more worrisome, more stressful – we have several more EMS sisters and brothers in self-quarantine and an increasing number – either already in quarantine or unexpectedly symptomatic - with confirmed COVID-19. How many more with COVID-19 across our system? I'm not precisely sure, so I won't give that number until I do. What we have seen so far is that more are getting exposed and infected OFF work rather than ON DUTY. That's not a judgement against living a life away from work, but a note of caution and a note of encouragement about PPE properly worn at work. That PPE becomes even more important as we do encounter more patients with COVID-19.

I've asked the OMD team to query every agency in our EMS system on the 15th of every month for numbers of personnel in quarantine and numbers of test confirmed COVID-19. We want to track the direct impact on our EMS system's professionals (aka YOU!) and still balance those queries to avoid too much work on the folks tracking that information. Monthly for now, though we will increase the frequency as needed.

There's no question the Emergency Departments have increased in patient volumes too – with and without COVID-19. Patients are increasingly in waiting rooms, hallways, and as you know too well, on your stretchers waiting for the next space in the ED to open. Throw in some hot, muggy days and evenings, add unsuspected downpouring rain, and even an optimist would say, "Well, it does suck more than a bit, don't it?"

There are no words to bring immediate calm and happiness. What I can share in words and actions is that I believe we will get through this together. When will it be "over" as we'd like to say it is? We don't yet know lasting physical and mental impacts of COVID-19. As far as the acute impacts in health? I don't know – sometime in 2021 is what I think, earlier rather than later is what I hope. What I can

do, and will continue to do, is pour through volumes of news articles, research, podcasts, and whatever else I can think of to bring you information to keep you informed for your safety, so you can also pass that safety along to your family, your patients, and your friends.

Here's some latest towards that goal:

Next Gen COVID-19 Testing – Promising Steps? – The New York Times

While most of the daily news about this viral pandemic, both afar and within our specific communities, continues to be worrisome, there are positive indicators for some helpful answers ahead. This is a nice, brief summation of much of the work presently going into a better generation of COVID-19 testing – in terms of easier/less painful for patients AND far more rapid results AND more reliable results as well. All positives that we need... except realistically, it will be months before these newer testing options could be widely available in metropolitan OKC and Tulsa. That said, some optimistic views are always welcomed when supported by dedicated work in progress. Here's the link to this story in *The New York Times* to get us up to date on what is likely ahead: <https://www.nytimes.com/2020/07/06/health/fast-coronavirus-tests.html>

The 239 Scientists Letter – Clinical Infectious Diseases

As promised in Update 32, here's that letter from 239 scientists worldwide advising that we should be following airborne (aerosol) spread precautions to help us avoid COVID-19. Fortunately, locally we've been saying this exact thing for months. Still, it's helpful to see that lots of smart folks agree. Here's their letter (once the webpage opens, click on the PDF icon to open the full letter): <https://academic.oup.com/cid/article/doi/10.1093/cid/ciaa939/5867798>

Arghhhhhhhhhhhhhhhhh! One Damnpemic, I Mean Pandemic, at a Time

Well, if these infectious disease times weren't enough for you, and they should be!... you may have heard rumblings and concerns about a different kind of influenza on the horizon. What in this crazy world is this all about?

Below is the language direct off the CDC information page on this subject. Final answers are anything but settled. No question the earlier that viral scientists, epidemiologists, clinicians, physicians, and others are investigating a threat to our health, the earlier that answers to prevent it (vaccine) or treat it (anti-viral medications?) can be found. Hopefully, this one won't prove the threat than some prior influenza strains have caused and certainly the havoc that the SARS-CoV-2 virus is currently wreaking around our world.

“CDC Takes Action to Prepare Against “G4” Swine Flu Viruses in China with Pandemic Potential

July 2, 2020 – A recent publication in the journal [Proceedings of the National Academy of Science \(PNAS\)](#)[external icon](#) describes a group of H1N1 swine influenza viruses that have “the essential hallmarks of being highly adapted to infect humans” and which are therefore of potential pandemic concern.

This group of viruses, referred to as “G4” Eurasian (EA) avian-like H1N1 viruses, has been spreading in pigs in China since 2016 and has become the predominant genotype found in Chinese pigs. According to the report, these viruses have the right characteristics for causing infections in people, including the ability to grow well in human lung cells and to spread by respiratory droplets and direct contact in an animal model. While only three human infections with G4 viruses have previously been reported, this study found that about 10% of swine workers from whom blood samples were taken in China had evidence of prior infection with G4 viruses, suggesting that human infection is more common than previously thought.

It's important to note that there are no reports of G4 viruses spreading from person-to-person, a characteristic that is required in order for a pandemic to occur. Also, G4 viruses have not been detected in pigs or people in the United States. However, like all flu viruses with pandemic potential, CDC is taking a number of actions to monitor and prepare against this emerging public health threat, including:

- Coordinating with public health partners in China, including requesting a virus sample
- Assessing the risk of the virus causing a pandemic using CDC's Influenza Risk Assessment Tool (IRAT)
- Evaluating whether an existing candidate vaccine virus (CVV) against a closely related flu virus (called "G5") would protect against this virus,
- If needed, creating a new CVV specific to G4 viruses, and
- Studying whether existing flu antiviral drugs offer protection against this group of viruses.

These G4 viruses would be detected by the current CDC Influenza Virus Real-time RT-PCR Influenza A (H1/H3/H1 pdm09) Subtyping Panel, which would indicate this was an H1N1 [variant](#) virus infection. CDC has [guidance for clinicians on variant virus infections](#) and state public health laboratories have [standing orders external icon](#) to forward variant viruses to CDC for further study.

G4 swine flu viruses in China described in the PNAS report have a mix of genes from influenza viruses found in humans, birds and pigs. Five genes of the G4 virus came from the 2009 H1N1 virus that caused the 2009 flu pandemic. Based on laboratory transmission studies in ferrets, G4 viruses can spread via direct contact or via respiratory droplets. CDC has tested a closely related G5 virus in its laboratories and observed transmission similar to what was reported in this study.

G4 viruses likely resulted from a process called "reassortment," which occurs when two or more influenza viruses infect a single host and exchange genetic material. This can sometimes lead to the emergence of new influenza viruses in people or animals. Pigs have been identified as a sort of "mixing vessel" for reassortment to occur because pigs are susceptible to infection with influenza viruses found in pigs, birds and humans. The 2009 H1N1 pandemic arose from a reassortment event between pigs, birds and human influenza A viruses.

The PNAS study showed that among 338 swine works whose blood was tested for antibodies, about 10% had evidence of past infection with G4 viruses. A higher rate was observed among 18-35-year-old swine workers. Regular households also were sampled, and about 4% of the 230 people from the general population had antibodies to G4 viruses. These data suggest that these viruses may have acquired increased capability of infecting humans. Study authors caution that continued circulation of these viruses in pigs and exposure to humans may allow for additional reassortment events to occur and that these viruses and infections should be monitored closely.

Experts believe most people would lack immunity against G4 viruses, and despite seasonal flu vaccines protecting against the 2009 H1N1 virus, G4 viruses are different enough that seasonal flu vaccines would be unlikely to provide protection or prevent onward human-to-human transmission.

A prototype candidate vaccine virus (CVV) from the closely related EA avian-like H1N1 G5 swine flu virus was originally developed by the World Health Organization (WHO) Collaborating Center at the China CDC. A comparison of the genome of this virus to that of G4 viruses reveals that these two viruses are similar. Studies are planned to assess cross-reactivity between this vaccine virus and G4 viruses. If needed, CDC will work to create a new CVV made specifically against G4 viruses.

CDC and its public health partners around the world will continue to monitor this situation closely."

For completeness, here's the link to the webpage this information was gleaned:

https://www.cdc.gov/flu/spotlights/2019-2020/cdc-prepare-swine-flu.html?deliveryName=USCDC_7_3-DM32808

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And now, you know all that I know on this today. I'd like to say we don't need to keep this on our radar, but wayyyy back in January, we were hopeful all that we'd have to do with SARS-CoV-2 (not even named such at that time) is just be aware and watch from afar. So much for that. For now, I'll be on the close watch for us on this as well. Now, back to our "regular programming" on SARS-CoV-2...

Educational Resource – The Osterholm Update – Episode 15

Dr. Osterholm's latest podcast, episode 15 of The Osterholm Update, A Coronavirus Forest Fire, is posted on the CIDRAP website with release date 10 JUL. I appreciate his frank assessment of the current surges in COVID-19 in many parts of the US, particularly in Southern states. His decades of experience in epidemiology and knowledge about coronaviruses – besides and including SARS-CoV-2 - must be factored in his estimations about what it takes us willing to do, individually and as communities, to regain some control of COVID-19's spread. I encourage you to invest the 51 minutes to listen to all his thoughts he shares in this podcast. He also tells us some detailed thoughts are ahead for us in podcast episode 16 about issues relating to schools and concerns/opportunities for them re-opening ahead.

For those of you a certain age, he included in this podcast an advertising slogan you'll immediately recall when I tell you it was used by Fram oil filters. If you have no idea what I'm sharing, just listen to the podcast. You'll understand how well it applies to this viral pandemic when you hear it in his comments. You can access it at this link: <https://www.cidrap.umn.edu/covid-19/podcasts-webinars/episode-15> or The Osterholm Update is available on Spotify, Apple Podcasts, or Google Play.

So much more in the "inbox" to share, though always best in digestible bites of information at a time. Amidst your busy days and nights, receiving a 40-page Update does nothing helpful. If you haven't noticed, I'm purposefully keeping these to 3-4 pages unless graphics heavy. I'll keep those limits unless a critical to know right now volume of information comes all at once to me. Please keep wearing the PPE. Keep being patient advocates AND advocates for each other. I'm incredibly proud of your ethics, your attitude, and your care for others.

Vigilance. Safety. Evidence-Based Service to Others.

Let's be careful out there.

Dr. Goodloe