Vaccinations for Peace of Mind: Travelling Abroad

Kenneth Gamble, MD

Keefer, 44, is an executive and will be leaving for Kenya in one month. He has been assigned to a two-year contract with a relief agency, headquartered in Nairobi. He also has responsibilities that will take him throughout Kenya and neighbouring countries, including Uganda and Sudan. He claims to be in good health, but noted that he is allergic to eggs. When applying for the various visas, one embassy official advised him that he would need to have proof of vaccination for yellow fever.

Patients often present to their primary care provider with a specific request based on information that they received from another source, in this case an embassy official. Their perception of risk is often unrealistic, ranging from the complacent to the hypervigilant. Some patients come with very specific notions, whereas, others may be completely open to any counsel that they may receive.

Consultations before travel provide an opportunity for updating the routine immunizations and to discuss other vaccine-preventable diseases.

Does Keefer really need a yellow fever vaccination?

Prudence dictates that you ask this question. First, Keefer noted a history of egg allergies. Immediate allergic reactions are rare (about 1:130,000) and occur mainly in persons with a history of egg allergies. However, most persons who claim that they have an egg allergy will continue to eat foods that have eggs among other ingredients; therefore, it is likely that they do not have a true allergy.

Taveller's vaccination check list
(Kenya)

- ☐ *Yellow fever*
- ☐ *Tetanus booster*
- ☐ *Recommended vaccines*
  - *-Hepatitis A*
  - *-Hepatitis B*
- ☐ *Typhoid fever*
- ☐ *Rabies*
- ☐ *Meningococcal ACYW135*
- ☐ *Cholera*

If there is any doubt, a test dose of 0.1 ml can be injected intradermally in a controlled setting.

Second, yellow fever is a live vaccine and in Keefer's age group the risk of a serious adverse event is at least 1:100,000. For patients older than 65 years, the risk rises to about 6:100,000 and 18:100,000 for patients aged 75 years or more. Persons with suppressed immunity, babies less than six months of age and those who have had a thymectomy should not be immunized.

If Keefer were to only reside in Nairobi and not travel to other regions he would not need a yellow fever vaccination for personal protection. Neither would he require proof of yellow fever vaccination because he will travel from a destination that is 150 degrees north of the equator. This would also apply to those living 150 degrees south of the equator. His assignment will take him to regions where yellow fever is endemic; therefore, Keefer will require a yellow fever vaccination for his protection and to meet the statutory obligations when crossing those borders.

What other vaccines should Keefer have?

Routine Immunizations:

A second **measles-mumps-rubella vaccination** is not required, because Keefer was born before 1970.

A **tetanus booster** should be encouraged if Keefer's last booster was more than five years ago, which is the standard for patients presenting in emergency situations with contaminated wounds. If the tetanus booster is required, he should be offered the acellular pertussis-tetanus-diphtheria combination, due to the resurgence of pertussis in the adult population.

Recommended Vaccines:

Hepatitis A is the most common of the more serious vaccine preventable diseases, affecting about 1:300 per month of risk with a 1% to 2% mortality rate for those presenting with clinical disease over the age of 40. Those who survive often experience protracted periods of disability. The vaccine is virtually 100% effective, confers lifelong immunity and can be administered right up to the time of departure.

Hepatitis B affects about 1:3,000 per month. This ratio may vary considerably, depending on other risk factors, which I refer to as the big five:

- Occupational exposure to blood and body fluids
- Body piercing
- Tattooing
- Non-monogomous sexual relationships
- Intravenous drug use.

In Keefer's case, he is travelling as a single male for a prolonged period of time and is at a greater than average risk, based on available data. The hepatitis vaccine confers lifelong immunity for the 95% to 97% who are responders. The accelerated schedule with administration of the combined hepatitis A and hepatitis B vaccine on days zero, seven and 21 is preferable, given the tight time constraints. The seroconversion rate is comparable to the normal schedule with administration on day zero, one month and six months. The guidelines call for a fourth dose of hepatitis B at one year for those who use the accelerated schedule, though that can be waived if there is proof of immunity.

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What other vaccines should be considered?

Typhoid fever is rare, with 77% of reported cases in the US among persons returning from visiting high-risk settings. Typhoid vaccination is reasonable, because Keefer is an expatriate with potential occupational risk and he will travel off of the normal tourist routes. Many patients are under the false impression that this vaccine will protect against all enteric infections; whereas, parental and oral vaccines confer 70% protection against *Salmonella* Typhi for two to three years and up to five years respectively.

Rabies should be considered because it is universally fatal. Primary prevention with personal protection measures is essential for all. Pre-exposure is expensive but should be considered for long-term travellers to countries where rabies immune globulin is in scarce supply or not available.

Meningococcal ACYW135 is strongly recommended for those living in Northern Kenya, Northern Uganda and Sudan. The endemic rate in the rest of Kenya and Uganda is still higher than it is in Canada. Cost will be a determinant for some and the protection rate from the polysaccharide vaccine is 80% to 90% for up to five years.

Cholera is very rare among all travellers, including expatriates; therefore, it is not routinely recommended. The only cholera vaccine sold in Canada will reduce the risk of traveller's diarrhea by about 15% for about three months; therefore, there is limited value for expatriates. The best references are available on-line. Dx

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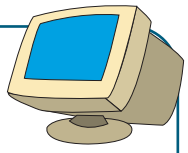

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