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Staying Up to Date with Travel Vaccination Recommendations

Announcer:

You're listening to *VacciNation* on ReachMD, and this episode is sponsored by Valneva. Here's your host, Dr. Charles Turck.

Dr. Turck:

This is *VacciNation* on ReachMD, and I'm Dr. Charles Turck. Here with me today to share his insights on the latest travel vaccination recommendations from the Advisory Committee on Immunization Practices, or ACIP, is Dr. David Hamer. Not only is he an Infectious Disease Specialist at Boston Medical Center but he's also a Professor of Global Health and Medicine at Boston University. Dr. Hamer, welcome to the program.

Dr. Hamer:

Thank you.

Dr. Turck:

So, Dr. Hamer, the ACIP recommendations state that even before considering travel-specific vaccines, patients should be up to date on their MMR, DTaP, chickenpox, polio, and flu vaccines. Would you tell us why that's so important?

Dr. Hamer:

I think there are a couple of reasons why this is important to me. One is that seeing travelers is an opportunity to catch up on routine immunizations if they have not seen their primary care providers in recent years, which is often the case, especially for younger travelers, but even for middle-aged and older travelers. Second is that many of the diseases for which we routinely vaccinate are more common in low- and middle-income countries where people travel to. Measles for example can frequently cause outbreaks. There's a higher prevalence of pertussis. Tetanus is important to be up to date on because of the potential risk for an accidental exposure, a wound that can become infected, and varicella, chicken pox is also more common, so there's really a higher risk for travelers to these areas. So really, two major reasons: catch up, and then trying to reduce their risk during travel.

Dr. Turck:

Now if we focus on travel-specific vaccines, some of the ones that are often recommended include hep A and B, typhoid, Japanese encephalitis, rabies, and meningococcal meningitis. So what do we need to know about the effectiveness of these and any other relevant travel vaccines?

Dr. Hamer:

Well, I mean, each one's different. I think hepatitis A is so common worldwide that we try to make sure almost everyone has been immunized against hepatitis A. And increasingly that's the case because, at least in the United States, many states have adopted hepatitis A as part of their pediatric immunization schemes. And I think that became federal recommendation at some point, but there are many people that were not vaccinated because they were old enough that they were past that age where they would have been considered, so there's definitely a pool of people at risk for hepatitis A. Hepatitis B, most people would have been immunized; it's really a requirement for school entry and university entry so that usually is not an issue.

Typhoid, on the other hand, is a very specialized vaccine for travel, and the risk for typhoid is common in many low- and middle-income countries. Certain parts of the world like South Asia, India, and the surrounding countries have a very high prevalence of typhoid and actually, probably Sub-Saharan Africa does too. There are more recent data on that, so typhoid's a strong consideration.

Meningococcal is another one that's complicated where, in some cases, people may have had it before university entry in the United

States, but then the vaccine doesn't last forever, so there may be a need for repeat doses. And some of that is really dependent on destination because there are certain parts of the world where meningococcal outbreaks, epidemics occur on an annual basis. And then others where it may be recommended or even required, such as entry to Saudi Arabia during the Hajj.

On the other hand, Japanese encephalitis is, I wouldn't consider that a routinely used travel vaccine; it's something that I routinely talk to people about when they're traveling to South Asia, Southeast Asia, and even Japan, although, honestly, we do not see many travelers to Japan. I've seen a few over time and have been able to obtain maps of Japanese encephalitis distribution in Japan from colleagues in Tokyo. But that said, Japanese encephalitis is a relatively rare disease. On the other hand, it can be devastating for somebody that develops a symptomatic infection. About 1/3 of people die, about 1/3 are permanently maimed. Some might have chronic neurologic sequelae. And so it's really a severe disease for which prevention can be helpful, and the vaccine does appear to prevent the disease very well.

Now rabies is another one that's a challenge. I think for Japanese encephalitis to some extent, and definitely for rabies, one of the barriers is cost. If the rabies vaccine were \$25 a dose, I would give every traveler the pre-exposure rabies vaccine, but it's not. It's actually many hundreds of dollars per dose usually and can be expensive. The good news is that after a lot of research by various groups, mainly in Europe and a little bit in Thailand, we have been able to reduce the pre-exposure rabies series from three shots to two shots and that makes it one dose less. But the issue, at least with rabies, is that it's common throughout the world, usually from dogs, but it can be cats, and monkeys, and other animals. And many countries do not have rabies immune globulin available or readily available, and so then if a traveler has a bite or a scratch that breaks the surface of the skin and needs post-exposure prophylaxis, they may not get effective treatment. The vaccines that are available worldwide are generally the same cell-based vaccines that we have in the U.S. and Western Europe but the rabies immune globulin availabilities often very limited. So it's definitely a consideration. It becomes a consideration of duration of travel, types of exposures, and then unfortunately cost.

Dr. Turck:

Now if we look at one more recommendation, patients should schedule a consultation with a clinician or a travel medicine specialist at least four to six weeks before they travel. So with that being said, why does having that consultation at the appropriate time matter?

Dr. Hamer:

I think that the reality is that people don't come in that far ahead of time a lot of the time, and I think it's helpful for a couple reasons. One is for certain vaccine series, say rabies and Japanese encephalitis, you need to have two doses of vaccine. It used to be four weeks apart but with more data and secondary studies that were done post-licensing, both vaccines, well for rabies, we've been able to reduce it to a week apart with a newer two-dose regimen as opposed to a week apart with a third dose at 21 or 28 days. That has greatly simplified giving the rabies vaccine. Japanese encephalitis vaccine, same thing, initially it came out two doses a month apart, but then a lot of us pushed the vaccine manufacturer to do additional studies. They did and showed that the immunogenicity, at least based on neutralizing antibodies, was the same whether it was a week apart or four weeks apart. I think that it's less urgent now for people to come in four to six weeks ahead of time. I think it's important to probably have at least two to three weeks. So if you have a regimen that requires two doses a week apart, you really want seven to 10 days after that second dose to have good level of protection, a good level of immunity from the vaccine. And so I think three weeks is, or more, is ideal but the reality is that's not often the case.

Dr. Turck:

For those just tuning in, you're listening to *VacciNation* on ReachMD. I'm Dr. Charles Turck, and I'm speaking with Dr. David Hamer about the latest travel vaccination recommendations.

So with all those recommendations in mind, Dr. Hamer, let's zero in on how we can create personalized vaccination plans. What factors do you consider alongside the ACIP recommendations?

Dr. Hamer:

I have a very regular approach to assessing patients that are travelling. I look at their past medical history, medications, allergies, as a starting point just to get a feel for whether there's potential limitations. Are they immunocompromised? Do they have some relative contraindication to vaccination or to certain medication, such as antimalarials, we might prescribe for prevention of malaria? And then I review their past immunization history. And then finally, I do a very careful review of their itinerary. When are they leaving? Where are they going? What are they going to be doing? What kind of accommodations are they going to be staying in? And try to do a risk assessment of what their potential risk of exposure is during travel. Purpose of travel becomes very important. If somebody's on a high-level business trip, their exposure's maybe not that high-risk; whereas if somebody, if it's a low-budget tourist, they may be roughing it, and they may be more likely to have greater food and water and perhaps a vector-borne disease exposures. Somebody's going back to visit friends and relatives will have a very different array of risks. So I tailor the recommendations to the individual and their trip characteristics.

Dr. Turck:

And once you create personalized vaccination plans, how do you communicate them to your patients? What do you find is most effective?

Dr. Hamer:

I mean, as time permits, just explaining what the different vaccines are, a little bit about how the disease is transmitted, what their risk is. It's hard to assess actual risk, but you can do that in broad generalities based on knowing the epidemiology of the disease and the location they're going to, but also a little bit about what their potential exposures are going to be. Are they going to be more urban, rural in a country? That may change the risk.

And then I may walk through using the vaccines. I start out with updates of childhood vaccines or routine immunizations or just try and make sure we've got that covered. Then I do routine travel-related vaccines, so hepatitis A, typhoid, those are probably two of the big ones. And then we get into more specialized vaccines. Do they need something like a pre-exposure rabies series? Should they be thinking about the Japanese encephalitis vaccine? And now the real challenge is we also have a live attenuated vaccine for chikungunya. And that becomes an even trickier one because it's recommended primarily for people going to an area where there's an outbreak, so we need to know that CDC has declared this an outbreak, or for a longer-term traveler's area where there's been chikungunya transmission in recent years. And so that requires a whole additional set of explanations. But because the outbreaks come and go very quickly, it also requires a practitioner to be tracking those and to know where the risk lies at any one point in time.

But basically, I think carrying on a conversation and trying to make sure the patient understands the risk of these diseases, why the vaccines are important, the potential risks of the vaccines, which are usually not that great, but I think it's important to do a risk-benefit analysis for some of them, especially if there's a high cost involved or if there's a great risk of potential side effects.

Dr. Turck:

And lastly, Dr. Hamer, what kind of impact can travel vaccination recommendations and a personalized approach have, not only on our patients, but individuals around the world?

Dr. Hamer:

That's a tricky question. I think if we have more people that are traveling that are protected against certain diseases then they're less likely to acquire it and facilitate local transmission, but they're also going to be less likely to become infected and bring that disease home with them. Measles is a great example probably because it's just so contagious but a lot of the measles introduction in the United States and local spread emanates from travelers, from people who have not been immunized, travel, become infected with measles, return while they are incubating or symptomatic, and then it can lead to spread in the community if immunization rates are not high. So there's a lot of benefits both to the, I think some benefits to the country where they're traveling to but definite benefits to try and limit introduction and spread within their own country after return from travel.

Dr. Turck:

Well with those considerations in mind, I want to thank my guest, Dr. David Hamer, for joining me to help break down the latest travel vaccination recommendations and how we can apply them in clinical practice. Dr. Hamer, it was great having you on the program.

Dr. Hamer:

It's been my pleasure. Thank you.

Announcer:

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