PASSPORT HEALTH®
First Class Medical Care For Travel Anywhere
Toll Free: 1-888-499-PASS (7277)

Vol. 12, No. 2 Fall 2002

Immunizing Travelers Against Polio — An Update

By: William H. Shoff, M.D., DTM&H, Susan Spinello, R.N., M.S., CRNP, and Suzanne M. Shepherd, M.D., M.S., DTM&H, Passport Health @ the University of Pennsylvania, Philadelphia, Pennsylvania

Until all children are protected from polio, all children are at risk, even in countries which have been polio-free for several years. – Polio News, May, 2002

Is polio being eradicated? Yes.
When will that be completed? ~ 2005.
Can polio immunization then be stopped in 2006? No.
Why? Three reasons:
After the last case of polio has been reported in a region, there must be at least a three-year period of no documented cases of polio in that region for it to be certified polio-free;
Reverted poliovirus from long-term excretors in the community after OPV immunization may lead to new cases of polio (details discussed below);
Polio immunization with IPV will need to be maintained in regions at high risk for bioterrorism in the future.
Can polio transmission re-appear in a region after being eradicated? Yes.
How? That is discussed below.
Should travelers to any developing countries be up-to-date on their polio immunization? Yes.
Why? That is discussed below.
Is polio a potential bioterrorism weapon? No. Too many people are immunized now. It will not make a good bioweapon. As for the future, any impact that it may have as a biological weapon will be negated by maintaining population immunity with IPV (http://www.polioeradication.org/all/background/_files/en/BiologicAgent.pdf).

Polio is being eradicated. Only 537 cases of polio were reported in the world in 2001. As of 2002, only 10 countries are endemic for polio [India, Pakistan, Afghanistan, Nigeria, and Niger with high intensity transmission; Somalia, Sudan, Ethiopia, Angola, and Egypt with low intensity transmission]. Europe was certified polio-free on June 21, 2002. In 1988 there were 350,000 cases of polio reported worldwide. In 2000, the number reported was <3,500. As soon as the "last" case of polio is reported around 2005 as projected by the Global Polio Eradication Initiative (http://www.polioeradication.org/index.asp), that region will have to be closely monitored for at least three years to be sure that polio is not being transmitted there.

Polio is a viral disease that occurs only in humans. Most infections (72%) are inapparent. Minor illness (fever, malaise, headache, sore throat, nausea, vomiting) occurs in 24% of cases. A nonparalytic illness (aseptic meningitis) occurs in 4% of cases, which in rare instances has associated transient mild muscle weakness or paralysis. Paralytic disease occurs in <1% cases. The disease is caused by wild poliovirus (any one of three types), circulating vaccine-derived poliovirus (cVDPV), or vaccine-associated paralytic poliomyelitis (VAPP). Infection by wild poliovirus is prevented by one of two vaccines: oral poliovirus vaccine (OPV), a live-virus vaccine, and inactivated poliovirus vaccine (IPV), a killed poliovirus vaccine. VAPP and cVDPV arise from OPV. They cannot arise from IPV, because that vaccine contains only a killed virus.

OPV has been the preferred vaccine during the Global Polio Eradication Initiative because it is inexpensive ($0.09 per dose), easier to administer (oral vs injection), and produces both systemic immunity (antibodies in the blood) and local/mucosal immunity (blocks entry of the poliovirus into the body from the intestines). IPV produces systemic immunity. Immunization with OPV, however, will result in VAPP once for every 2.5 – 3.3 million doses administered. VAPP is clinically equivalent to the paralytic disease caused by wild poliovirus. It is an inevitable consequence of the use of OPV. ▶ *2*

Meningococcal Disease – Is Not Just For Travel

By: Fran Lessans, R.N., B.S.N., M.S.
President Passport Health

Major outbreaks of meningococcal disease are regularly reported from Africa, India, Saudi Arabia, China and South America. Serogroup A is the most common cause of epidemics outside the United States, but Group B meningococcal meningitis has recently risen in Cuba, Brazil, Colombia, Chile and Argentina.

Meningococcal disease is not limited to travel. College dormitories housing large numbers of students in confined areas have seen first hand what havoc meningitis can do from panic to death. College students are at risk because they often engage in activities that are part of campus life, such as living in a crowded dormitory, going out to bars, drinking alcohol, smoking, and/or being around someone who smokes (passive smoking).

Since the infection is easily transmitted through the air via droplets of respiratory secretions, direct contact with infected persons puts a student at risk. Even students who live off campus are at risk because of close contact with other students during classes and activities. Since the early 1990's, the number of meningitis outbreaks has increased in the United States. In fact, between 1991 and 1997 the number of cases of meningococcal meningitis nearly doubled from 308 cases to 600 cases among young adults (15 to 24 years of age). New data from across the country continues to show that college-aged students, particularly freshman living on campus, have a significantly higher risk of getting meningococcal disease than young people living off campus. The bacterium causing meningitis is common and people often harbor it in their nasal passages and throats without effect. When it gets into the bloodstream and moves to the brain, it causes problems. The bacteria can be spread by simply sneezing or coughing. Kissing and sharing utensils, drinking glasses or cigarettes can also contribute to its onset. Yet despite that, the bacterium is not especially contagious, and very close contact is usually necessary to spread the disease. A few cases are outlined below.

Sally G. is an 18-year-old freshman who was living on campus, went to the student health center around 3:00 P.M. on October 18th with flu-like symptoms: headache, nausea, fever, pains in her arms and legs, and extreme fatigue. She was given oral penicillin and was sent home. On October 19th at 6:00 A.M. she was rushed to the hospital. By the time she arrived in the emergency room, her blood ▶ *3*

PASSPORT HEALTH®
First Class Medical Care For Travel Anywhere

845 East Fort Avenue • Baltimore, Maryland 21230
410-727-0556 • Fax: 410-727-0696 • Toll-Free: 1-888-499-PASS (7277)
www.passporthealthusa.com
Call our main number for an appointment at any of our locations which include:
Baltimore, Bel Air, Catonsville, Columbia, Severna Park/Millersville & Lutherville

Polio *continued from page 1*

The other OPV derived illness, cVDPV, has a more complex biology, but one that is relevant to travel medicine practice now. When people are immunized with OPV, about one-third of them will spread viruses that may have reverted (changed back to) in some way to the original wild poliovirus that can cause disease. This process is not a simple once-and-done. What happens is the virus spreads through many persons not immune to poliovirus and along the way, if the right mutations occur, the wild poliovirus emerges, and poliomyelitis cases appear in unimmunized persons. As might be expected this phenomenon is observed in areas where immunization rates are low and hygiene is poor, i.e. developing countries, facilitating the opportunity for the emergence of cVDPV. It is not surprising, then, that cVDPV has been reported in Egypt (32 cases) from 1983 to 1993, Haiti (8 cases) and the Dominican Republic (13 cases) in 2000, and the Philippines (3 cases) in 2001. The numbers denote confirmed cases. Given that there may be gaps in polio immunization coverage in developing countries and that OPV will continue to be the vaccine of choice in these countries until polio eradication is completed and certified as completed, there will continue to be an on-going risk that cases of cVDPV will occur again, the question is where and when.

After eradication is certified, there is the possibility that cVDPV could still arise. Some persons immunized with OPV are what is termed long-term excretors (rare), which means that they continue to spread virus derived from OPV to other persons, as noted in the previous paragraph, only they do it for >1 year (duration unknown). This scenario sets up the extremely rare possibility for the emergence of cVDPV, when and if the population immunity is not maintained by immunization, which will be done after eradication with IPV.

In two of the three instances of cVDPV reportings (Haiti/Dominican Republic and the Philippines), the countries were certified as polio-free, highlighting the potential for cVDPV to occur in "polio-free" venues, if the circumstances are right (http://www.polioeradication.org/all/global/default.asp). Clearly, this is a complex issue. The current CDC recommendation regarding travelers is that "Travelers to countries where polio is epidemic or still endemic should be fully immunized." (http://www.cdc.gov/travel/diseases/polio.htm) Fully immunized means having been primarily immunized (first time ever) with 3, preferably 4, doses of vaccine, usually as a child, and then as an adult (age > 18) receiving a one-time booster. Either OPV or IPV can be used in any combination to satisfy these immunization recommendations. In the United States the only polio vaccine currently available and licensed is IPV. It would seem judicious to extend the traveler recommendation to include any developing country, because it is not possible to predict where and when cVDPV might occur next. Additionally, the practice of giving a one-time adult polio booster with IPV in the United States to any traveler going to a developing country is inexpensive insurance against the unpredictable emergence of cVDPV.

Polio is not a good biological weapon because of its fragility (does not survive well in the environment), low incidence of paralytic disease (< 1%) and death (< 0.1%), and presence of an efficacious vaccine IPV, which can be used to maintain immunity after eradication.

Further Reading

http://www.polioeradication.org/all/background/future.asp see "core briefing on the polio endgame" at the bottom of the window for links to several excellent references on this issue.
Nathanson N, Fine P. Poliomyelitis eradication – a dangerous endgame. Science 2002;296:269-270.
Plotkin SA, Orenstein WA. Vaccines, 3rdEd. Philadelphia, W.B.Saunders. 1999.

Lost in the Translation

Cocktail lounge in Norway:
Ladies are requested not to have children in the bar.

Doctor's office, Rome:
Specialist in Women and other Diseases

Sign in men's restroom in Japan:
To stop leak turncock to the right.

In a Nairobi Restaurant:
Customers who find our waitresses rude ought to see the manager

Information booklet about using a hotel air conditioner in Japan:
Cools and heats: if you want just condition of warm air in your room, please control yourself.

On an Athi River highway:
Take Notice: When this sign is under water, this road is impassable

On a poster at Kencom:
Are you an adult that cannot read? If so, we can help.

Tokyo hotel's rules and regulations:
Guests are requested not to smoke or do other disgusting behaviors in bed

On the menu of a Swiss restaurant:
Our wines leave you nothing to hope for

In a Bangkok temple:
It is forbidden to enter a woman even a foreigner if dressed as a man.

Orthodox Monastery:
You are welcome to visit the cemetery where famous Russian and Soviet composers, artists and writers are buried daily except Thursday.

Tourist agency, Czechoslovakia:
Take one of our horse-driven city tours. We guarantee no miscarriages.

Advertisement for donkey rides, Thailand:
Would you like to ride on your own ass?

Airline ticket office, Copenhagen:
We take your bags and send them in all directions.

Reader Comments

Rachael Snead reports: "I took part in an expedition to Amazonian Peru to look for rain forest tarantulas. The 20% controlled release insect repellant is the best! Others in our expedition were bitten many times, despite repellents using a much higher concentration of DEET, but I didn't get a single mosquito bite! Several times I saw mosquitoes land on my skin, but they immediately flew off again without biting. I am in a position to say your product works very well and I appreciate it."

Mark McMullan recently returned from India. "Don't drive yourself, as there are no stop signs or traffic lights and accidents occur frequently. Drivers typically argue for a while and then proceed on. Totally wrecked cars are left on the side of the road. Do pre-arrange for an airport arrival pick-up, as taxi drivers often try to extort money from visitors; do buy beautiful fabrics and have clothes made, it is very reasonable and workmanship is excellent."

Dorothy Valakos spent two months touring India and Nepal. "It's a good idea to have a sterile syringe pack in case of a medical emergency and plenty of antiseptic towelettes. I would have been desperate without my towelettes. The gel hand wash isn't a good idea because it really doesn't remove dirt. It is also a good idea to bring a water purification system, as bottled water creates an environmental problem. Nepal is littered with plastic bottles. Both India and Nepal have no way of disposing of these non biodegradable plastics."

Keith Morgan was helping to build a church in Honduras when his friend Hal fell from a ladder and cut his arm. Keith a paramedic in the U.S. accompanied Hal to the hospital. "It's a good thing I was there. They were going to use previously used supplies on Hal. I had to watch them continuously. I turned by back for a few seconds and caught them trying to reuse a needle."

E.R. Martinez stayed in a five star hotel in India while on business. "If you have an early morning meeting, run the shower water for about 20 minutes before going to bed and again in the morning, as the water is black for about 15 to 20 minutes. It is also a good idea to have a surgical mask or scarf to cover your nose and mouth in areas of high pollution. This is also a good idea when going through customs in Australia, as travelers are sprayed with insecticide before access is granted. It doesn't matter where your have just come from."

Fernando Matta a native of Ecuador now living in the U.S. frequently travels to South America on business. "I didn't think I needed a Yellow Fever vaccine but was stopped by guards when I tried to get into Brazil recently. I bribed the guards with $200.00 to finish my business. Needless to say my shot records are now in order."

MENINGOCOCCAL DISEASE *continued from page 1*

pressure was 50/20 and she was going into shock. She was admitted to the ICU. Her kidneys failed and Sally became lethargic and comatose. A CAT scan revealed moderate cerebral swelling. The diagnosis of meningococcal meningitis was made following lumbar puncture. Appropriate antibiotics were started. A classic meningococcal rash appeared within a few hours on her arms and legs. She developed meningococcal septicemia, which subsequently caused gangrene in her feet and hands. To save her life, Sally needed amputation of the fingers on both her hands and bilateral below-the knee amputation. As a result of the cerebral swelling, Sally also suffers from hearing loss and speech problems.

Stephen D a college freshman thought he had a stomach bug, as he was throwing up. By day's end, the 19-year-old was in a coma and then spent almost four months in the hospital, surviving only after doctors amputated one foot and all his fingers and toes.

Lisa M an 18-year old college freshman woke up and thought she was getting the flu. As the day went on she felt worse and finally went to the emergency room. She had several seizures and went into shock. Lisa had severe brain swelling and gangrene, which was rapidly spreading to her arms and legs. To save Lisa's life, doctors had to amputate all four of her limbs. And as a result of the swelling of her brain, Lisa suffers from a loss of hearing and requires anticonvulsant medication to control her seizures.

Kevin P wasn't so lucky. The junior died less than 24 hours after the first symptom. Kevin's parents write: *We were in disbelief. Migraines run in our family, so we weren't that alarmed when Kevin said he had a headache. We told him to have a friend take him to the emergency room. We just can't sit back, we want parents to know. We will never be able to fill this hole in our hearts. My child could have been saved with a vaccine, My child's life is worth more than the cost of the vaccine.*

All four cases presented were caused by bacterial meningitis. While rare, it can sicken and kill with terrifying swiftness. College students are prime targets. The American College Health Association (ACHA), the Advisory Committee on Immunization Practices (ACIP), and the American Academy of Pediatrics (AAP) now recommends the Meningococcal vaccine for all college students living on campus and many states have made the vaccine mandatory. The ACIP, ACHA and AAP now jointly recommend that healthcare providers, colleges and public health agencies take responsibility for raising awareness about meningococcal disease and the benefits of vaccination and referral to a vaccination site. Fifteen states currently require incoming freshman to have proof of a meningococcal vaccination. They include Arkansas, California, Connecticut, Delaware, Florida, Illinois, Indiana, Maryland, New Jersey, Pennsylvania, South Carolina, Texas and Virginia.

Meningococcal disease is an acute bacterial disease characterized by sudden onset with fever, intense headache; nausea and often vomiting; stiff neck; and, frequently, a petechial rash with pink macules. The organism is transmitted from person to person through inhalation of aerosolized droplets of infected nasopharyngeal secretions. The clinical manifestations may vary from transient bacteremia to fulminant disease, causing death in a matter of hours.

Meningococcal meningitis is very dangerous because it is relatively rare and it is often mistaken for a minor cold or the flu and, as a result, is ignored. The bad news is that up to 1 out of 5 people who develop the disease will die. Of those who survive, up to 1 in 5 will suffer from permanent disabilities such as amputation, brain damage, hearing loss, and seizures.

Fortunately, there is a vaccine available for meningococcal disease. The vaccine was developed by the U.S. military and since 1971 has been given to all recruits. The number of cases in the military has fallen 90 percent since then. One formulation of meningococcal polysaccharide vaccine is currently available in the United States: quadrivalent A,C,Y, and W135. No vaccine is currently available against serogroup B. The quadrivalent vaccine appears to last at least 3 years. Revaccination after 2-3 years should be considered for children first vaccinated before 4 years of age who continue to be at high risk. Adverse reactions to meningococcal vaccine are infrequent and mild, consisting principally of localized erythema that lasts 1 to 2 days. Protective antibody levels may be achieved within 7 to 10 days after vaccination.

Further Reading:

Reintjes R, Kistemann T, MacLehose L, et al. *Detection and Response to a Meningococcal Disease Outbreak Following a Youth Football Tournament with Teams from Four European Countries,* International Journal of Hygiene and Environmental Health, May 2002, Vol. 205(4): 291-6.

Bruce M G, Rosenstein N E, Capparella J M, Shutt K A, Perkins M D, Collins M. *Risk Factors for Meningococcal Disease in College Students,* JAMA, August 8, 2001, Vol. 286(6):688-693.

Jodar L, Feavers I M, Salisbury D, Granoff D M, *Development of Vaccines against Meningococcal Disease,* The Lancet, April 27, 2002, Vol. 359(9316):1499-1508.

PASSPORT HEALTH

First Class Medical Care For Travel Anywhere

- Convenient locations with evening and weekend hours.
- Complete country specific travel counseling with briefing book.
- Yellow Fever immunization site.
- Pre-and post-travel medical care.
- Security briefings available.
- Full line of hard to find travel supplies including: repellents, water purification, mosquito netting, etc.

Call Us Toll-Free

1-888-499-(PASS) 7277

Or Check Out Our Web Site

www.passporthealthusa.com

Newsletter sponsored by an educational grant from:

Twinrix®

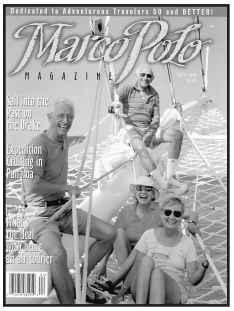
Hepatitis A Inactivated & Hepatitis B (Recombinant) Vaccine

VIVOTIF BERNA®

(Typhoid Vaccine Live Oral Ty21a)

BE®RNA ...We're known for making typhoid immunization ***PAINLESS***

Call for a FREE TRIAL ISSUE



The first and only magazine dedicated to adventure travelers over 50!

Call (800) 523-7274

and ask for your to free trial issue.

* Rated #1 by Kiplinger's Retirement Report

Locations in: Arizona • California • Colorado • Connecticut • Delaware • Florida • Georgia • Illinois • Iowa • Maryland • Michigan
New Jersey • New York • North Carolina • Ohio • Pennsylvania • Texas • Virginia • Washington, D.C.

PASSPORT HEALTH®
First Class Medical Care For Travel Anywhere
845 East Fort Avenue
Baltimore, Maryland 21230

FLU SHOTS NOW AVAILABLE

PRESORT STD
US POSTAGE
PAID
Baltimore, MD
Permit No. 6925

Return Service Requested

Travel Questions

Have a travel question?
You can call: **410-727-0556**
Toll-Free: 1-888-499-PASS (7277)
or fax your question to: **410-727-0696**
or write to:
Fran Lessans, R.N., B.S.N., M.S.
Passport Health
845 East Fort Avenue
Baltimore, Maryland 21230

Q. I have heard you can contract a Sleeping Sickness in Africa. Can you tell me more about this disease and is there a vaccine?

A. There is no vaccine for Sleeping Sickness. It is a potential hazard in tropical Africa, particularly in the game parks of East Africa and northern Botswana, where wild animals are a reservoir of infection transmitted by the large tsetse fly. Only a handful of cases of sleeping sickness have occurred in American travelers. Wearing long shirts and trousers may decrease the risk of bites. Repellents are a must.

Q. I have heard a lot about Dengue Fever in the Caribbean lately. Is it a newly discovered disease?

A. Although we have seen a lot more Dengue in recent years, a clinically compatible disease was first described during an epidemic in Philadelphia in 1780. We believe Dengue crossed from East Africa to the Caribbean in 1827. Dengue is transmitted by the aedes mosquito, is a day time biter and we currently have no vaccine available. Appropriate use of repellents will prevent bites—and Dengue Fever!

Q. While browsing the Internet, I have noticed a wealth of information on travel medicine. Is the Internet a good source?

A. *Caveat lector et viewor*—Let the reader and viewer beware! There is so much information available; it is difficult to know whether it is of high quality peer-reviewed or from healers, quacks and cranks. A lack of professional editing and proofreading can have potentially harmful results. It is always important to consult with specialists in the field of travel medicine before using remedies suggested on the Internet.

Q. I am going on to South Africa and several nature reserves. I have heard that wild animals have attacked tourists. Is there any truth to this and is there anything I should or shouldn't do?

A. Attacks on tourists by wild mammals in South Africa are an uncommon cause of injury and death. However there have been incidents where tourists were killed by wild animals. In almost all cases, tourists didn't heed warning signs. Never leave your vehicle to take pictures near wild animals, camp in open tents or walk in long grass.

Q. I am considering renting a world access cell phone. Will I be able to use it everywhere?

A. No. Phoning while driving is illegal in Israel, Brazil, the U.K., and Switzerland. In Singapore, they'll even confiscate the phone. Phones are banned on commuter trains in Japan, and some cars on the U.K.'s Chiltern Railways have coated windows that block cellular radio waves. Switzerland, ever neutral, has the perfect compromise: a separate car for phone users. Fines for chatting while driving range from 34 cents in Nepal to $1,000 in Poland. If you don't have the $600 fine in Singapore, you could spend up to a year in jail. You may not be able to use the cell phone in very remote areas.

Q. I am planning two brief business trips to China over the next year and then taking 3 months off to camp across America. Since I am staying in 5 star hotels in China do I need to take the Typhoid vaccine?

A. Yes. You can pick up Typhoid almost anywhere, even in 5 star hotel restaurants. Your camping trip could also put you at risk. Americans may be startled to learn that Salmonella causes 66% of food-borne illness in the U.S. Eating out more frequently, choosing convenience or prepared foods, and expecting novelty and year-round availability all play a role in exposure.

Q. I am traveling to Asia in the spring, will I need a DPT booster?

A. If you haven't had a tetanus diphtheria booster in five to ten years you will need a booster prior to travel. This will eliminate the need for a tetanus shot in country if you have a break in the skin. Diphtheria is usually given with tetanus and should be taken, as there is still diphtheria in much of the world. Pertussis or whopping cough was thought to be history--but the dangerous germ that can leave sufferers gasping for air is making a comeback. Apparently the whopping cough vaccinations Americans get as babies eventually can wear off. A study is currently underway to bring the Pertussis booster back for adults.