

2021 M3 Conference
Q&A with Jon Fielder, MD
“COVID-19 in Africa: A View from the Ground”

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As a clinician or physician assistant who has not yet specialized, how can I find my niche since most hospitals are asking for specialized doctors?

There is most definitely a need and role for generalists. It is true in some more advanced mission hospitals that specialists are increasingly important. But in more rural areas or in the poorest countries, a generalist is what is needed. For physician assistants, you need to check the individual country's classification. Some will register a PA as a clinical officer, a close equivalent.

Do you think there is a misconception about COVID specifically? And what would you like to say to help educate us and eliminate some of those misconceptions.

In Kenya, there is some stigma that surrounds COVID. I don't want to reduce COVID to being just the flu, but it is a respiratory pathogen like the flu. We don't stigmatize people with the flu, and we shouldn't stigmatize people with COVID. I've had these kinds of discussions with family members when there is some hesitancy about testing or going to the COVID ward. Sometimes it's been a little bit of a challenge.

What are the best available data resources relating to COVID in Africa?

I use either the Hopkins data tracker (<https://coronavirus.jhu.edu/map.html>) or the Worldometer website (<https://www.worldometers.info/coronavirus/>).

Do you think the outdoor culture and more exposure to Vitamin D influenced the numbers and severity of COVID-19 infections there?

In urban areas of Kenya, the COVID antibody prevalence is high. So, at least in these areas, outdoor culture is not preventing infection. If the outdoor culture is having an impact, it MIGHT be through exposure to lower viral loads, and hence less severe disease; although, that connection is speculative at this point.

Do you think there are certain genetic factors in play with regards to a patient's immune response to COVID-19?

Investigators in (I believe) the Netherlands found a family uniquely susceptible to severe COVID. There was another report (can't remember from where) suggesting genetic factors may play a modest role. Whether genetics might be a factor in the lower mortality rates in Africa, I don't know.

Is the widespread use of chloroquine for malaria a factor in keeping the number of COVID cases currently low on the continent of Africa?

Chloroquine is rarely used here anymore. We do use hydroxychloroquine for Lupus and other autoimmune conditions. Routine malaria prophylaxis is not used in Africa outside of expat communities and intermittent dosing of pregnant women.

What are your thoughts about why there is widespread COVID in South Africa?

An article by the well-known writer and oncologist, Siddhartha Mukherjee, last week (February 22, 2021, *The New Yorker*), wrote (paraphrasing) - if you look at India, it has the same median age as Mexico and South Africa, and yet India has not been hit as hard as those other two places. So, I think age is part of it when comparing South Africa maybe to Kenya and some other African countries. But there has to be something else. South Africa has a lot of diabetes, it has a significant obesity epidemic, so I think some of those chronic noncommunicable co-morbidities are playing a role there.

Wouldn't you expect conditions in rural Africa, such as acute malnutrition, chronic anemia, or chronic malaria, to make those populations more susceptible to contracting COVID? Or, could these conditions, especially chronic malaria, protect them?

I think that age is probably still the driving factor. For example, in Zambia, the population is young. Although, a lot of those kids might be malnourished, it might be their young age that is relatively protecting them. However, there was just a study that came out of Zambia that found a really high and discouraging number of people who had died at home either with or of COVID.

Do you find it amazing that there isn't widespread severe COVID in those densely populated areas of Africa?

I think there is widespread COVID. I think people have really been exposed. If you tested everyone in a settlement like that for antibodies, I think you'll find that they have COVID. The tradition here in Africa is that as people get older or retire, they move up country and to the villages, which aren't so densely populated. So, younger people are left in the densely populated cities, which again makes us think that age plays a role.

Are the numbers low because there are only a couple of places allowed or authorized to test? Are you able to run the PCR test at Kijabe Hospital?

Insufficient testing is clearly a factor. None of the mission hospitals can run the PCR. A rapid antigen test is now available, but the sensitivity is low. Often, we have to make a clinical diagnosis.

How are the comorbidity statistics in Kenya (obesity, hypertension, and diabetes)? Due to our current understanding of COVID-19 utilizing the ACE2 pathway, could this be impacting the percentage of COVID-19 if these statistics are lower in Kenya?

Good point. The chronic non-communicable disease rates are certainly lower than in the U.S. When I worked in Kijabe's COVID ward, diabetes was the most common co-morbidity. HIV was less common. Part of the explanation for the worse outcomes in South Africa is a higher prevalence of these diseases. Diabetes is more common in South Africa than in the U.S.

Do you use EVMS MATH+ protocol for COVID treatment? Why is the mortality / morbidity lower in Africa? What percentage of people in Africa take anti-malarial drugs, e.g., HCQ?

I am not familiar with that protocol and haven't seen it used here. I think the infection fatality rate is lower primarily because of a younger population and a lower prevalence of high-risk conditions like obesity and diabetes (although those certainly do occur here). Very few Africans use routine malaria prophylaxis. Intermittent malaria treatment is part of the antenatal protocols.

Many countries in Africa have few ventilators for millions of people who are critically ill with COVID-19. How can we overcome this obstacle? Due to lack of ventilators, patients with COVID-19 are dying at an alarming rate in Africa. Any solution for this?

In my opinion, the emphasis at this stage should not be on ventilators. The outcomes in the West for COVID patients requiring ventilators is not great. We need stronger systems, more nurse ICU training programs, and more oxygen before focusing on expensive ventilators.

What is the critical need for oxygen supplemental systems?

Only about half of the hospitals in Africa have oxygen and only about 20% of all health facilities. And, even when you look at those that do have oxygen, you're looking at portable oxygen concentrators and maybe a few cylinders. You're not looking at the pipe oxygen we are used to in the United States. So, really you are talking about an enormous resource gap. It's about hundreds of millions or a billion plus dollars' worth of oxygen that needs to be put in these hospitals.

Addressing respiratory issues in your community, do you have a respiratory therapy/pulmonary function lab for your respiratory and COVID patient clientele?

Pulmonary function tests are not widely available. I had one patient with complications of COVID whom I referred to Nairobi. It took weeks to get a DLCO.

Would you talk about the correlation between the severe clinical signs and symptoms of COVID-19 and the sensitivity of the test?

There is no such thing as "ruling out" COVID with a PCR. In the best labs, the PCR sensitivity might be 70%. And we have to send the test a long distance. The sensitivity also varies with days after symptom onset. So, if you see a patient on day 12 with severe hypoxemia and bilateral infiltrates, the PCR may be negative. But without another cause, that patient most likely has COVID.

How do you convince people in Kenya to accept the COVID vaccine when there is hesitancy?

I don't know that we've seen hesitancy in Kenya because the vaccine rollout hasn't kicked off here just yet; the vaccine has just recently come into the country. We might see some vaccine hesitancy, but I think the bigger challenge is going to be adult vaccination programs. Adult vaccinations are not something that happens here. Kenya and many other African countries do a very good job with pediatric immunizations (pediatric immunizations are pretty high), but adults are not used to coming to the hospital for a vaccine. So, if you're just waiting at the hospitals for the adults to come receive the vaccine, I'm worried that it will not reach the people in the villages. We are going to need to do community outreach and education.

What has been / is going on in Kenya related to COVID vaccines?

The first batch of about a million doses just arrived, and a few days ago, the first person was vaccinated. I haven't heard of the larger roll out beginning as of yet. My understanding is that health workers will be prioritized, and large hospitals will be the first vaccination sites. (Answer provided March 10, 2021)

Any information on the prevalence and the resources for long-haul / PASC COVID patients in Kenya?

I don't know of any yet; although, I have cautioned colleagues to think of "long COVID" when seeing patients with chronic hypoxemia or cor pulmonale. Usually, we think of sequelae of TB in these cases, but I think some are going to be COVID complications going forward. We had a patient at Maua Hospital recently who had been acutely ill with "pneumonia" a month prior and was re-admitted with a clear chest x-ray but chronic hypoxemia. In reviewing the case, I was pretty sure it was a complication of COVID.

What type of PPE and training are available and where do you obtain it?

N95 masks are available in Nairobi. At first, they were very expensive. Hand sanitizer and gowns were always available on the COVID ward. The school where my kids go made 1,000 face shields, which was great.

What factors cause the low median age that you mentioned in your presentation? High mortality? High birth rate?

Yes, just as you have said. In Kenya, only 3% of the population is over age 65. Other African countries are even younger. With better medical care and education, I think these trends will shift, as they have in the rest of the world.