

What Will Travel Medicine Look Like in the COVID-19 Pandemic Era?

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Highlight

Travel medicine has virtually stopped in light of the coronavirus pandemic. It is worth contemplating how travel medicine will be affected by the ongoing pandemic when international travel starts to become more possible. How will we advise patients, and utilize the coming vaccines that may be available? Travel medicine practices are well-suited to play a major role in advising travelers in the pandemic era.

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UNCORRECTED MANUSCRIPT

Introduction

The practice of travel medicine ground to a screeching halt in March of this year, as a spreading global pandemic and associated travel restrictions made it either impossible or unwise to travel to other countries. Borders were shut so quickly that many travelers spent months in limbo because they could not get home by air and cruise ships had nowhere to dock. At the moment we are not sure when travel will open up and when it does, what precautions travelers can take to protect both themselves and the people they encounter while traveling. All segments of the travel industry have been affected including airlines, hotel and hospitality and much will depend on how quickly and completely these bounce back. Many travel destinations depend on tourism and there is tremendous pressure to reopen.

One thing is certain: the usual travel-related disease risks will still be around, and travelers will need to see a travel medicine practitioner when planning to travel to resource-poor countries. However, with SARS-CoV-2 distributed throughout the world, travelers may need special precautions to travel to any destination. With constantly changing rates of disease in most parts of the world, it will be difficult to plan journeys that often are plotted months to a year in advance. The risks that remain will be the risk of exposure to the disease while traveling; the risk of bringing the disease to an area that has been relatively spared; and the risk of being stranded by sudden shutdowns in borders or air transportation.

What will it take for travelers to be able to safely start traveling around the world?

Given the fact that SARS-CoV-2 is highly contagious and passed directly from person to person, masks, hygiene and social distancing will remain the first lines of defense, but these measures alone may not make travel safe, particularly if journeying to a resource-poor country where

crowding in planes, trains, cars, restaurants, and tourist attractions is often inevitable. In addition, a traveler acquiring a severe case of COVID-19 in a resource-poor country could mean a lack of advanced medical care, and a low probability of being able to be evacuated by air.

Immunization and Prophylaxis

What resources are likely to become available in the near future? Two strategies are being worked on to induce immunity in susceptible people—passive immunization and active immunization. Although the most promising approach would be active immunization. This would be an ideal way of both ending the pandemic (if possible) and protecting individuals while the pandemic still exists. Many companies are rushing to try to produce such vaccines but questions remain on the ability to bring these to market as well as who should be prioritized to receive them once available.¹

Passive immunization would take us back to the era in which gamma globulin injections were used extensively to prevent hepatitis A in travelers. Gamma globulin contained a mix of antibodies purified from the blood of donors and contained enough specific antibodies against hepatitis A to protect the traveler for a period of time. If the traveler remains at risk, they would need to receive a subsequent injection. Currently there are several pharmaceutical and biotechnology companies working on this approach. Rather than the pooled plasma used in gamma globulin these investigators are using monoclonal antibodies or a mix of monoclonal antibodies which might be administered once a month for example to provide protection for a set period of time. This approach was recently shown to work for the treatment of Ebola² and holds promise that deaths from other viral infections associated with high case fatality and

explosive outbreaks, such as severe acute respiratory syndrome (SARS) coronavirus and Middle East respiratory syndrome (MERS) coronavirus could be minimized.³ If it can be shown that antibodies improve outcome during the course of the disease they may also play an important role in prevention.⁴

In a pandemic setting, it is likely that many people would want to be immunized if they were not already immune from natural exposure. Whether natural immunity is sufficient or long-lasting is still an unanswered question. It may be that individuals who have had infection with COVID-19 may still need to be vaccinated. Vaccine programs would not likely recommend pre-vaccine screening for antibodies in any case. Strangely, even in the face of a worldwide pandemic that is killing hundreds of thousands, people are already expressing skepticism and resistance to a new vaccine, which could slow down efforts to reach herd immunity.⁵

Travel medicine practices have a lot of experience in immunizing adults and children and could be at the forefront of the efforts to get people vaccinated. For travel medicine practitioners, some of the issues we might face are choosing which vaccine to use (if there is more than one on the market) and counseling clients on vaccine efficacy and potential side-effects. A new vaccine may offer different types of protection:

1. It could provide a high level of protection against disease.
2. It could allow some people to get sick but provide high level protection against a fatal outcome.
3. It could offer a high degree of protection against acquiring the disease, but not modify the course of the disease if they did become ill.

Obviously, 100% protection against disease would be ideal. The remaining issues would be the vaccination schedule, potential for severe side effects, and whether there would be a need for booster doses, and how often. A vaccine that offered protection against disease, but also modified the course of the illness such that patients were not in danger of dying would have advantages over a vaccine that prevented infection but did not modify the course of illness if it occurred. Influenza vaccines have been shown to both prevent disease and to modify the course of the disease in vaccinated people.⁶

Most vaccines however are not 100% protective, and when people do get the disease, they may have an unmodified course of the illness. For example, if the COVID-19 vaccine had 90% protective efficacy, that would be considered a good vaccine. However, it would mean that 10% of recipients would still be at risk of severe disease. For older people, and people with underlying conditions, this might still mean that they could not travel freely. For high risk travelers, a combination of active and passive immunization might be necessary.

One of the main roles that travel medicine practices could end up playing is advising clients on which COVID-19 vaccine to take, if there are more than one on the market.

Future Scenarios

COVID-19 could persist as a risk in the world and take its place among serious infectious diseases for which ongoing immunization, or determination of immunity, would become a normal part of our lives. It is also possible that the disease could disappear at some point, if sufficient herd immunity throughout the world led to elimination of the virus. Given the limitations of health care in resource-poor parts of the world, and a growing antivaccination

movement, complete elimination of the virus may not occur, or it may occur in some countries but not others. In that scenario, COVID-19 protection may remain an ongoing issue in travel medicine practices.

Advisability of Travel

In a new era of travel medicine, it is likely that travel medicine practices will be called upon to help determine when it is safe to start planning travel, whether it is safe to actually go on the journey, and helping travelers make a hard decision to cancel the trip if circumstances take a turn for the worse. There is precedent for this in regard to counselling women who were either pregnant or considering becoming pregnant on the wisdom of traveling to destinations where Zika virus might be a risk.

In relation to COVID-19, the questions would revolve around the risk status of the given traveler (age and underlying conditions), the prevalence of the disease at the destination, and whether reasonable precautions are possible to avoid exposure. Can they obtain medical care (including testing) if they become ill? Is advanced medical care an option in a particular destination? If the disease flares up while they are traveling, are they in danger of being locked down for an extended period of time—something that already happened to thousands of travelers this spring.

It is likely that travelers who become ill with COVID-19 will not be able to be evacuated, due to the rarity of air ambulances that can maintain disease precautions for the entire flight, and quarantine regulations that may be in place. Air evacuation companies are unlikely to cover the cost of evacuation for pandemic disease. There might be a lot at stake for certain

travelers that consult a travel medicine professional before booking an expensive trip (for example a high-end safari in Africa). Cancellation insurance may specifically exclude having to cancel because of the risk of pandemic disease.

Conclusion

Travel medicine practices should think about the ways they can be involved in immunization, testing, and protection of people in their countries. It's a natural extension of travel medicine, but in private settings may require gearing up to be busier than in the past. It will be worthwhile for travel medicine practitioners to stay alert to opportunities to help their communities and benefit their own practices. In the midst of all the uncertainty in regard to COVID-19, it's not too soon to start thinking about how to position ourselves to emerge from this pandemic situation.

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