Lesson Learned and Practical Advice for Supporting the Pediatric Traveler

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The authors of this supplement would like to finish this series with some practical advice learned from their combined experiences, and useful recent studies. This group has engaged in a wide variety of activities including running travel clinics, preparing large groups for international deployment, and traveling and living in a variety of countries under a wide range of conditions. Among the "Lessons Learned" include the following:

Clinicians providing advice for international travel need a wide variety of resources including both up-to-date information and a supportive infrastructure. First, they should be familiar with and facile with using the latest up-to-date electronic references, as described in the introductory article.[1] This may include *CDC Health Information for International Travel*, the "Yellow Book", which is available both on-line for free and in hard copy, as well as commonly utilized specialty-specific resources such as the American Academy of Pediatrics' *Report of the Committee on Infectious Disease,* the "Red Book".[2,3] These sources provide general recommendations but are organized by topic rather than by destination making them more useful as a general knowledge reference than a clinical tool. Recent improvements to the CDC website now include both patient- and provider-oriented destination-based tools that can be readily used in the office setting and address the most common travel medicine needs to include travel health and outbreak notices.[4] Subscription services like Shoreland's Travax[5] are updated on short notice for rapidly changing outbreaks of illness, as well as potential political, environmental, or other unexpected impediments; but involve significant expense. Other tools, such as Global TravEpiNet, a CDC funded consortium of travel health providers and travel epidemiology research platform, provides an open access clinical tool (available at http://gten.travel/prep/prep) that tailors recommendations based on certain medical or social/itinerary factors to rapidly provide destination specific recommendations and links to CDC references.[6] Second, travel medicine providers should either develop their own skills and expertise or have established relationships with expert advisers for the most unusual questions that frequently arise—travel to exotic locations with children often present unique questions that are not covered by published recommendations and may involve the application of experienced judgment. Also, advising families involves sorting the needs of a broad spectrum of age groups, which often requires collaboration between practitioners who focus more on children or adult travelers. Third, travelers need access to an array of immunizations not found in many pediatric or primary care clinics, including those against yellow fever, Japanese encephalitis, typhoid, and rabies, which require special storage, handling, and personnel experienced in their administration. In particular, yellow fever vaccine administration requires a provider to have completed the CDC Yellow Fever Vaccine Course (www.cdc.gov/travel-training) and be certified for the vaccine by their state department of health in order to receive the stamp recognized under International Health Regulations.[7] This stamp is required to document proof of yellow fever immunization or medical contraindication, which in turn may be required for international travel in several regions of

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the world. Fourth, a travel clinician has to collaborate with a pharmacy that is capable of supporting the needs of the pediatric traveler, which can include separating or compounding small doses of drugs, such as prophylactic anti-malarial medication for children, or which is comfortable with providing non-reconstituted antibiotics to be used as empiric therapy for illnesses such as traveler's diarrhea. Lastly, and most importantly from a practical standpoint, the experienced travel clinician has familiarity with the different detailed history and pre-travel planning that should be obtained, and is organized to accomplish this work over the modest period of time allowed in one office visit.

It can be difficult for a practitioner to provide "occasional travel advice," when preparing families for international travel. There are good reasons for travel medicine providers to work within an established higher volume travel clinic.

It is evident that we need more specific pediatric resources, and to encourage development of uniform pediatric practice guidelines. The recently formed (2010) "International Society of Travel Medicine Pediatric Interest Group (PedIG)" surveyed the background and practices of their members in 2014. The majority of those who participated were practitioners from pediatric (55%) or family medicine (19%) backgrounds, with 80% identifying themselves as physicians. However, only 37% had obtained the ASTMH Certificate in Travel Health. Of greater interest, this group reported very diverse practice backgrounds and training, and received a great range of answers to the survey's questions about application of common practices, which revealed a significant variability in application of widely accepted standards/guidelines.[8] Clearly there is room for improvement in development of consistent evidence-based guidelines for preparing children for travel.

While children are not necessarily "little adults," they do deserve the same level of advice and access to needed services even if pediatric-specific resources are not readily available for this vulnerable group.

The authors of a recent review remind us that the purpose of a visit is to "educate, motivate, and equip."[9] One of the more frustrating experiences challenging travel clinicians, as pointed out in the introductory article, involves the arrival of a person or family who show up a few days in advance of complex international travel or a permanent move to a region characterized by high risks and low resources.[1] As stated previously, many of the medications may require use of special preparation, advance ordering of larger amounts (for longer stays abroad) and instructions, that are more unusual and complicated—especially any potential "self-treatment." Some malaria prophylaxis medications need to be started weeks in advance of travel. Vaccine derived antibody titers require several weeks before offering peak protection and many of the immunizations, such as those preventing Japanese encephalitis or rabies, involve serial doses over weeks. The travel clinics should be structured and advertise to recommend a pre-travel visit 4–6 weeks in advance of any complex international travel, and even further ahead if patients are contemplating a move to a more remote site. A related issue, covered in detail in the preparation for travel article in this supplement, is that quality travel medicine providers must spend adequate time providing realistic anticipatory guidance, and may be teaching them detailed contingency planning including self-treatment plans for diarrheal disease or even non-specific febrile syndromes that could represent malaria, depending on the resources at the travel location.[10]

Preparing families for travel takes both sufficiently advanced planning and longer visits. Both are required to ensure the proper preventive measures to ensure a safe and rewarding travel experience or international move.

Travel medicine providers must recognize the inability to anticipate all risks. A recent Swiss study of the reliability of the pre-travel history in anticipating risks, when compared with an accurate post-travel survey, found that patients consistently underreported and underestimated the risks they might encounter during travel.[11] The most common underestimated risks involved staying in rural areas, exposures to animals,