

St. Norbert College
Health and Wellness Services

International Travel Guide

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Information from www.cdc.gov
and www.mdtravelhealth.com

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RECOMMENDATIONS FOR SAFE FOOD AND WATER CONSUMPTION:

- 1) Drink beverages only made with boiled water, i.e. tea, coffee. To kill bacteria and parasites boil water vigorously for 1 minute, for viruses boil water for an additional 3 minutes. Cool to room temperature.
- 2) Drink canned or bottled carbonated drinks in sealed containers. If the outside of containers are wet dry them off before opening.
- 3) Never have ice with your drink, or use containers that had ice in them.
- 4) Never wash drinking or eating utensils with non-boiled water.
- 5) Never brush your teeth with non-boiled or unbottled water.
- 6) All raw foods are subject to contamination. Avoid salads, uncooked vegetables, unpasteurized milk, milk products, and undercooked or raw meat, fish, or shellfish.
- 7) Eat only foods that have been cooked and are still hot, or fruits that have been peeled by the traveler. Do not wash fruits with water that has not been boiled.
- 8) Use chlorine or iodine tablets to purify water. Iodine tablets contain 8 mg of iodine. Use 4 mg or 1/2 tablet in 1 quart of water. (Iodine is not recommended for persons with thyroid disease, pregnancy, or known iodine allergy). Water that is cloudy should be strained through a clean cloth to remove sediment before being treated. If water remains cloudy, double the number of tablets used to purify. It is not a reliable way to kill *cytospordium* unless the water is allowed to sit for 15 hours before consumption. Chlorine purification: follow instructions on chlorine product and is intended for short term use only.

Animal Hazards

In general animals have a tendency to avoid humans. They can attack and are more likely to when protecting their young or their territory. You should never pet, handle or feed domestic dogs, cats, and other mammals where rabies is endemic. Avoid contact with wild animals. Most of the injuries reported from wild animals are associated with attempting to feed, handle or pet them.

Poisonous snakes are a concern in many areas. Some dangerous snakes to avoid are: the Australian brown snake, Russell's viper and cobras (Southern Asia), coral snakes and rattlesnakes (the America's), and carpet vipers (Middle East). Do not try to handle or harass snakes, they will bite to defend itself. It is dangerous to try to kill snakes. The venom is more concentrated in smaller or immature snake than in larger one. If a traveler is bitten and the skin is broken medical attention should be sought. Immobilize the limb that was bitten and apply a pressure bandage (not a tourniquet) and move as quickly as possible to a medical facility. Snakes are more likely to be active in warm weather and at night. It is recommended that boots and long pants be worn when walking outside in areas inhabited by venomous snakes.

Stings from scorpions are painful but seldom dangerous to adults. They can be avoided by sleeping under mosquito nets and by shaking out clothes and shoes before dressing.

Insect and Arthropod Precautions

Use an insect repellent on exposed skin to repel mosquitoes, ticks, fleas and other arthropods. EPA-registered repellents include products containing DEET (N,N-diethylmetatoluamide) and picaridin (KBR 3023). DEET concentrations of 30% to 50% are effective for several hours. Picaridin, available at 7% and 15 % concentrations, needs more frequent application. DEET formulations as high as 50% are recommended for both adults and children over 2 months of age. Protect infants less than 2 months of age by using a carrier draped with mosquito netting with an elastic edge for a tight fit.

When using sunscreen, apply sunscreen first and then repellent. Repellent should be washed off at the end of the day before going to bed.

Wear long-sleeved shirts which should be tucked in, long pants, and hats to cover exposed skin. When you visit areas with ticks and fleas, wear boots, not sandals, and tuck pants into socks.

Inspect your body and clothing for ticks during outdoor activity and at the end of the day. Wear light-colored or white clothing so ticks can be more easily seen. Removing ticks right away can prevent some infections.

Apply permethrin-containing (e.g., Permanone) or other insect repellents to clothing, shoes, tents, mosquito nets, and other gear for greater protection. Permethrin is not labeled for use directly on skin. Most repellent is generally removed from clothing and gear by a single washing, but permethrin-treated clothing is effective for up to 5 washings.

Be aware that mosquitoes that transmit malaria are most active during twilight periods (dawn and dusk or in the evening). Stay in air-conditioned or well-screened housing, and/ or sleep under an insecticide treated bed net. Bed nets should be tucked under mattresses and can be sprayed with a repellent if not already treated with an insecticide. Daytime biters include mosquitoes that transmit dengue and chikungunya viruses and sand flies that transmit leishmaniasis.

Diseases

AFRICAN TRYPANOSOMIASIS (African Sleeping Sickness)

Description: a disease caused by the parasite *Trypanosoma brucei*.

Transmission: It is transmitted through the bite of a tsetse fly (a gray-brown insect the approximate size of a honeybee).

Area of Risk: tropical Africa from north of South Africa to south of Libya, Egypt and Algeria. The tsetse flies live in woodlands and thickets and in dense vegetation along streams. In recent years there has been an increase in the number of cases reported, primarily to East African game parks.

Signs and Symptoms: fever, rash, swelling in extremities, and skin lesions. As the infection progresses generally within 1-3 weeks, meningoencephalitis symptoms will appear, which could include severe headache, stiff neck, confusion, fever, convulsions or coma. If untreated can be fatal.

Treatment: If ill with high fever or other symptoms seek medical care early. It can be cured by a course of anti-trypanosomal therapy (Pentamidine isethionate and suramin for early symptoms and Melarsoprol for late disease treatment).

Prevention: No vaccine is available. Tsetse flies are not affected by insect repellants. They can bite through lightweight clothing and are attracted to dark, contrasting colors and moving vehicles. Avoid areas of heavy infestations, these areas are usually well known to the locals. Wear medium-weight, neutral colored that blend in to the environments clothing that cover to wrist and ankle.

AMEBIASIS

Description: Is a protozoan parasitic infection caused by *Entamoeba histolytica*.

Areas of Risk: Worldwide, very common in regions with poor sanitation in developing countries, particularly the tropics. Most infections occur in Africa, Asia, and Central and South America.

Transmission: It is passed by fecal-oral route by eating or drinking contaminated food or water, person to person contact.

Signs and Symptoms: Infected individuals may not have symptoms. The incubation usually in 2-4 weeks but can be delayed for years. This parasitic infection usually affects the intestinal tract but occasionally spreads to other organs. *E. histolytica* rarely invades the liver and forms an abscess. Even less commonly, it spreads to other parts of the body, such as the lungs or brain. The most common symptom is diarrhea that can worsen into bloody, painful bowel movements. Fever can accompany diarrhea.

Treatment: Seek medical care. Different medications would be used in treatment depending on the severity of the disease.

Prevention: No vaccine available. Follow safe food and water precautions as well as using safe sex practice to reduce oral-fecal transmission.

ANGIOSTRONGYLIASIS

Description: Is a parasitic considered to be the most common cause of eosinophilic meningitis in humans.

Areas of Risk: Most cases occur in Asia and the Pacific Basin (e.g., parts of Thailand, Taiwan, mainland china, the Hawaiian Islands, and other Pacific Islands). Cases have been reported in many other parts of the world, including the Caribbean.

Transmission: Ingesting (third-stage larvae) raw or undercooked snails or slugs, or contaminated raw produce (e.g., lettuce or vegetable juice). Also through ingesting raw or undercooked freshwater shrimp or prawns, crabs, and frogs).

Signs and Symptoms: Headache, photophobia, stiff neck, nausea, vomiting, fatigue, and body aches. Abnormal (tingling or painful feelings) skin sensations.

Treatment: Seek medical care

Prevention: Avoid eating raw/undercooked snails, slugs, and other hosts. Follow precautions when eating raw produce. Wear gloves (and wash hands) if handling snails or slugs.

ANTHRAX

Description: A disease caused by *Bacillus anthracis*, a spore bacterium. It can be cutaneous (skin), inhaled (lung), or gastrointestinal (digestive).

Area of Risk: Is found globally in developing countries without veterinarian health programs. It is found in certain developing regions in Southern and Eastern Europe, Asia, south and Central America, Africa, the Middle East, and the Caribbean.

Transmission: it is possible to acquire anthrax through direct or indirect contact with carcasses of animals that died from anthrax. Mechanically be transmitted through biting flies who have fed off these carcasses. Cases of cutaneous and inhalation anthrax have been reported among individuals who have made, handled or played contaminated goatskin drums from Haiti or West Africa.

Signs and Symptoms: In cutaneous anthrax, itching is followed by a lesion, vesicle, and depressed black eschar. Inhaled anthrax symptoms are mild and non-specific. They may include fever, malaise, and a mild cough or chest pain. Ingested anthrax is difficult to recognize but may include abdominal distress followed by fever, septicemia, and death.

Treatment: If contact is suspected, seek medical attention for antibiotic treatment. Avoid areas where the hides and hairs of animals are kept (especially goats).

Prevention: Avoid contact with potentially unvaccinated livestock or animal products. Eat only meat that has been properly slaughtered and cooked. Vaccine is available for use in humans. Vaccine should be considered for: 1) persons who work directly with the organism in a laboratory setting 2) those working with imported animal hides or furs in areas with substandard regulations 3) those who handle potentially infected animal products and 4) military personnel deployed to areas of high risk.

AVIAN INFLUENZA A (H5N1) VIRUS

Description: Avian influenza is a viral influenza strain carried by poultry and birds. It can cause serious disease and death. The Avian flu virus does not commonly infect humans but there have been several cases reported since 1997.

Area of Risk: Asia, Africa, Eastern Europe, and the Middle East.

Transmission: The virus is spread through direct contact with saliva, feces, blood, uncooked meat or nasal secretions of infected birds. It can be contracted through surfaces contaminated by infected feces or secretions. Fecal-to-oral transmission is most common. It may also be spread environmentally by ingestion of contaminated water while swimming or through the widespread use of poultry feces as a fertilizer.

Signs and Symptoms: Symptoms may vary from: sore throat, cough, difficulty breathing, fever, muscle aches to eye infections. Early in the course of the illness diarrhea, vomiting abdominal pain, bleeding from gums and nose have been reported.

Treatment: It is important to monitor your health for 10 days following your travel. Seek medical attention if you develop any illness during this 10 day period. It is important that you inform your health care provider of your present symptoms, if you had direct contact with poultry or birds, and the area in which you traveled. Several different antiviral medications can be used for treatment unfortunately some of these strains have developed a resistance to these drugs. An inactivated vaccine for avian influenza is currently undergoing human clinical trials.

Prevention: Avoid undercooked or raw poultry or poultry products, direct contact with poultry or birds especially in known infected countries. Eat only thoroughly cooked poultry meat. Avoid all eggs and blood. Washing hands carefully and frequently.

BABESIOSIS

Description: A rare illness caused by a parasite that is found in deer ticks

Area of Risk: Worldwide. France, Yugoslavia, United Kingdom, Ireland, United States, and other European countries.

Transmission: It is transmitted through the bite of an infected tick.

Signs and Symptoms: The incubation period is 5-33 days. High fever (as high as 104° F.), chills, weakness, headache, fatigue, and decreased appetite. Some individuals will show no symptoms and others will become seriously ill and possibly die

Treatment: Seek medical attention. Antibiotics are used in treatment.

Prevention: Avoid tick infested areas. Use DEET or permethrin on clothing. Check for ticks and remove them promptly with a tweezers. To remove with tweezers place them close to the skin and avoid leaving mouth parts in the skin. Do not crush the body of the tick.

BARTONELLOSIS (Cat Scratch Disease, Oroya fever, and Trench fever)

Description: an infectious disease caused by the *bartonella* bacteria.

Areas of Risk: Worldwide. Outbreaks have occurred in the Andes Mountains.

Transmission: By being bitten or scratched by an infected domestic or feral cat or exposure to infected cat saliva in the eyes or through broken skin/open wound. Oroya Fever can be transmitted from the bite of an infected sand fly. Trench fever is transmitted by human body lice and is more commonly associated with homeless populations or areas of high population density/poor sanitation.

Signs and Symptoms: The first symptom may be a localized infection at the site of exposure appearing red/swollen with a pustule. Enlarged lymph nodes usually near the site of infection which will appear within days or up to weeks after exposure. Oroya Fever symptoms include fever, body aches, headache and anemia. Symptoms of Trench fever are fever, headache, a transient rash, and bone pain, mainly in the shins, neck and back.

Treatment: Seek medical care.

Prevention: Avoiding contact with cats. If contact is unavoidable, thoroughly wash hands after handling animals and try to minimize risks of being bitten or scratched or have contact with cat saliva. Reduce risk of Oroya fever by using insect repellants and avoid being outdoors when sand flies are most active at dusk and dawn. Trench fever prevention is aimed at avoiding exposure to human body lice.

BLASTOMYCOSIS

Description: Blastomycosis is disease caused by a fungus,

Areas of Risk: *Blastomyces dermatitidis*, which is found in parts of the south-central, south-eastern and mid-western United States. Microfoci are also found in Central and South America and parts of Africa. The fungus can be found in moist soil enriched with decomposing organic debris. There is a risk to individuals living or visiting in areas with endemic disease with exposures to wooded sites (e.g., farmers, forestry workers, hunters, and campers).

Transmission: The infection is spread by inhalation of airborne conidia (spores) after disturbance of contaminated soil. Blastomycosis is not known to be transmitted from person to person.

Signs and Symptoms: Symptomatic infection (50% of cases) usually presents as a flu-like illness with fever, chills, productive cough, myalgia, arthralgia and pleuritic chest pain. Some patients fail to recover and develop chronic pulmonary infection or widespread disseminated infection (affecting the skin, bones and genitourinary tract in particular). Blastomycosis can also occasionally affect the central nervous system, resulting in meningitis. Symptoms may appear between 3 and 15 weeks after exposure.

Treatment: Blastomycosis requires treatment with antifungal drugs that must be prescribed by your doctor. Untreated infection can lead to complications and death. For persons with mild or moderately severe disease, itraconazole may be used for treatment. For persons who are seriously ill, who have central nervous system infection, and/or who are immunocompromised, treatment should be initiated with amphotericin B. Newer triazole antifungal drugs such as voriconazole and posaconazole appear to have activity against the fungus, but their role in treating blastomycosis has not yet been determined.

Prevention: In endemic regions, it may not be possible to completely avoid exposure to the fungus. However, those who are immunocompromised may consider avoiding wooded areas where the fungus is prevalent.

BOVINE SPONGIFORM ENCEPHALOPATHY AND VARIANT CREUTZFELDT-JAKOB DISEASE

Description: Cattle strain found also in goats and sheep is Bovine Spongiform Encephalopathy (BSE or “mad cow disease”). Human strain is Creutzfeldt-Jakob disease (vCJD). It is a fatal brain disease with incubation periods measured in years.

Areas of Risk: vCJD cases have been reported in the United Kingdom (147), France (7), Ireland (1), Italy (1), and the United States (1) from 1995-8/2004. BSE in cattle have been reported many European countries with highest rates in the United Kingdom and Portugal.

Transmission: vCJD is acquired by eating beef and beef products from cattle with BSE. With the compliance’s and effectiveness of public health measures the current risk is approximately 1 case per 10 billion servings. It can also be transmitted through blood transfusions and a person may be deferred from donating blood if they have lived in Europe from 1980-1996.

Signs and Symptoms: Confusion, visual disturbances, jerking movement, unsteadiness, and paralysis.

Treatment: No vaccine is available. No effective treatment is presently available. It is invariably fatal.

Prevention: Avoid consuming beef and beef products. Selecting solid pieces of beef muscle meat rather than brain or ground meats such as sausages or burgers may reduce chances of exposure to BSE contaminated beef products. It is *not believed* to be transmitted through milk or milk products.

BRUCELLOSIS

Description: Is an infectious bacterial disease. The sources of infection and the responsible organism vary according to geographic area. It is predominantly an occupational disease of those working with infected animals or their tissues, especially farm workers, veterinarians and more frequent among males. Sporadic cases and outbreaks occur among consumers of non-pasteurized milk and milk products (especially cheese) from cows, sheep and goats.

Areas of Risk: Brucellosis occurs worldwide, especially in Mediterranean basin, Eastern Europe, Africa, Asia, Central and South America, and Middle East.

Transmission: Consuming unpasteurized milk or goat cheese and other dairy products in countries where it is endemic or enzootic. Individuals exposed to contaminated fluids and tissue during slaughter and dressing of infected animals. Exposure can also occur during preparation or consumption of undercooked contaminated meat.

Signs and symptoms: Continued, intermittent or irregular fever of variable duration, headache, weakness, profuse sweating, chills, arthralgia, depression, weight loss and generalized aching.

Treatment: Seek medical treatment if symptoms persist

Prevention: Do not drink untreated milk or eat products made from non-pasteurized or otherwise untreated milk. Exercise care in handling and in the disposal of contaminated meat sources.

BURULI ULCER

Description: It is a disease caused by the bacteria *Mycobacterium ulcerans*. It destroys skin, underlying tissue and bones. It can cause disfigurements and deformities. It affects children, ages 2-14, more often than adults.

Area of Risk: Marshy, tropical and subtropical regions of Africa, Asia. Latin America, Western Pacific Angola, Australia, Benin, Bolivia, Burkina Faso, Cameroon, China, Congo, Cote d'Ivoire, Democratic Republic of Congo, Guinea, French Guyana, Gabon, Ghana, India, Indonesia, Japan, Liberia, Malaysia, Mexico, Papua New Guinea, Peru, Sierra Leone, Sri Lanka, Sudan, Suriname, Togo and Uganda.

Transmission: Not much is known about the exact mode of transmission other than it is mostly likely an environmental exposure through contaminated water or soil. Insect vectors could also be the cause. Most cases reported had indicated skin trauma or abrasions prior to onset of symptoms. Incubation period is thought to be less than 3 months.

Signs and Symptoms: Onset with a painless swelling or nodule on skin most are found on extremities. *Mycobacterium ulcerans* releases a toxin that destroys skin, tissue and bone, leaving extensive scarring and disfigurement. It may also suppress the immune system. Systemic symptoms are rare but could include weight loss, fevers, and bacterial super-infections.

Treatment: Seek medical treatment if symptoms persist

Prevention: There is not a vaccine available. Avoid high-risk areas.

CAMPYLOBACTER ENTERITIS

Description: An infection caused by bacteria.

Areas of Risk: Campylobacter is a leading cause of bacterial diarrheal disease worldwide.

Transmission: consuming contaminated food (esp. undercooked/raw chicken or foods contaminated by raw chicken), water, or unpasteurized milk. It is also spread by contact with animals particularly farm animals.

Signs and Symptoms: Diarrhea (frequently bloody), abdominal pain, fever, nausea and vomiting.

Treatment: Could include rehydration, illness is usually self-limiting (and last up to a week), and antibiotic therapy

Prevention: Avoid ingestion of foods at high risk for contamination, practice water precautions, and have antibiotic preventive (if at high risk) or treatment available to take

CHAGAS DISEASE (Trypanosomiasis)

Description: A disease caused by the protozoan parasite *Trypanosoma cruzi*.

Areas of Risk: American Trypanosomiasis is endemic in Mexico, Central America, and South America. Rare cases have been reported in the United States.

Transmission: It is a parasite usually transmitted by contact with feces of an infected "kissing" or "cone nose" triatomine bug. These bugs infest poorly constructed buildings with cracks in the walls and roof, especially as the destruction of natural habitats in forested areas continues to occur. Dogs and other animals can transmit the disease through feces and foods that may have been contaminated with animal excrement. It can also be transmitted through organ transplants, blood transfusions and transplacental infection.

Signs and Symptoms: The acute infection may go undetected, however, fever, and local swelling at the site of the contact, especially around the eyes causing periophthalmic cellulitis. Symptoms may also include meningoencephalitis and/or myocarditis. If undiagnosed, it will go to chronic infection and organ infiltration.

Treatment: Seek medical attention if infection is suspected. Anti-trypanosomal treatment would include benznidazole or nifurtimox. An infectious disease/tropical medicine specialist should be consulted.

Prevention: Avoid overnight stays in infested dwellings. If overnight stays are necessary, use insecticide sprays in the house and mosquito netting while sleeping. Be aware of how and where food is prepared. No vaccine is available.

CHIKUNGUNYA

Description: An infection caused by the chikungunya virus.

Areas of Risk: Many countries in Africa, Asia, surrounding the Indian Ocean, limited in Italy

Transmission: Spread via the bite of an infected mosquito of the *Aedes* spp., blood-borne transmission is possible.

Signs and Symptoms: 3-25% of infected individuals will not have symptoms. Symptoms when present would include sudden onset of high fever (>102 F.), severe joint pain, rash, headache, fatigue, nausea, vomiting, and myalgias.

Treatment: treat symptoms with rest, fluids, and use of analgesics and fever reducers.

CHOLERA

Description: It is an acute intestinal infection which is usually mild and self-limited.

Areas of Risk: Cholera occurs in many countries of the world and may occur anywhere that sanitary conditions deteriorate. It remains endemic in much of Africa and South and Southeast Asia.

Transmission: It is transmitted by ingesting contaminated food /water. It may be found in seafood beds and transmitted by eating raw or undercooked seafood.

Signs and symptoms: Sudden onset of profuse, watery stools, occasional vomiting, rapid dehydration, and severe circulatory collapse. In severe, untreated cases, death may occur quickly.

Treatment: Re-hydration and antimicrobial agents for the specific strain are indicated in moderately severe strains.

Prevention: Cholera vaccine is not available in the United States. It is not recommended by the CDC, due to its brief and incomplete immunity.

Follow the recommendations for safe food and water consumption.

CIGUATERA FISH POISONING

Description: Ciguatera Fish Poisoning is caused by ciguatoxin found in coral reef fish.

Area of Risk: It is most prevalent in fish of the Caribbean Sea and Pacific and Indian Oceans.

Transmission: Ingesting fish infected with the ciguatoxin. Freezing and cooking do not change the toxin.

Signs and Symptoms: Abdominal pain, nausea, vomiting, diarrhea followed by weakness, dysesthesias (numbness and tingling sensation), taste disturbance, diarrhea, nausea and vomiting, abdominal cramping.

Treatment: Seek medical attention if symptoms develop.

Prevention: Do not eat or limit the amount of coral reef fish eaten. Fish especially high in ciguatoxin include: Barracuda, Jack, Grouper, Sea Bass, Moray Eel, although there are nearly 50 species that can cause disease. Parts of the fish with highest concentration of this toxin include the head, guts, and liver. The flesh of the barracuda contains the most toxins. Be especially wary of roe or soups made with these parts of the fish.

CLONORCHIASIS & OPISTHORCHIASIS

Description: Both are a type of liver fluke one *Clonorchis sinensis* and the *Opisthorchis*.

Areas of Risk: Laos, China, Korea, Thailand, Hong Kong, Japan, Vietnam, Taiwan

Transmission: Ingestion of imported, undercooked, salted, smoked or pickled infected fresh water fish or shell fish. The flukes migrate to the biliary ducts.

Signs and Symptoms: Abdominal pain, nausea, vomiting, diarrhea followed by weakness, dysesthesias (numbness and tingling sensation), taste disturbance, diarrhea, nausea and vomiting, abdominal cramping. Most individuals have no symptoms. Symptoms may include: low grade fever, malaise, diarrhea, nausea, upper mid to right sided abdominal pain, jaundice, and enlarged liver.

Treatment: Seek medical care. Medications such as Praziquantel or Albendazole could be used in treatment.

Prevention: Eat only well-cooked fish.

COCCIDIOIDOMYCOSIS

Description: Is also referred to as “Valley Fever” it is caused by a fungus found in the soil.

Areas of Risk: Areas in the Americas with warm/hot climates with yearly rainfall of 5-20 inches. The U.S. states include: Arizona, New Mexico, Southern California, Western Texas, and parts of Utah. Outside the U.S. it is endemic in parts of Argentina, Columbia, Brazil, Honduras, Guatemala, Nicaragua, Venezuela, Paraguay, and Mexico.

Transmission: It is acquired through inhalation of fungal spores from dust generated by natural disasters or human activities. Those working in outdoor activities such as construction, landscaping, mining, farming, excavation, recreational activities, and military maneuvers are at higher risk. Natural disasters like earthquakes and dust storms/ windstorms increase risk of exposure.

Signs and Symptoms: The incubation period is 7-21 days. Sixty percent of the cases are asymptomatic. Those who do have symptoms are usually self limiting and would include fever, headache, muscle aches, rash, dry cough, weight loss, and malaise. In rare cases severe lung disease will develop those that develop severe illness are the elderly and persons with chronic health conditions.

Treatment: Treatment is usually not needed as the disease is self-limiting. Anti-fungal medications such as Fluconazole would be used for 3-6 months or longer to treat severe disease. An infectious disease specialist should be consulted.

Prevention: Complete prevention is impossible. To decrease risks limit outdoor dust exposure in endemic areas by controlling dust by wetting down the soil, and wearing well-fitting dust masks. No vaccine is available.

CRIMEAN-CONGO HEMORRHAGIC FEVER

Description: Is a viral hemorrhagic fever.

Areas of Risk: Is endemic in many countries in Africa, Eastern Europe, Middle East and Asia. In 2001 cases or outbreaks were reported in Albania, Iran, Pakistan, Kosovo, and South Africa.

Transmission: People can become infected with the virus by direct contact with blood or infected tissues from livestock or from a tick bite. The majority of the cases reported involved individuals working in the livestock industry.

Signs and symptoms: The incubation period can vary depending on the mode of acquisition. If infected from a tick bite the incubation period is 1-3 days, with a possible maximum time of 9 days. Those contracted through infected blood or tissue the incubation period is 5-6 days with a possible maximum time of 13 days. Onset of symptoms is usually sudden, with fever, lethargy, headache, dizziness, neck pain and stiffness, and abdominal pain. Nausea and vomiting, diarrhea and sore throat may occur early in the illness. The symptoms may progress over the next few days. These could include, mood swings, aggressive behavior, and confusion followed within a few days by sleepiness, depression and upper right sided abdominal pain. A petechial rash (a rash caused by the small blood vessels bleeding under the skin) or larger bruises may occur anywhere on the body. The information document published by WHO (World Health Organization) stated that Crimean-Congo Hemorrhagic Fever may have a mortality rate of 30%.

Treatment: If you develop symptoms it is important to seek medical care.

Prevention: Presently there is not a safe and effective vaccine available for use in humans. While living in endemic areas use personal protective measures. These would include avoiding areas where abundant tick vectors have been found. Especially in the Fall and Spring when they are active. Follow tick precautions such as, examining clothing and skin for ticks, and use repellents. Dress appropriately by wearing light colored clothing, a hat or head covering, long sleeves and have pants tucked into socks. Remove ticks immediately.

CRYPTOSPORIDIOSIS

Description: Is a parasitic infection caused by *Cryptosporidium parvum* or other similar species.

Areas of Risk: This disease occurs worldwide. The risk would be greater for travelers going to resource-poor countries. Outbreaks have been reported in North America, Europe, Latin America, Australia, and Asia.

Transmission: Transmission is through ingestion of fecal contaminated water or food. It would include water swallowed when swimming, from person to person via fecal-oral route (caring for an infected person, changing diapers, or certain sexual behaviors), or exposure of contaminated environmental surfaces.

Signs and Symptoms: Abdominal cramping, watery diarrhea, fever, and vomiting. The symptoms usually last 6-10 days or could last several weeks. It can be chronic or fatal to those individuals with severely weakened immune systems.

Treatment: A medication suspension of Nitaxozanide is used. Consulting an infectious disease specialist is recommended.

Prevention: No vaccine is available. Follow safe food and water precautions. Cryptosporidiosis is not likely to be inactivated by chlorine or iodine disinfection. Treat water by filtration with an absolute 1-micron filter or by boiling.

CYCLOSPORIASIS

Description: Is a gastrointestinal infection caused by a protozoan parasite.

Areas of Risk: It can be contracted worldwide. In North America outbreaks have been associated with various imported fresh produce. Cyclosporiasis is most common in tropical or subtropical regions of the world.

Transmission: Transmission is through ingestion of contaminated water or food. Person to person transmission is unlikely.

Signs and Symptoms: An infected person may not have any symptoms or could have loss of appetite, watery diarrhea, bloating, weight loss, stomach cramping, nausea, vomiting, muscle aches, fatigue and low-grade fever. Untreated illness can last weeks or months.

Treatment: The medication of choice is trimethoprim-sulfamethoxazole. It is advised to consult an infectious disease specialist.

Prevention: No vaccine is available. There is an increase risk to traveler's going to poor-resource countries. Risks also vary according to seasons.

CYSTICEROSIS

Description: Is a parasitic infection caused by pork tapeworms.

Area of Risk: Worldwide. (Latin America, Asia and Africa) Most often found in rural areas and developing countries

Transmission: The tapeworm larvae are ingested through contaminated water or food and form a cyst.

Signs and Symptoms: When the ingest larvae hatches it penetrates the intestinal wall and travels through the blood. It then forms cysts in the muscles, brain or eyes. If present in the muscle it will generally not cause symptoms. Lumps may be felt under the skin. If found in the brain symptoms will depend on the cyst location. The most common symptoms are headaches or seizures. Sudden death can occur in heavy

infections. It is rare for the cysts to form in the eye but it may cause floaters and disturb or blur vision. It can cause retinal swelling or detachment.

Treatment: Seek medical attention. Anti-parasitic and anti-inflammatory medications are used in treatment. Surgical treatment may be warranted in some cases.

Prevention: Avoid eating or drinking contaminated water or food. Do not eat raw or undercooked pork or meat from infected animals. Maintain good hand washing. Wash and peel all raw vegetables and fruit. Drink bottled water.

DENGUE FEVER

Description: Is a viral disease and is rapidly expanding in tropical and subtropical areas of the world.

Areas of Risk: Occurs in most in tropical climates found in the America's, the South Pacific, Asia, the Caribbean, and African countries. Cases have been reported in urban areas of tropical nations including Thailand, Singapore, Taiwan, Indonesia, Philippines, India, and Brazil. Recent, locally acquired infections have been reported in Texas, Hawaii, and the Middle East.

Transmission: Dengue Fever is spread by mosquito bites. These bites can occur during daylight hours, indoors, in shady areas or if weather is overcast.

Signs and symptoms: Sudden onset of fever, intense headache, pain behind the eyes, joint and muscle pains, nausea and vomiting after a 3-14 day incubation period. A rash appears approximately three to four days after onset of fever on torso that spreads to arms, legs and face.

Treatment: Travelers should seek medical attention if any febrile illness occurs within two weeks of being exposed to mosquitoes. A blood test for determination of Dengue Fever is necessary.

Prevention: Remain in well-screened or air conditioned areas when possible, wear clothing that covers arms and legs, and apply mosquito repellent containing DEET (at least 20-30%, Deep Woods Off, Repel and Ultrathon). No vaccine is available.

DIPHYLLOBOTHRIASIS (FISH TAPEWORM DISEASE)

Description: Is an intestinal infection.

Areas of Risk: Found in Scandinavia, Eskimos, fishermen, Jewish populations or consumers at sushi bars.

Transmission: Ingestion of raw, pickled, smoked, or undercooked freshwater fish. The fish could be ingested by, tasting the fish while cooking, consuming raw cod "lutefish", or eating at a sushi bar.

Signs and Symptoms: Abdominal cramping and diarrhea. Fatigue and anemia may be caused from a Vitamin B12 deficiency (due to the tapeworm depleting this important vitamin).

Treatment: Seek medical care for possible prescription medication.

Prevention: Avoid eating infected raw or undercooked fresh fish.

DIPHTHERIA, TETANUS, AND PERTUSSIS

Description: Diphtheria: an acute bacterial infection of the pharynx, larynx, tonsils, skin, nose, and mucous membranes. Tetanus: an acute disease causing muscle spasms and rigidity often noted first in jaw and neck. Pertussis: and acute bacterial infection of the respiratory tract.

Areas of Risk: Diphtheria is found throughout much of the world. Diphtheria risks are higher in Algeria, Egypt, and the sub-Saharan countries in Africa, Brazil, Dominican Republic, Ecuador, Columbia, Haiti, Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Iran, Iraq, Laos, Mongolia, Burma, Nepal, Pakistan, Paraguay, Philippines, Syria, Thailand, Turkey, Vietnam, Yemen, Albania, and all the countries of the former Soviet Union.

Diphtheria and pertussis are found worldwide, more frequently in areas where vaccination levels are low. Tetanus can occur anywhere in the world in unvaccinated individuals.

Transmission: Diphtheria is transmitted from person to person especially in crowded conditions which foster the sharing of respiratory secretions. Tetanus is a disease caused by an anaerobic bacillus. Infected wounds can be superficial or deep and are contaminated from contact with dirt, feces or saliva, or exposure to other infected wounds. Five to ten percent of reported tetanus cases are not associated with any type of open wound contamination. Pertussis is highly contagious and spread person to person by respiratory droplets in the air.

Signs and Symptoms: A grayish inflamed patch on the throat, tonsil, skin, nose, or mucous membranes characterize Diphtheria. Tetanus is an acute disease with noted muscle spasm and rigidity especially of the neck and jaw. Pertussis is characterized by prolonged “whooping” paroxysmal coughing.

Treatment: Seek medical care.

Prevention: Vaccine is available for all these diseases and is given as a series in infancy and early childhood. The Tdap (tetanus, diphtheria, and pertussis) vaccine should be given once as an adult. After the initial series an adult dose of tetanus and diphtheria vaccine should be given every 10 years.

DRACUNCULIASIS

Description: Is a parasitic disease.

Areas of Risk: Common in Africa and Asia, primarily Yemen and India.

Transmission: Following drinking infested water, the larvae are liberated in the stomach of the human. The larvae travel through the tissue and become adults. After the female mates and grows to maturity, it travels to the subcutaneous tissue (most frequently of the legs) where it protrudes through the skin to release the immature larvae.

Signs and Symptoms: Burning and itching of the skin in the area of the lesion (usually on the leg or foot), fever, nausea, vomiting, diarrhea, shortness of breath, and the possible visualization of the adult worm protruding from the skin.

Treatment: Seek medical attention.

Prevention: Follow safe food and water precautions.

ECHINOCOCCOSIS

Description: This parasite is common where dogs are used to herd grazing animals and also have intimate contact with people.

Areas of Risk: Include regions of Eurasia, South America, Africa, Europe, East Russia, central Asian Republics, China, northern Japan, and Alaska.

Transmission: Transmitted by the transfer of tapeworm eggs from dog feces. Exposure occurs in handling dogs and objects soiled with dog feces and through contaminated food / water.

Signs and Symptoms: This disease in humans will produce cysts of varying sizes, which are the larval stages of the tapeworm. Lesions can be identified by x-ray, CT scan and ultrasound. Symptoms are usually seen when cystic tumors become large enough to cause pain and functional difficulties in the organ (usually liver or lungs).

Treatment: Cysts may be removed if possible and medications prescribed. Seek medical care with infectious disease specialist.

Prevention: Be cautious around dogs used to control herds of grazing animals.

EHRlichiosis

Description: Ehrlichiosis is a bacterial disease spread by infected ticks.

Areas of Risk: It is found in the United States, Europe, A Japan, Malaysia, Argentina and Venezuela. In the United States it is found in the Southeast, Mid-Atlantic, the Northeast and upper Midwest.

Transmission: It is caused by the bacteria, “*rickettsiae*”. This disease attacks the white blood cells. It is transmitted through the bite of an infected tick most likely the deer or Lone Star ticks.

Signs and Symptoms: Sudden onset of high fever, major muscle aches, fatigue, severe headache, and possible rash. Symptoms appear 3-16 days after the tick bite. Similar to Rocky Mountain Spotted Fever it too, can be severe and life threatening.

Treatment: It is important to seek medical care. Lab tests can be done to detect the bacteria but testing is not always widely available. Lab findings might also include a low white blood cell count, low platelet count and abnormal liver function tests. Tell your health care provider your history of exposure. This infection can be treated with antibiotics.

Prevention: There is not a vaccine available to protect humans. To reduce your risk, take the following precautions:

- While outside, dress appropriately by wearing light colored clothing, long sleeves, head covering, tying back long hair and wearing long pants tucked into socks.
- Use insecticides to kill or repel ticks. Examine clothing and skin for ticks. On the body ticks are commonly found between the toes and fingers, under the arms, behind knees, in and behind ears, top of head, and on the neck and hairline.
- Remove ticks immediately. If attached remove with tweezers, grabbing as close to skin as possible. Do not remove them by squeezing, burning with a match or coating them with petroleum jelly.
- Avoid areas when abundant tick vectors have been found.

ENCEPHALITIS (TICKBORNE)

Description: Is a viral infection that affects the central nervous system.

Areas of Risk: In temperate regions of Europe and Asia, The highest incidences reported in Austria, Czech Republic, Germany, Estonia, Hungary, Latvia, Lithuania, Poland, Russia, Slovenia, Sweden, and Switzerland.

Transmission: It is transmitted through the bite of an infected tick or consuming unpasteurized dairy products from infected goats, cows or sheep. The risk is low to those travelers who do not visit or work in forested areas or consume contaminated dairy products. There is greater risk with extensive unprotected outdoor activities in rural areas.

Signs and Symptoms: Onset with headache, nausea, vomiting and fever.

Treatment: Seek medical treatment. Since this is a viral illness antibiotics are not helpful.

Prevention: Effective vaccine is available in Europe and Canada through travel clinics. If at higher risk of exposure vaccination should be considered. Avoid tick infested areas and follow insect precaution instructions.

FASCIOLIASIS

Description: Is a parasitic disease caused by *fasciola hepatica* (the sheep liver fluke).

Areas of Risk: Worldwide. Human cases reported in areas where cattle and sheep are raised. Particularly high rates in: Bolivia, Ecuador, Egypt, Peru, and tropical areas of South Asia, Southeast Asia, Africa, Europe, Middle East and Hawaii.

Transmission: Through ingestion of contaminated water or water plants such as watercress. The water contaminated by feces of infected sheep or cattle. Transmission also occurs with consumption of raw liver from an infected goat, cow or sheep.

Signs and Symptoms: Abdominal pain, enlargement of the liver, fever, vomiting, diarrhea, itching of skin. As many as one half of individuals with this parasite will have no symptoms. It is associated with severe anemia that is seldom fatal.

Treatment: Seek medical care. The drug of choice in treatment is triclabendazole with bithionol as an alternative.

Prevention: Avoid consumption of potentially contaminated water and water plants. Do not eat raw liver.

FILARIASIS

Description: Is caused by adult worms that live in the lymphatic vessels.

Areas of Risk: Occurs in most warm humid regions of the world. It is found in sub-Saharan Africa, Southern Asia, Egypt, the northeastern coast of Brazil, the western Pacific Islands, Guyana, Haiti and the Dominican Republic. It is common in areas where conditions favor breeding of vector mosquitoes.

Transmission: Filariasis is transmitted by the bite of a mosquito harboring infective larvae.

Signs and Symptoms: Allergic inflammatory manifestations such as swelling of an extremity or other part of the body may appear as early as a month after infection or may not appear until 2-3 months after infection. This disease could also affect the lungs causing nocturnal, wheezing, coughing and fever. Not directly transmitted from person to person.

Treatment: A tropical medicine or infectious disease specialist should be consulted. The drug of choice for treatment is diethylcarbamazine.

Prevention: Identify times and places of mosquito biting and locate breeding places. If indoor night-biters are responsible, spray inside walls with a residual insecticide, screen houses, or use bed nets and insect repellents. Eliminate breeding places, such as open latrines, old tires, coconut husks and treat others with larvicides. No vaccine is available.

GIARDIASIS

Description: Is a diarrheal illness caused by protozoa that live in the intestinal tract of humans and animals and is passed through the feces.

Areas of Risk: Occurs worldwide. The highest risk is for those who live in or visit rural areas, trek in backcountry areas, or frequently eat, drink, or swim in areas that have poor sanitation and inadequate treatment facilities for drinking water.

Transmission: Is transmitted by ingesting contaminated food and/or water. Person-to-person transmission occurs by hand-to-mouth transfer of cysts from the feces of an infected individual, especially in institutions and day care centers. Contact with environmental surfaces and swallowing infected recreational water can also spread the illness.

Signs and Symptoms: Symptoms begin approximately 1-2 weeks after parasitic ingestion. Symptoms could include: chronic diarrhea with frequent loose pale gray stools, abdominal cramps, bloating, fatigue and weight loss.

Treatment: Seek medical treatment. Antimicrobial medications, such as metronidazole, are usually effective in treatment.

Prevention: Be aware of personal hygiene and the need for hand washing before eating and after toilet use. Follow safe food and water precautions. No vaccine is available.

GNATHOSTOMIASIS

Description: A type of roundworm parasite, *Gnathostoma spinigerum* or *Gnathostoma hspidum*

Areas of Risk: Areas of Asia, especially Japan and Thailand. In recent years it has been found in Mexico.

Transmission: Ingestion of infected undercooked or raw fish or poultry, and drinking contaminated water.

Signs and Symptoms: The worms can migrate to different areas of the body. If in subcutaneous tissue, symptoms could be intermittent, painful, itchy swollen areas under the skin. Other symptoms would vary according to the location of the parasite. They could include: coughing, blood in the urine, changes in vision, or other various symptoms.

Treatment: Seek medical treatment. Medications such as, albendazole or ivermectin could be used. Surgical removal if indicated

Prevention: Eat well-cooked fish and poultry. Drink bottled water (follow safe food and water precautions)

HANTAVIRUS PULMONARY SYNDROME

Description: Hantavirus is a viral infection that can cause serious respiratory illness.

Areas of Risk: It is spread by rodents, and is found in many places throughout the world.

Transmission: Infected rodents spread the disease through urine, saliva, droppings, and in nesting materials. Exposure to the virus can occur by coming in contact with droppings or with things that the rodents have handled, eaten, or lived in. Disturbing a nest or sweeping up droppings can spread the virus through the air.

Signs and Symptoms: Symptoms develop 1 to 5 weeks after exposure to the virus. Early symptoms include fatigue, fever, muscle aches, headache, dizziness, chills, nausea, vomiting, diarrhea, and abdominal pain. Late symptoms occur 4 to 10 days after exposure and include coughing, rash, and shortness of breath. It is a potentially fatal disease.

Treatment: Seek medical treatment.

Prevention: Avoid contact with rodents and areas where they may have nested, including garbage cans/woodpiles. Do not disturb their dens or nests. Keep food/ food scraps in tightly covered containers and wash all dishes and utensils immediately after use.

HEPATITIS A

Description: Is caused by hepatitis A virus (HAV) that infects the liver.

Areas of Risk: Hepatitis A occurs throughout the developing world, but low endemicity in developed countries, such as the United States. Even in the United States community outbreaks still occur. Many travel-related cases occur in persons traveling to developed countries with “standard tourist accommodations, itineraries and food consuming behaviors.”

Transmission: Viral Hepatitis is transmitted from person-to-person through the fecal-oral route, and through ingesting contaminated food or water.

Signs and Symptoms: The average incubation period is 28 days (range 15-50 days). Symptoms could include an abrupt onset of fever, malaise, anorexia, nausea, and abdominal cramps, followed by jaundice (yellowing of skin and eyes). It is possible to be asymptomatic or mildly ill for 1-2 weeks or it could be severely disabling for several months. Hepatitis A is not a chronic or long-term infection.

Treatment: Seek medical treatment.

Prevention: Consider Hepatitis A vaccine for travel to developing countries, especially to rural areas, poor or unsanitary settings, and close contact with local persons. Hepatitis A vaccine requires two doses, 6-12 months apart. The first dose of Hepatitis A vaccine should be given at least 4 weeks before travel. For long term protection, the second dose should be given 6-12 months after the first.

Follow the recommendations for safe food and water consumption.

HEPATITIS B

Description: Is a viral infection of the liver caused by the Hepatitis B virus (HBV).

Areas of Risk: The risk for Hepatitis B Virus (HBV) infection from international travel is generally low except for travelers to countries where it is endemic. More cases of chronic Hepatitis B are found in Africa, China, Korea, Indonesia, Southeast Asia, the Middle East (except Israel), the Philippines, south and Western Pacific islands, the Amazon River basin, Haiti and the Dominican Republic.

Transmission: HBV is primarily transmitted through activities which result in exchange of blood or body fluids, such as unprotected sexual intercourse with an infected person, use of contaminated, non-sterilized syringes or needles for any skin-piercing procedures, including drug use, tattooing, body piercing, injections, or acupuncture. Work in health and dental care, or research activities may increase exposure risk. In less developed countries, open skin lesions in children with impetigo, scabies, or scratched bites may pose a risk.

Signs and Symptoms: The average incubation period is 120 days (range 45-160 days). Symptoms would include malaise, decrease appetite which may precede jaundice (yellowing of skin) by 1-2 weeks. Other symptoms are nausea, abdominal pain, nausea and vomiting. Chronic infection can cause scarring of the liver, liver cancer and chronic liver disease.

Treatment: Seek medical treatment.

Prevention: HB vaccine is recommended for all persons who work in health care fields (medical, dental, and laboratory) which may increase exposure to HBV and also to individuals who reside in an endemic area for greater than 6 months. In an ideal situation the vaccination series should be started 6 months prior to travel. Some protection is provided after 1-2 doses are given. Optimal protection is not received until after the final vaccine dose is given.

HEPATITIS C

Description: Hepatitis C is a disease of the liver caused by the Hepatitis C virus (HCV).

Transmission: It is transmitted by exchange of blood through blood transfusions or sharing drug injecting equipment. It is less commonly spread through sexual activity.

Areas of Risk: Prevalence of Hepatitis c is higher in some countries in Africa and Asia- the highest prevalence is in Egypt. Traveler's risk of this infection is low.

Signs and Symptoms: Eighty percent of persons with acute HCV have no symptoms. If present, symptoms may include, decreased appetite, fatigue, nausea, abdominal pain, dark urine and jaundice. This type of hepatitis is chronic in 75-85% of infected persons.

Treatment: Seek medical care.

Prevention: No vaccine is available. Be aware of risks and transmission through blood and contaminated equipment used for tattooing, body piercing and drug use.

HEPATITIS E

Description: Is an inflammation of the liver caused by the Hepatitis E virus (HEV).

Areas of Risk: Hepatitis E is endemic in many tropical and subtropical countries. Outbreaks have also been reported in India, Southeast Asia, Indonesia, Mexico, Malaysia, Mongolia, Bangladesh, Afghanistan, Burma, Nepal, Pakistan, China, Russia, Latin America, Middle East and Northern and Sub-Saharan Africa.

Transmission: Hepatitis E is transmitted from person-to-person through the fecal-oral route, and through ingesting contaminated food or water.

Signs and Symptoms: The incubation period ranges from 15-60 days with the average period being 40 days from exposure. If symptoms occur they would include, loss of appetite, fatigue, abdominal pain, nausea, and fever.

Treatment: Seek medical treatment. Hepatitis E is usually self-limiting and supportive treatment is given. There is an increase risk of fulminant hepatitis particularly in pregnant women. Hepatitis E should be considered in returned travelers with fever and Hepatitis (any form). Travelers should seek medical attention if any febrile illness occurs within 2 weeks of returning home.

Prevention: Avoid contaminated water and undercooked foods. Be vigilant about hand washing and expect this from all food handlers. Vaccines for Hepatitis E are in the developmental stages but not yet available.

Follow the recommendations for safe food and water consumption.

HISTOPLASMOSIS:

Description: Is a fungal disease that grows in the soil enriched with the accumulation of bird or bat droppings. Exposures can occur with activities such as spelunking, construction, farming/gardening, fishing, roofing, chimney cleaning, excavation, and installation of heating and cooling systems.

Transmission: It is transmitted through inhaling these spores from contaminated soil. It is not transmitted person to person.

Areas of Risk: Histoplasmosis has been found in every continent except Antarctica. In the U.S. along the Ohio and Mississippi River valleys in the central and southeastern states are where histoplasmosis can be contracted. Cases have been reported in North, parts of the Middle East (Iran and Turkey), Central and South America, eastern Asia (Pakistan, India, China, Thailand, Indonesia, Vietnam, Malaysia, Philippines, Burma and Japan), parts of Europe (northern Italy, Bulgaria, Spain, Hungary, Austria, France, Portugal, Romania, the former Soviet Union, Great Britain, Ireland, and Norway), the Caribbean, parts of Africa, and Australia.

Signs and Symptoms: Ninety percent of infected persons are asymptomatic or result in mild influenza-type symptoms. Some infections will have a more acute presentation of high fever, headache, dry cough, chills, chest pain, and weakness. Symptoms usually occur 3-17 days after exposure. Most individuals recover spontaneously in 2-3 weeks. Re-infection and reactivation can occur.

Treatment: Persons with localized, acute pulmonary histoplasmosis may not need treatment with an antifungal medication. Others with persistent or severe disease can be treated with an antifungal medication such as itraconazole.

Prevention: Avoid areas of high risk where known cases have been reported or areas such as bat-inhabited caves. Preventative measures would include watering dry areas before engaging in dust producing activities and wearing masks and protective equipment if exposure cannot be avoided. No effective vaccine is available.

HIV/AIDS

Description: Acquired Immune Deficiency Syndrome (AIDS) is a severe and potential life threatening illness caused by the Human Immunodeficiency Virus (HIV).

Areas of Risk: This virus has been reported worldwide.

Transmission: Transmission occurs through the exchange of bodily fluids (semen, blood, and vaginal secretions). Travelers are at risk if they have unprotected sexual intercourse with an infected person, use contaminated, non-sterilized syringes or needles for any skin-piercing procedures, including drug use, tattoos, body piercing, injections, or acupuncture. (An individual with HIV cannot be identified by outward means).

Signs and Symptoms: Symptoms usually do not appear for several months to years. The first sign is usually fever, fatigue, and malaise.

Prevention: Do not have unprotected sexual intercourse, use non-sterilized syringes or needles for any skin-piercing procedures, including drug use, tattoos, body piercing, injections or acupuncture. Travelers should avoid the use of blood products or blood transfusions if at all possible in less-developed countries. No vaccine is available.

Treatment: For more information Ph. #1-800-342-AIDS, toll free in the United States.

Signs and Symptoms: Symptoms usually do not appear for several months to years. The first sign is usually fever, fatigue, and malaise.

HOOKWORM AND STRONGYLOIDIASIS

Description: A type of intestinal round worm disease.

Transmission: Walking barefoot in fecal contaminated soil that harbors larvae. The larvae enter the body by penetrating the skin usually of the feet.

Areas of Risk: Worldwide mostly in warm moist climate areas, more common in tropical and subtropical countries where skin exposure is common and the environment is conducive.

Signs and Symptoms: After penetrating the skin the larvae will pass through the lungs and enter the intestinal tract. In the intestine adult worms develop. Early symptoms might include wheezing cough, stomach pain, fatigue (from anemia). Cutaneous larva migrans (skin) symptoms are reddened tracks that appear in the skin,

along with severe itching, redness and mild swelling. Strongyloidiasis is potentially dangerous in individuals who are immunocompromised from AIDS, radiation, cancer, or medication and diarrhea may occur early in illness. Most infected with Hookworms or Strongyloidiasis will not have any symptoms.

Treatment: Seek medical attention. Albendazole or similar medications may be used.

Prevention: Avoid skin contact with soil in areas where cases have been reported. Wear shoes to protect feet.

INFLUENZA

Description: Is a viral infection caused by either influenza A or B virus.

Areas of Risk: It is a worldwide health concern and has a tendency to be a seasonal illness.

Transmission: Through respiratory droplets or saliva.

Signs and Symptoms: Abrupt onset of fever, body aches, cough, sinus congestion, and sore throat.

Treatment: Seek medical care. Use symptomatic treatment.

Prevention: Vaccine given on a yearly basis is available to reduce the impact of influenza.

JAPANESE ENCEPHALITIS

Description: Is a form of viral encephalitis.

Areas of Risk: Is the most common cause of encephalitis throughout Asia and part of the western Pacific.

Other areas of risk are Australia (Islands of Torres Strait), Bangladesh, Brunei, Burma, Cambodia, India, Indonesia, Laos, Malaysia, Nepal Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam and Pacific Islands. The risk to short term travelers who stay within urban areas is very low.

Transmission: Japanese Encephalitis is transmitted by the bite of a mosquito. These mosquitoes feed mainly from dusk through the evening hours. Larvae are found in flooded rice fields, marshes, and small collections of water around cultivated fields. In temperate areas the greatest risk occurs June through September.

Signs and Symptoms: Most persons do not have symptoms if present would include nausea, vomiting, fever and headache. If symptoms are present the illness can be life threatening.

Treatment: Seek medical care.

Prevention: A vaccine is available, and may be obtained from your primary M.D.

When traveling in rural areas, use of long sleeves and long pants is recommended, as well as the use of mosquito repellent containing DEET (Deep Woods OFF, Repel, and Ultrathon). In evening hours, assure that screens are used and that there are no holes in the screens, use bed nets if screened areas are not available.

LEGIONELLOSIS

Description: Includes Legionnaires' disease and Pontiac fever. Both of these diseases are caused by bacteria that grow in warm, freshwater environments. Under certain conditions it can be inhaled and the lungs which are the primary site of infection.

Areas of Risk: Worldwide in freshwater environments.

Transmission: It can be transmitted through stagnant, warm (77-108 degree F) water that has become aerosolized so it can be inhaled into the lungs. An example would be plumbing systems in large buildings like hotels where sections are infrequently used. This disease does not occur in natural settings like lakes, streams or waterfalls.

Signs and Symptoms: The first sign is usually pneumonia that may require hospitalization. The fatality rate is 10-15%. Symptoms within 2-10 days of exposure and would include cough, difficulty breathing, fever, headache and myalgia.

Treatment: Seek medical treatment. Prompt use of specific antibiotics like quinolones and macrolides is recommended. Treatment may be needed for as long as 3 weeks. Consulting an infectious disease specialist is highly recommended.

Prevention: Elderly and immuno-compromised travelers are more at risk and should avoid high risk areas where water is aerosolized, like whirlpool spas.

LEISHMANIASIS

Description: Is a parasitic disease of the skin or internal organs.

Areas of Risk: >90% of the world's cases occur in Afghanistan, Algeria, Iran, Iraq, Saudi Arabia, and Syria, and also in Brazil and Peru.

Transmission: It is transmitted by the bite of some species of sand flies. The disease commonly presents as a cutaneous (skin) or visceral (internal organs) manifestation, which may not be apparent for months or years after a bite.

Signs and Symptoms: For the skin-type one or more skin sores (which may or may not be painful or scabbed over) and appear weeks to months after a bite. These sores may last for weeks or months if left untreated. If leishmaniasis is of internal organ-type symptoms may occur weeks to months to sometimes years after infected. Symptoms would include, weight loss, fever, enlarged liver and spleen, and anemia. If untreated, this type of disease is typically fatal.

Treatment: Seek medical treatment with an infectious disease or tropical medicine specialist.

Prevention: No vaccines or drugs are currently available for preventing this infection; however, preventive measures should be aimed at reducing fly contact. Protective clothing and insect repellent with DEET (Deep Woods Off, Repel, and Ultrathon) should be used whenever in areas of suspected sand fly activity. It is more common in rural areas.

LEPTOSPIROSIS

Description: Is a bacterial infection.

Areas of Risk: Distribution is worldwide, but the disease is most prevalent in the tropics. There is greater risk to those partaking in water activities or during flooding periods in endemic areas.

Transmission: Transmission occurs through contact with contaminated freshwater or moist soil. The water and soil becomes contaminated through infected urine excreted from animals. It enters the skin through open wounds, mucous membranes or conjunctivae. The infection can be caused by ingestion of contaminated water or food.

Signs and Symptoms: The onset is usually acute with fever, myalgia, chills, nausea, diarrhea, eye irritation and cough. If the disease is severe, symptoms of renal failure, jaundice (yellowing of the skin), internal bleeding, and pneumonia may occur.

Treatment: The CDC recommends that travelers at higher risk take doxycycline once a week starting 1-2 days before exposure and during time of exposure. The disease would be treated with an antibiotic such as penicillin, amoxicillin, or doxycycline. Consult with a tropical medicine or infectious disease specialist.

Prevention: No vaccine is available. Avoid potentially contaminated freshwater and soil. Wear protective clothing and minimize contact with contaminated water.

Follow the recommendations for safe food and water consumption.

LYME DISEASE

Description: Lyme disease is an infection caused by *borrelia burgdorferi*.

Areas of Risk: Lyme disease is found in the Northeast, north central and Pacific coastal areas of the U.S., and in temperate forested regions of northern Asia and Europe (more common in eastern and central Europe). The primary risk factor is exposure to wooded or grassy areas inhabited by ticks. Hikers, campers, hunters, and people living in wooded or rural areas are at highest risk.

Transmission: Lyme disease is transmitted by the bite of an infected tick. The longer a tick is attached to the skin, the greater the risk of acquiring Lyme disease. Illness is unlikely to occur, if tick is attached for less than 36 hours so prompt removal of attached ticks is important.

Signs and Symptoms: In early Lyme disease an expanding rash at the site of attachment, fever, tiredness and muscle or joint pain is experienced.

Treatment: Seek medical attention if symptoms develop. Treatment would include the use of antibiotics.

Prevention: No vaccine is available since it was removed from the market in February 2002. Wear long pants and long sleeved shirts when in areas of highest risk. Use insect repellent with DEET (Deep Woods Off, Repel and Ultrathon). If a tick is embedded in the skin, remove gently with a tweezers, and assure that the head is fully removed. Wash the area with warm soap and water immediately.

MALARIA

Description: Is a protozoan infection caused by one of four species. It can be a fatal disease but is largely felt to be preventable.

Areas of Risk: Occurs in large areas of Central and South America, parts of the Caribbean, Africa, Asia (South Asia, Southeast Asia, and the Middle East), Eastern Europe and the South Pacific.

Transmission: It is transmitted by the bite of an infected female mosquito, and rarely, through blood transfusions or congenitally from mother to fetus.

Signs and symptoms: Fever, flu-like symptoms, including chills, headache, muscle aches, and malaise (lack of energy) these symptoms can come and go. Malaria can develop anywhere from 6 days to several months after exposure. So it is important to tell your health care provider of this travel risk when being treated for an illness.

Treatment: Seek medical attention immediately even if you have taken the prophylactic anti-malarial medication. Malaria is fatal if untreated.

Prevention: No vaccine is available. Take prophylactic anti-malaria medication, which must be taken 1-2 weeks before leaving to the malaria area and continue up to 4 weeks upon return. Personal protection measures are also necessary. These include staying indoors from dusk until dawn, using insect repellents which include DEET (Deep Woods Off, Repel and Ultrathon), wearing clothing that covers arms and legs completely, and using mosquito netting during sleep.

MEASLES

Description: Measles (Rubeola) is a serious viral disease complicated by secondary infections.

Areas of Risk: The risk of exposure outside the U.S. may be high, due to poor immunization standards. The risk of exposure in the United States is low.

Transmission: It is transmitted by direct contact with saliva or by breathing air droplets released by an individual who has measles.

Signs and Symptoms: Fever, red eyes, runny nose, cough, and Koplik spots (red, botchy spots) in the lining of the mouth. A red, blotchy rash appears in 3-7 days. Highly communicable, and quarantine should apply.

Treatment: Seek medical attention

Prevention: Vaccine is available. Persons born before 1957 are likely to have natural immunity, and generally need not be considered susceptible. Individuals born since 1957 should receive two doses of measles vaccine at least 1 month apart after the first birthday, or have a measles blood test to determine if immune. Generally measles is given as a trivalent vaccine with mumps and rubella.

MEDITERRANEAN SPOTTED FEVER

Description: Mediterranean spotted fever is also known as boutonneuse fever, African or Kenyan tick typhus, and the Indian tick typhus.

Areas of Risk: It occurs primarily in Africa, the Mediterranean, India and southern Asia.

Transmission: Transmission occurs through the bite of ticks usually associated with close contact with tick-carrying rodents, dogs or cattle.

Signs and Symptoms: Symptoms include chills, fever, headache, and a rash. An ulcer with a black crust may be noted at the site of the tick bite.

Treatment: Seek medical care. Antibiotics such as tetracycline or doxycycline would be used.

Prevention: Avoid close contact with dogs, cattle, or rodents since they tend to carry the tick. Also take the standard measures such as using a repellent with DEET (Deep Woods Off, Repel and Ultrathon) to prevent insect bites. If a tick is noticed on the skin, remove the tick immediately and wash the area with soap and water.

MELIOIDOSIS

Description: It is a potentially fatal infection caused by *Burkholderia pseudomallei* bacteria. Melioidosis is the most common cause fatal community acquired bacteremic pneumonia in the tropical area of the Northern Territory of Australia. The respiratory tract is the most common site of infection.

Areas of Risk: It is endemic in Southeast Asia and Northern Australia. It has been reported in Puerto Rico, and possibly in El Salvador, India, the Caribbean, and Central and South America.

Transmission: *B pseudomallei* is transmitted through direct contact of abrasions, wounds or openings in the skin with contaminated soil and surface water. 75% to 85% of reported cases occur in the wet seasons. Humans and animals can also acquire this disease by inhalation of contaminated dust or water mist. Another means of transmission is through ingestion of infected water. There have been reported cases of person to person transmission.

Signs and Symptoms: The incubation period is has not been clearly defined and could range from 2 days to several years. The following are list of the categories and their symptoms:

Acute localized infection: Is the presence of a nodule at the site of inoculation of the bacteria through an opening or break in the skin. It can cause fever and muscle aches. It may rapidly progress and infect the blood stream.

Pulmonary infection: The symptoms range from mild bronchitis to severe pneumonia. It is accompanied by high fever, loss of appetite, headache, and muscle aches. The cough with chest pain may be dry or productive with normal sputum.

Acute bloodstream infection: Individuals with HIV, diabetes and renal failure are most likely to develop this type of the disease. Symptoms usually include respiratory distress, fever, severe headache, diarrhea, pus filled skin lesions, muscle pain and disorientation.

Chronic suppurative (pus-like draining) infection: This infection can involve any organ of the body. The joints, lymph nodes, skin, brain, lung, liver, bones and spleen are common sites.

Treatment: Seek medical treatment in the early stages of this disease. Several types of antibiotics can be used in treatment such as: penicillin, imipenem, doxycycline, amoxicillin-clavulanic acid, azlocillin, ticarcillin-vulanic acid, ceftazidime, ceftriaxone, and aztreonam. The acute bloodstream type of this disease can be fatal. The other types listed above are considered nonfatal.

Prevention: No vaccine is available. Prevention in endemic areas is difficult since contact with contaminated soil is very common. Anyone with diabetes or skin lesions/abrasions should avoid standing water or soil in these areas. Wearing boots can reduce exposure in agricultural settings. Follow usual blood and body fluid precautions in health care settings.

MENINGOCOCCAL DISEASE

Description: Is an acute serious bacterial infection.

Areas of Risk: It is at higher risk in sub-Saharan Africa and Saudi Arabia (Hajj pilgrimage to Saudi Arabia). A major epidemic occurred in Burkina Faso in 2002.

Transmission: Is through close contact with respiratory droplets or saliva of an infected individual. The bacteria can be spread from an asymptomatic person.

Signs and Symptoms: Sudden onset of fever, severe headache, nausea and vomiting, rash, and stiff neck.

Treatment: Seek medical attention immediately as this disease can be fatal and it progresses rapidly.

Prevention: Vaccine is available for A, C, Y, and W-135 serogroups. It is required when travelling to Saudi Arabia during the annual Hajj.

MUMPS

Description: It is a viral illness.

Areas of Risk: Risk of exposure outside the U.S. can be high. The most recent outbreak in the U.S. was in 2006.

Transmission: Through close contact with respiratory droplets or saliva of an infected person.

Signs and Symptoms: Fever, tenderness and swelling of one or more salivary glands.

Treatment: Seek medical attention.

Prevention: Mumps vaccine is available and is usually given in combination with rubeola and rubella vaccines.

ONCHOCERCIASIS (River Blindness)

Description: An infection caused by prelarval and adult stage of the *Onchocerca volvulus*. Short-term travelers to endemic areas appear to be at low risk. If length of stay is longer than 3 months there is a greater risk.

Areas of Risk: It is endemic in a broadband across central Africa, Yemen, Brazil, Columbia, Ecuador, Guatemala, Southern Mexico, and Venezuela.

Transmission: It is transmitted through the bite of certain types of female black flies in daylight hours. These types of black flies are found near rapid running rivers and streams.

Signs and Symptoms: Skin inflammation (dermatitis) and nodules under the skin. Lesions on the eye can progress to blindness. Symptoms may occur months to years after exposure.

Treatment: The drug of choice for treatment is Ivermectin. Repeated doses may be required for up to several years. Consult with an infectious disease/tropical medicine specialist.

Prevention: No vaccine is available. Avoid black fly habitats and use personal protective measures and insect repellents.

PARAGONIMIASIS

Description: Is a type of parasite known as a lung fluke, *Paragonimus westemani*.

Areas of Risk: China, Korea, Japan, Taiwan and the Philippines. Other species present in West Africa, Central and South America.

Transmission: Consuming raw, undercooked, wine-soaked or salted freshwater crabs, shrimp and crayfish.

Signs and Symptoms: Since it affects the lung symptoms could include, chest pain and coughing up blood.

Treatment: Seek medical care. Medications such as Praziquantel or Triclabendazole have shown to be effective in treatment.

Prevention: Eat only well cooked freshwater shellfish.

PLAGUE

Description: It is a bacterial infection.

Areas of Risk: Occurs in rural areas of the northeastern part of South America, central and southern Africa, central Asia, the Indian subcontinent, and parts of southwestern United States. Although rare, urban outbreaks have occurred in Majunga, Madagascar.

Transmission: Is through bites from infected fleas or direct contact with infected material or inhalation of infected respiratory droplets. A bite from an infected rodent will also transmit the disease. Risk is relatively small to most travelers

Signs and Symptoms: It can be nonspecific with fever, malaise, chills, muscle aches, nausea, headache, sore throat and painful, swollen lymph nodes.

Treatment: Plague can be fatal so it is important to seek medical treatment immediately. Antibiotics such as streptomycin, gentamicin, tetracycline, or doxycycline could be used in treatment.

Prevention: Vaccine is no longer available. Avoid all potential contact with rodent populations and use insect precaution. Antibiotics such as doxycycline and tetracycline can be taken to prevent plague if an exposure is unavoidable.

POLIO

Description: Is an acute infection that involves the gastrointestinal tract and on occasion the central nervous system.

Areas of Risk: Wild polio virus is prevalent in many countries of the world, especially in underdeveloped countries of Afghanistan, India, Pakistan, Nigeria, and Pakistan. All travelers are considered to be at risk when traveling to these countries.

Transmission: transmitted through fecal-oral route especially in countries with poor sanitation.

Signs and Symptoms: Symptoms can range from none to paralysis of a single limb to quadriplegia, respiratory failure, and infrequently, death.

Treatment: Seek medical treatment.

Prevention: A primary series of 3 doses of Oral Polio Vaccine or Inactivated Polio Vaccine, IPV and a one time booster when traveling to endemic countries. IPV should be used to complete a series that was not previously completed.

Q-FEVER

Description: An illness caused by *Coxiella burnetii*.

Areas of Risk: Worldwide, more often reported in individuals who have work with sheep, goats and cattle carcasses (meat packers, veterinarians, butchers, farmers). People who travel to rural areas or visit farms may be exposed.

Transmission: Air-borne via inhalation of contaminated dust or soil, possibly through consumption of unpasteurized milk products or infected tick exposure.

Signs and Symptoms: Headache, fever, chills, sweating, cough, pneumonia, endocarditis or hepatitis. Initially infections may result in self-limiting and mild influenza-like illnesses. If untreated it may become chronic and is a severe health risk for individuals with heart valve abnormalities and can be potentially fatal.

Treatment: No vaccine is available. Seek medical attention. Appropriate antibiotic therapy is used in treatment.

Prevention: Avoid traveling to areas of higher risk. Refrain from consumption of unpasteurized dairy products. Follow insect precautions to avoid tick exposure.

RABIES

Description: It is an acute encephalomyelitis caused by a virus. Dogs are the main reservoir of the disease in many developing countries; however, the epidemiology of the disease in animals differs enough to warrant evaluation of all animal bites. Bats, skunks, and other wild animals are also high risk.

Areas of Risk: Canine rabies is highly endemic in Africa, South and Central America, and Asia. Rabies is found on all continents except Antarctica.

Transmission: Rabies is almost always transmitted by the bite of an infected animal that introduces the rabies virus into the wound. Very rarely rabies can be transmitted through a non-bite exposure by the virus coming in contact with mucous membranes or open wounds. If bitten by any animal, have it evaluated at a reputable facility.

Signs and Symptoms: The disease progresses from a prodromal phase to paralysis: muscles used to swallow can be stimulated by the sound, sight and perception of water; delirium and convulsions, followed by coma and death.

Treatment: Seek medical care.

Prevention: If planning cave exploration, or work with animals, consider the pre-exposure vaccine. This vaccine consists of three doses of Rabies Vaccine Absorbed (RVA). The pre-exposure vaccine does not eliminate the need for additional treatment with post exposure vaccine after a rabies exposure.

RELAPSING FEVER

Description: Is a disease caused by a bacteria carried by wild rodents and ticks. Ticks remain infective throughout their life.

Area of Risk: Western United States, Canada, tropical and subtropical areas like Africa, South America, and the Middle East.

Transmission: Through the bite of an infected tick. There has been no evidence of human to human transmission.

Signs and Symptoms: Fever for 2-9 days with intermittent periods of 2-4 days without fever. The fever can relapse 1-10 times. Symptoms usually begin 5-15 days after the tick bite. Other symptoms include chills, vomiting, muscle pain, liver and spleen enlargement. It can be fatal if it is not treated.

Treatment: Seek medical treatment. Antibiotics such as Penicillin and Tetracycline are used in treatment.

Prevention: Avoid tick infested areas. Avoid contact with rodents. Use DEET on skin or permethrin on clothing. Wear light colored clothes to allow ticks to be seen. Long sleeved shirt and long pants tucked into socks. If spending long periods of time outdoors check for ticks every few hours. Remove ticks promptly with a tweezers held close to the skin and avoid leaving any parts of its' mouth on the skin. Do not crush the body of the tick. Wash hands and tick bite site after removal.

RIFT VALLEY FEVER

Description: A viral disease that affects primarily livestock and humans.

Areas of Risk: The risk of RVF infection to persons who travel to endemic areas generally is low. RVF is endemic to sub-Saharan Africa. Sporadic outbreaks have occurred in Egypt, Madagascar, and Mauritania. Large epidemics reported in Kenya, Somalia, and Tanzania, Saudi Arabia, and Yemen.

Transmission: It is transmitted by several means including the bites of mosquitoes and other biting insects. Many human infections of RVF are associated with handling infective material of animal origin during necropsy and butchering.

Signs and Symptoms: Usual onset is with headache, malaise, arthralgia or myalgia, and occasionally, nausea and vomiting; generally some conjunctivitis and photophobia. There may or may not be fever. Rift Valley fever cases may develop encephalitis, hemorrhage or retinitis.

Treatment: Seek medical care.

Prevention: Travelers can reduce their risk of exposure by avoiding contact with livestock and minimizing their exposure to arthropod bites. No commercial human vaccine is available.

SANDFLY FEVER

Description: Is a viral disease.

Areas of Risk: Occurs in parts of Europe, Africa and Asia where sandflies exist, also in Central and South America where closely related viral agents are present. It is a disease of subtropical and tropical areas with long periods of hot, dry weather in Europe and Africa, and rainforest in the New World tropics. The disease is seasonal, between April and October, and is prone to appear as a disease of troops and travelers from non-endemic areas.

Transmission: It is transmitted to humans by the bite of an infected sand fly.

Signs and Symptoms: Symptoms usually occur 3-6 days after exposure. And consist of fever, headache with fever, pain in eyes, malaise, nausea and pain in the limbs and back. The symptoms of this disease may be severe but are rarely fatal.

Treatment: Seek medical care..

Prevention: Control of sand flies is most important. Prevent bites by using repellents while in infected areas, particularly after sundown. Use insecticides to destroy sandflies in and about human habitations.

SCHISTOSOMIASIS

Description: Is caused by flukes involving specific species of fresh-water snails.

Areas of Risk: It is worldwide and most prevalent in southern China, Indonesia, Cambodia, Laos, Southeast Asia, the Philippines, the Middle East, Brazil, and sub-Saharan Africa. An estimated 85% of the world's cases are in Africa.

Transmission: Schistosomiasis is transmitted by wading through fresh water. Flukes found in snails' release larvae that are capable of penetrating the unbroken skin of the human host. Even brief exposures to infected fresh water can cause disease.

Signs and Symptoms: An acute infection can occur within 2-3 weeks of exposure but most acute infections are asymptomatic. Schistosome eggs may be found microscopically 6-8 weeks after exposure. If symptoms are present they occur several weeks after exposure and would include: fever, decrease appetite, abdominal pain, weight loss, blood in the urine, weakness, joint and muscle pain, diarrhea, headaches, nausea, and a cough.

Treatment: Seek medical treatment. Medications such as, praziquantel or oxamniquine are considered to be a safe and effective treatment.

Prevention: Avoid any wading or swimming in fresh water in endemic areas. There is no way to identify infected water from non-infected water, and therefore all fresh water should be avoided. Bathing water should be heated to 50 degrees C, 122 F for 5 minutes. Filtering water with paper coffee filters may be effective in removing the larvae. If exposure to infected water is suspected, immediate and vigorous towel drying or rapid application of rubbing alcohol to exposed areas will reduce the risk of infection. Salt and properly chlorinated water is safe from Schistosomiasis.

SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

Description: SARS is a respiratory illness accompanied by fever. It is caused by a coronavirus.

Areas of Risk: It emerged in November of 2002 in southern china. From then until July of 2003 was reported in 29 countries. Most cases were in China, Hong Kong, Singapore, Taiwan, and Canada.

Transmission: SARS natural reservoir is unknown, possibly acquired from infected animals sold in markets for human consumption. Most infections occurred from close contact with individuals infected with SARS. Since some animals have been found to have this virus it remains possible for travelers in China to be exposed.

Signs and Symptoms: SARS has an incubation period of 2-10 days. The illness usually begins with a high fever and along with that headache, myalgia, chills, malaise and rigors. In 3-7 days a dry cough and difficulty breathing are noted. Abnormal chest x-rays are noted by the 7 day into the illness. Diarrhea could also be present. The overall fatality rate is about 10%. The rate may exceed 50% in individuals over 60 years of age.

Treatment: Seek medical care. Treatment may include antibiotic therapy but there is not a specific treatment that has proven to be effective.

Prevention: It is recommended to avoid live food markets and direct contact with wildlife such as civet cats of raccoon dogs. If travelling to an area reporting a SARS outbreak avoid settings such as health care facilities, residences of individuals with SARS, or areas where known SARS cases have been reported.

SMALLPOX

Description: Is caused by the variola virus and is an acute infectious disease.

Areas of Risk: The last case of smallpox reported was lab-acquired in 1978. There are no areas of risk listed. Vaccinia-like viruses have been reported among dairy workers in Brazil, cowpox virus has been reported in Europe, and Monkeypox virus is endemic in tropical forested regions of Africa, notably the Congo Basin.

Transmission: It is spread by viral droplets inhaled then coming in contact with mucous membranes of the respiratory tract.

Signs and Symptoms: Symptoms initially are abrupt in onset and could include high fever, muscle pain, headache, malaise, nausea and vomiting and back pain. These symptoms usually occur for 2-4 days before the rash appears. The incubation period average is 12 days with range of 7-17 days.

Treatment: Seek medical attention

Prevention: Smallpox vaccine is available for very limited use.

SPOROTRICHOSIS

Description: It is a fungal infection of the skin caused by *Sporothrix schenckii*.

Area of Risk: Sporadically worldwide. It occurs more often in farmers, gardeners, and horticulturalists. Those individuals working with thorny plants, bales of hay, or sphagnum moss.

Signs and Symptoms: A red raised bump may appear 1-12 weeks after exposure. The lesion will appear at the site where the fungus entered the body. Several more bumps may appear and become ulcerative and be very slow to heal. This fungal infection can spread to other areas of the body, but rarely affects joints, bones, lungs or other tissues.

Treatment: Potassium iodine or possibly a new drug called itraconazole may be used. Treatment usually lasts for several weeks until the lesions have healed.

Prevention: Wearing gloves and long sleeves when working in high risk areas. Outbreaks are more likely related to handling moss.

SWIMMERS' ITCH

(cercarial dermatitis, schistosome dermatitis)

Description: Swimmers' itch is a self-limiting parasitic skin rash. It infects birds, semi-aquatic mammals, and snails. It occurs worldwide in fresh or salt water that is infected by bird, rodent or snail contamination.

Areas of Risk: It is worldwide and occurs more in Africa, China, and other warmer climate areas.

Transmission: Exposure occurs by swimming or wading in contaminated water and allowing the skin to air-dry rather than toweling off. In the developmental life cycle the parasites are released from snails, move through the water and are able to penetrate human skin. The parasite can penetrate the skin but are unable to enter into the blood stream and soon die.

Signs and Symptoms: If infested water is allowed to air dry on the skin, a tingling or prickly sensation may be felt as the parasite enters the skin. An itch, red, raised rash, occurs within 24 hours. The rash will peak at 48-

72 hours and usually subsides in 1-2 weeks. It is important to observe for signs of secondary infection, such as increase redness, tenderness, with thick yellow/white drainage.

Treatment: The diagnosis of swimmers' itch is reliant on a history of exposure as well as the appearance of a rash. If the case is mild, use compresses and a topical over-the-counter hydrocortisone cream. Seek medical care in more severe cases or those with secondary infections.

Prevention: The most effective therapy is prevention. It is important to vigorously towel dry after swimming or wading. Avoid swimming in known contaminated water or areas where there are large accumulations of snails.

TAENIASIS

Description: Is a tapeworm infection caused from ingesting raw or undercooked beef or pork.

Areas of Risk: Taeniasis occurs worldwide but is more prevalent in Latin America, Africa, Southeast Asia, and Eastern Europe.

Transmission: Transmission occurs when humans ingest raw or undercooked meat, especially pork. Transmission can also occur through the fecal-oral route from a contaminated person to an uncontaminated person.

Signs and Symptoms: Nervousness, insomnia, anorexia, weight loss, abdominal pain, and digestive disturbances. Segments of worms emerging from the anus may be the only symptom in some individuals.

Treatment: Seek medical care. Medication such as praziquantel is used in treatment.

Prevention: Avoid eating undercooked beef and pork. Follow safe food and water. Good hand washing.

TRACHOMA

Description: It is an infection of the eye.

Areas of Risk: This disease occurs worldwide, but mostly endemic in poorer rural communities in developing countries. Blinding trachoma is still widespread in the Middle East, northern and sub-Saharan Africa, parts of India, Southeast Asia and China, Latin America and Australia (among Aboriginals).

Transmission: Through direct contact with infectious ocular and nasopharyngeal discharges on fingers or indirect contact with contaminated towels and clothes. Flies also contribute to the spread of the disease.

Signs and Symptoms: Inflammation of the eyelids, primarily the upper lid and redness to the cornea of the eye.

Treatment: Seek medical attention. Antibiotics such as azithromycin would be used in treatment.

Prevention: Wash hands and face frequently with soap and water. Avoid common-use towels in public places.

TRICHINOSIS (TRICHINELLOSIS)

Description: An infection caused by the worm species *Trichinella*.

Area of Risk: Worldwide

Transmission: By ingesting contaminated raw or undercooked meat of infected animals.

Sign and Symptoms: Begin 1-2 days after ingestion. Symptoms include diarrhea, nausea, vomiting, fever, fatigue, and abdominal discomfort. It can be followed by fevers, headaches, chills, cough, aching joints/muscles, and swollen eyes. In heavy infections decreased coordination, breathing and heart problems may occur. Severe cases can be fatal.

Treatment: Seek medical treatment. Prescription medications may be used in treatment.

Prevention: Avoid eating raw or undercooked meat of bears, wild felines, pork, fox, dog, wolf, horse, seal or walrus.

TUBERCULOSIS

Description: Is a bacterium that can cause pulmonary infections.

Areas of Risk: TB occurs worldwide, but the incidence varies greatly.

Transmission: Because of the mode of transmission (airborne in confined spaces) U.S. travelers are not at an increased risk unless travel is for extended time. It can be transmitted through unpasteurized milk or milk products from infected cattle.

Signs and Symptoms: symptoms are usually gradual over weeks and months. Initial symptoms include fatigue, weight loss, anorexia, low-grade fever. Then later coughing, night sweats and expectorating blood.

Treatment: Seek medical attention. Medications such as rifampin or isoniazid would be used in treatment over several months.

Prevention: A traveler who anticipates prolonged exposure to TB endemic areas should have a TB skin test before leaving and, if negative, repeat test about 3 months after return. The method of choice for testing is Mantoux. It is advised to avoid crowded environments such as homeless shelters, hospitals, and prisons. A respiratory protective device (N-95 respirator mask) can be worn if those environments cannot be avoided. BCG vaccine is given in most developing countries to decrease the severe consequences of TB in infants and children. It is not as effective in adults and is not routinely recommended for use in the United States.

TULAREMIA

Description: Is an infection caused by the organism *Francisella tularensis*. This infection is common in wild rodents.

Areas of Risk: Worldwide. Endemic areas include North America and parts of Europe and Asia. It is rare in the United States. It has the potential to be aerosolized and used as a bioterrorist agent, which would result in a large number of pneumonia cases several weeks after exposure.

Transmission: It can be transmitted through 1) Broken skin/open wound in direct contact with an infected carcass or live animal 2) Being bitten by an infected flea or tick 3) More rarely through the ingestion of infected meat.

Signs and Symptoms: red area on the skin that becomes an open wound, headache, swollen glands, muscle aches, shortness of breath, eye infections, fever, chills, weight loss and joint stiffness. Complications could include: meningitis, pericarditis (inflammation of the lining of the heart), infection in the bone or pneumonia. In treated cases the fatality rate is less than 1%.

Treatment: Antibiotics such as Streptomycin or Tetracycline are commonly used.

Prevention: Avoid contact with potentially infected animals to minimize risk of flea or tick bites, or eating infected meat.

TUNGIASIS

Description: Is a parasitic infestation caused by the female sandfly, *Tunga penetrans*.

Areas of Risk: Africa, Central and South America, West India

Transmission: Penetrations of the skin by the female sandfly. The eggs are expelled over a 3 week period, which form an itchy, infected, red nodule with a small blackish opening in the center. These nodules under the skin are usually found on the feet or area of the body exposed to the ground when sitting or lying down.

Treatment: The nodules usually heal on their own. These areas can be prone to infection, which may require treatment with antibiotics.

Prevention: Wear covering over feet and other areas of the body that would come in contact with the ground/sand. Bathing in hot water after exposure may help to reduce the chances of skin penetration.

TYPHOID and PARATYPHOID FEVER

Description: Is a life-threatening illness caused by a bacterium.

Areas of Risk: The greatest risk to travelers is in the countries of South Asia, East and Southeast Asia, Africa, the Caribbean, and Central and South America.

Transmission: Typhoid Fever is transmitted by consumption of contaminated food and water.

Signs and Symptoms: A persistent high fever is a hallmark symptom. Others include headache, anorexia, malaise, slow heart rate, abdominal pain, weakness, and cough.

Treatment: Seek medical attention immediately and start appropriate antibiotics, such as azithromycin, ciprofloxacin, or ofloxacin.

Prevention: Typhoid vaccine is recommended for travel to areas listed above. The injectable vaccine is a single dose and provides protection for 2 years. The oral vaccine is taken every other day for four doses, and provides protection for 5 years. Follow safe food and water precautions.

TYPHUS

Description: An illness in humans caused by species of *Rickettsia*.

Areas of Risk: Occurs in endemic foci in mountainous regions of Mexico, Central and South America, central and east Africa, and numerous countries of Asia. It occurs more often in colder months when clothing infested with lice are not laundered and person to person contact spreading lice is greater.

Transmission: Typhus Fever is caused by several different rickettsiae, resulting in similar disease. Typhus is transmitted through the bites of fleas, lice, and ticks or through blood transfusions.

Signs and Symptoms: Sudden onset of headache, chills, prostration, fever, and general pains. A rash may appear on day 5 or 6, initially on the upper trunk, spreading to the entire body, but not the face, palms, or soles of the feet. Seek medical attention immediately.

Treatment: Seek medical attention and antibiotics would be used as treatment.

Prevention: Avoid activity in infested scrub brush habitats, use repellents with DEET (Deep Woods Off, Repel and Ultrathon) to prevent tick attachment, and remove ticks immediately and wash area with soap and water. Avoid louse- infested dwellings and areas where rodents may be prevalent.

VIBRIO PARAHAEMOLYTICUS

Description: *Vibrio parahaemolyticus* is a bacterium in the same family as those that cause cholera.

Areas of Risk: It lives in brackish saltwater and causes gastrointestinal illness in humans. *V. parahaemolyticus* naturally inhabits coastal waters in the United States and Canada and is present in higher concentrations during summer; it is a halophilic, or salt-requiring organism.

Signs and Symptoms: When ingested, *V. parahaemolyticus* causes watery diarrhea often with abdominal cramping, nausea, vomiting, fever and chills. Usually these symptoms occur within 24 hours of ingestion. Illness is usually self-limited and lasts 3 days. Severe disease is rare and occurs more commonly in persons with weakened immune systems. *V. parahaemolyticus* can also cause an infection of the skin when an open wound is exposed to warm seawater.

Transmission: Most people become infected by eating raw or undercooked shellfish, particularly oysters. Less commonly, this organism can cause an infection in the skin when an open wound is exposed to warm seawater.

Treatment: Treatment is not necessary in most cases of *V. parahaemolyticus* infection. There is no evidence that antibiotic treatment decreases the severity or the length of the illness. Patients should drink plenty of liquids to replace fluids lost through diarrhea. In severe or prolonged illnesses, antibiotics such as tetracycline or ciprofloxacin can be used. The choice of antibiotics should be based on antimicrobial susceptibilities of the organism.

Prevention: Most infections caused by *V. parahaemolyticus* in the United States can be prevented by thoroughly cooking seafood, especially oysters. Wound infections can be prevented by avoiding exposure of open wounds to warm seawater. When an outbreak is traced to an oyster bed, health officials recommend closing the oyster bed until conditions are less favorable for *V. parahaemolyticus*.

Timely, voluntary reporting of *V. parahaemolyticus* infections to state health departments and to regional offices of the Food and Drug Administration (FDA) will help collaborative efforts to improve investigation of these infections. Regional FDA specialists with expert knowledge about shellfish assist state officials with tracebacks of shellfish. When notified rapidly about cases, officials can sample harvest waters to discover possible sources of infection and may close oyster beds. Ongoing research may help us to predict environmental or other factors that increase the chance that oysters carry *Vibrios*.

WEST NILE FEVER

Description: Is potentially serious viral infection.

Areas of Risk: Outbreaks in Egypt, Israel, India, France, Romania, Czech Republic and is widespread in parts of Africa, western Asia, the northern Mediterranean area and parts of the North America.

Transmission: Transmission is through the bite of an infected mosquito, through blood transfusion, organ transplants or from mother to child (via breastfeeding or pregnancy).

Signs and Symptoms: About 80% of infected individuals will have no symptoms. In milder forms of this illness symptoms would include, fever, headache, malaise, rash, nausea, and vomiting. With severe illness would be high fever, neck stiffness, headache, disorientation, stupor, tremors/convulsions, vision loss, numbness and paralysis, and coma.

Treatment: Seek medical attention.

Prevention: Follow personal protection measures including the use of insect repellent with DEET (Deep Woods Off, Repel, and Ultrathon), wear clothing to cover arms and legs completely, stay indoors from dusk until dawn, and use mosquito netting for sleep in unscreened or poorly screened sleeping quarters.

YELLOW FEVER

Description: Is a viral disease.

Areas of Risk: Occurs in parts of sub-Saharan Africa and tropical South America. Some countries require a yellow fever certificate of vaccination if traveling from a country with yellow fever outbreaks.

Transmission: Yellow Fever is transmitted by the bite of the *Aedes* mosquito that feeds during dusk-to-dawn.

Prevention: Receive a vaccination against Yellow Fever. Follow personal protection measures including, use of insect repellent with DEET (Deep Woods Off, Repel, and Ultrathon), wear clothing to cover arms and legs completely, stay indoors from dusk until dawn, and use mosquito netting for sleep if unscreened or poorly screened sleeping quarters.

Signs and Symptoms: Sudden onset of fever and chills, headache, backache, muscle pain, nausea and vomiting. Pulse is slow and weak out of proportion to elevated temp. Jaundice (yellow skin and eyes) may be seen early. A remission of hours or days, may occur, and then may progress too serious and life threatening disease. Seek medical attention at first sign of disease.

Treatment: Seek medical care.

Post Travel information

The most frequent complaint of travelers upon return is gastrointestinal upset such as, nausea, vomiting, abdominal pain and diarrhea. Presence of fever or skin rashes is also a concern. The most serious symptom would be fever. It could indicate a life threatening illness such as malaria or a hemorrhagic fever, if those diseases were risks to the area you traveled.

Illness may not occur immediately so it is important to advise your health care provider where you have traveled in the past several months. If you have traveled to an area where malaria is a risk a fever could indicate a medical emergency. Most travelers will become ill within 12 weeks after leaving a malaria risk area, although symptoms may not appear for up to 6-12 months.

It is important if you develop to inform your health care provider if you have a tattoo or body piercing done while traveling as well, having had unprotected intercourse or an injection. Screening tests may be ordered to check for Hepatitis, STD's, and HIV. Testing of blood, stool and/or urine may be done too check for parasites or organisms associated with traveler's diarrhea such as schistosomiasis

CDC: In the News (updated 4/16/10)

2010 Measles Update

This information is current as of today, April 17, 2010 at 18:08 EDT

Updated: April 09, 2010

[Measles](#) remains a common disease in many parts of the world. Worldwide, an estimated 10 million cases and 164,000 deaths from measles occur each year. Measles is a leading cause of vaccine-preventable deaths among young children. Measles outbreaks are common in many areas, including Europe. Although the risk for exposure to measles can be high for many U.S. travelers and citizens living in other countries (expatriates), the illness can be prevented by a vaccination.

Recent Outbreak Activity

Some examples of current measles activity include recent measles outbreaks have occurred in the Philippines and several countries in Africa.

- During January and February 2010, more than 1,300 cases of measles (including five deaths) were reported throughout the Philippines. Of these cases, more than 740 cases have been laboratory or clinically confirmed, which is twice as many confirmed measles cases as during the same time period last year. Measles outbreaks have been reported in the capital city of Manila and in 10 other areas of the country.
- Over the past year, several African countries have reported high numbers of measles cases. South Africa has had an ongoing outbreak of measles and has reported more than 9,000 confirmed cases during January 1 through March 12, 2010. Measles cases are being reported throughout the country, but a majority of the cases are occurring in Gauteng Province.

Because of the risk of measles in both developed and developing countries, all international travelers should be up to date on immunizations, regardless of the travel destination. In addition, expatriates should make sure they are vaccinated against measles, especially in areas where outbreaks are occurring, such as the countries listed above.

Advice for Travelers and Expatriates

- Be up to date on all routine vaccines, including measles vaccine. (See the [child and adolescent vaccination schedule](#) and [routine adult vaccination schedule](#).)
- If you are traveling with a child, make sure he or she is up to date on all recommended vaccines. Measles vaccine, usually given as the combined measles-mumps-rubella (MMR) vaccine, is generally first given at 12 months of age in the United States, but is recommended for children as young as 6 months of age who are traveling outside the United States. If your child is older than 6 months of age and is traveling internationally, talk to a doctor about getting the measles vaccine.
- Keep a copy of your immunization records with you as you travel.
- If you are an expatriate, make sure that you are immune to measles. (See the section under information for health-care providers that outlines who is considered immune to measles.) If you are not immune, consider getting a measles vaccine from a reliable local health-care facility.
 - U.S. Embassies or Consulates maintain lists of local medical facilities. See the [Doctors/Hospitals Abroad](#) webpage for more information.
 - The International Society of Travel Medicine (ISTM) has member clinics in many countries with doctors who speak English and are familiar with treating expatriates. You can search the [ISTM clinic directory](#) for more information.

Additional Information

Measles is one of the most highly contagious infectious diseases. It is spread by contact with an infected person and through coughing and sneezing. Measles virus can remain active and contagious for up to 2 hours in the air or on surfaces.

People with measles usually have a rash, high fever, cough, runny nose, and red, watery eyes. Some people who become sick with measles also get an ear infection, diarrhea, or a serious lung infection, such as pneumonia. Many times people with measles are hospitalized. Although severe cases are rare, measles can become severe enough to cause swelling of the brain (encephalitis) and even death. Measles can cause especially severe disease in infants and in people who are malnourished or who have weakened immune systems from a medical condition (such as a result of HIV infection, leukemia, lymphoma, or cancer) or from certain drugs or therapies.

Information about the Vaccine

Vaccines that protect against measles are live-virus vaccines. Currently, the recommended vaccine, which is the only available vaccine for purchase in the United States, is the measles-mumps-rubella (MMR) vaccine.

Information for Health-Care Providers

It is important to ensure that travelers are immune to measles before they travel internationally.

- **Children 6–11 months of age who are traveling outside the United States**
 - Patients should receive a first dose of measles-containing vaccine (see above.)
 - Remember: Measles or MMR vaccines given before 12 months of age should not be counted as part of the routine series. Children who receive measles or MMR vaccines before age 12 months will need two more doses of MMR vaccine, the first of which should be administered at 12–15 months of age (12 months if the child remains in a high-risk area), and the second at least 28 days later.
- **Children 12 months or older, adolescents, and adults**
 - People who have received two doses of MMR or other live measles-containing vaccine are considered immune to measles.
 - People are also considered immune to measles if they have had the diagnosis of measles documented by a physician, have laboratory evidence of immunity, or were born before 1957.
 - People who cannot be considered immune based on the above criteria should receive MMR vaccine. See the [adult vaccination schedule](#) to determine if one or two doses (separated by at least 28 days) are needed.


If a patient has symptoms of a fever, cough, red eyes, runny nose, and a red, raised rash and has a history of any recent international travel, measles should be considered in diagnosis.

Resources

For more information, see the following links:

- [Measles \(Rubeola\)](#) (CDC Health Information for International Travel 2010)
- [MMR Vaccine, Recommendations of the Advisory Committee on Immunization Practices \(ACIP\)](#) (MMWR Recommendations and Reports, May 22, 1998)
- [MMR Vaccine Information Statement](#) (CDC)
- [Vaccines and Vaccine-Preventable Diseases](#) (National Center for Immunization and Respiratory Diseases website)

Information Sources:

- [South Africa National Institute for Communicable Diseases](#)
 - [Case-based rash surveillance report](#) (PDF) , March 16, 2010
- [CDC Measles \(Rubeola\) website](#)
- [World Health Organization Measles Media Centre](#)

Meningococcal Disease and Travel to Africa

This information is current as of today, April 17, 2010 at 18:50 EDT

Released: April 05, 2010

[Meningococcal disease](#) (commonly referred to as meningitis or epidemic meningitis) is a serious, sometimes fatal bacterial infection. Meningococcal disease occurs worldwide, but the sub-Saharan African “[meningitis belt](#)” is an area at uniquely high risk for epidemic meningitis. The meningitis belt includes parts of the following countries: Senegal, Guinea, The Gambia, Guinea-Bissau, Mali, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Benin, Togo, Nigeria, Niger, Chad, Sudan, Ethiopia, Uganda, Kenya, and Eritrea.

Meningitis epidemics occur regularly in the meningitis belt during the dry season (December through June). However, during January 2010, Burkina Faso and Chad had more reported meningitis cases compared with the number of reported cases during the same time period in 2009.

Recommendations for Travelers

People traveling to the meningitis belt in sub-Saharan African ([see map](#)) during the remaining months of the dry season (December through June) should be aware of this season’s ongoing disease activity and get a [meningococcal vaccine](#). Protection develops 7–10 days after receiving the vaccine, so if possible, travelers should get vaccinated at least 10 days before travel. Travelers leaving in less than 10 days should still get vaccinated before travel.

Transmission and Treatment of Meningitis

The bacteria that cause epidemic meningitis are spread by close, direct, or prolonged contact with an infected person through saliva or respiratory and throat secretions. This kind of contact includes intimate kissing or living in the same home. These bacteria are **not** spread by casual contact or by simply breathing the air where a person with meningitis has been.

Anyone who develops signs and symptoms of meningitis should seek medical care **immediately**. Antibiotics can treat the infection but need to be started as soon as possible.

Symptoms of meningitis:

- High fever
- Headache
- Stiff neck
- Nausea
- Vomiting
- Discomfort looking into bright lights
- Confusion
- Sleepiness

Additional information about meningococcal disease and general ways to stay healthy during travel can be found below.

Information for Health-Care Providers

The infectious agent of meningococcal disease is a gram-negative diplococcus, *Neisseria meningitidis*. Five meningococcal serogroups are associated with the majority of disease: A, B, C, Y, and W-135.

Two meningococcal vaccines are currently available in the United States. Both protect against meningococcal disease caused by serogroups A, C, Y, and W-135:

- Quadrivalent meningococcal conjugate vaccine (MCV4) is licensed for use among people 2–55 years of age and is the preferred vaccine for this age group. One dose is recommended for travelers.
 - ACIP recommends that children previously vaccinated with MCV4 or MPVS4 at ages 2–6 years who remain at an increased risk for meningococcal disease should receive an additional dose of MCV4 3 years after their previous meningococcal vaccine and every 5 years thereafter, if at continued risk.

- Likewise, persons who were previously vaccinated with MCV4 or MPVS4 at ages 7–55 years and who remain at an increased risk for meningococcal disease should receive an additional dose of MCV4 5 years after the previous dose and every 5 years thereafter, if at continued risk.
- Quadrivalent meningococcal polysaccharide vaccine (MPVS4) is licensed for people 2 years of age and older. This vaccine should be used in people aged 55 years and older. Revaccination with MPSV4 is needed after 3–5 years for travelers or others who continue to require vaccination. MCV4 may be given to people who have received MPSV4 previously.

Travelers should, if possible, be vaccinated 7–10 days before travel to allow for the development of protective antibody levels.

CDC recommends preventive antibiotics (chemoprophylaxis) for close contacts of a person with meningococcal disease to prevent secondary cases. Antibiotics for chemoprophylaxis include rifampin, ciprofloxacin, and ceftriaxone. Ceftriaxone is recommended for pregnant women.

Additional information for health-care providers

Technical

- [Clinical Information for Healthcare Professionals from CDC’s Division of Bacterial Diseases](#)
- [Meningococcal Disease](#) in *CDC Health Information for International Travel 2010*.
- The Report of the Committee on Infectious Diseases’ [Red Book Online](#)

Vaccine Recommendations

- Recommendations from the Advisory Committee on Immunization Practices (ACIP), [Meningococcal Disease: Publications](#)

Additional information for travelers

General

- [Meningococcal Disease](#) in *CDC Health Information for International Travel 2010*
- [CDC Travelers’ Health](#) homepage
- [Destinations page](#) with links to learn about the health risks for the country you are visiting

Q Fever in The Netherlands

This information is current as of today, April 17, 2010 at 18:59 EDT

Updated: March 31, 2010

The Netherlands National Institute for Public Health and the Environment continues to report an outbreak of Q fever in The Netherlands. In 2009, 2,356 human cases were reported and at least 2,293 of those cases were confirmed along with 6 deaths. Between January 1–March 18, 2010, 247 human cases were reported along with 6 deaths. The exact number of confirmed cases during that time is not known. Most of these cases have been in Noord (North) Brabant, Gelderland, Limburg, and Utrecht Provinces in the southern part of the country, although cases have been reported throughout the country. These cases represent an ongoing outbreak of Q fever in the Netherlands since 2007; 190 cases were reported in 2007 and 1,000 cases in 2008.

Recommendations for U.S. Travelers

Q fever is a disease that is usually passed from infected farm animals to humans. The risk of Q fever infection is low; however, if you are traveling to The Netherlands, follow these recommendations to help stay healthy:

- Avoid farms in the affected areas.
 - If you cannot avoid visiting farms, avoid going near areas where animals are kept, such as barns and pens, and avoid direct contact with animals. Breathing in soil and dust contaminated by animals can make you sick.
- Eat only milk and dairy products that have been pasteurized. Do not drink raw milk or eat raw milk products.

- Wash your hands often with soap and water, especially if you have been near animals. If soap and water are not available, use an alcohol-based hand gel with at least 60% alcohol.

Pay attention to your health after your trip. People can become sick with Q fever 2–5 weeks after being exposed to the disease. If you feel sick, go to the doctor and tell him or her that you have traveled to The Netherlands.

More Information

Q fever is a disease caused by *Coxiella burnetii*, a species of bacteria found all around the world. Q fever is a zoonotic disease, which means that it is passed from animals to humans. Cattle, sheep, and goats are the primary carriers of *C. burnetii*; however, other animals can also carry the bacteria. Infected animals excrete *C. burnetii* through milk, urine, and droppings (feces), and during the birthing process. *C. burnetii* is resistant to heat, drying, and many common disinfectants, allowing it to survive for a long time in the environment. People can become infected with Q fever by breathing in the *C. burnetii* bacteria, usually through contaminated barnyard dust and soil. People can also get infected by drinking or eating unpasteurized (raw) milk and dairy products. Q fever has a wide variety of clinical manifestations in humans including flu-like illness, pneumonia, and hepatitis. Q fever can be treated with antibiotics, and most people will recover fully. For additional information about Q fever and the outbreak in The Netherlands, see the following links:

- [Q Fever](#) (CDC Division of Viral and Rickettsial Diseases)
- [Q Fever and Animals](#) (CDC Healthy Pets, Healthy People)
- [Rickettsial Infections](#) (CDC Health Information for International Travel 2010)
- [Sustained Intensive Transmission of Q Fever in the South of the Netherlands, 2009](#) (Eurosurveillance, Volume 14, Issue 19, 14 May 2009)
- [Q Fever Incidence by Municipality Map \(Dutch\)](#)

Source: Netherlands National Institute for Public Health and the Environment (RIVM)

For additional health information about travel to The Netherlands, visit [The Netherlands destination page](#) on CDC’s Travelers’ Health website.

Update on the Global Status of Polio

This information is current as of today, April 17, 2010 at 19:02 EDT

Updated: December 16, 2009

On this Page:

[Information for Travelers](#)

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Information for Travelers

Although there is currently no known risk of catching wild polio virus in the United States and many other parts of the world, polio is still a risk to travelers who are going to certain countries. Polio is a serious disease that can cause paralysis and death. If you are going to one of the countries listed below, CDC recommends that you make sure you are up to date on your polio vaccine. If you are not up to date you will need to get a booster shot.

Polio Boosters Are Recommended for Travelers Visiting the Following Countries:

Afghanistan	Angola	Bangladesh	Benin
Bhutan	Burkina Faso	Burundi	Cameroon
Central African Republic	Chad	Congo	Côte d’Ivoire
Democratic Republic of the Congo (DRC)		Djibouti	Equatorial Guinea
Eritrea	Ethiopia	Gabon	Gambia
Ghana	Guinea	Guinea-Bissau	India
Kenya	Liberia	Mali	Mauritania
Namibia	Nepal	Niger	Nigeria

Pakistan
Somalia
Uganda

Rwanda
Sudan
Zambia

Senegal
Tanzania

Sierra Leone
Togo

More About Polio

Polio is a disease caused by a germ that lives in the throat and intestines. It is most often spread through contact with the stool (bowel movement) of an infected person. Polio germs can also be spread through food and water. The disease mainly affects children under 5 years old, but unvaccinated people of any age are at risk.

Advice for Travelers

If you are traveling to a country where you are at risk of getting polio, talk to your doctor to find out if you are up to date with your polio vaccination. Even if you were vaccinated as a child or have been sick with polio before, you may need a booster shot before you travel, to make sure that you are protected against all 3 types of poliovirus. If you are traveling with children, be sure that they have been vaccinated, too.

It is also important to wash your hands with soap and water. If soap and water are not available, you can use an alcohol-based hand gel. Wash your hands often, but especially at these times:

After

Using the bathroom
Changing diapers
Coughing or Sneezing

Before

Eating or drinking
Preparing food

To help prevent polio and other diseases, follow these tips to help make food and drink choices:

- Eat foods that are fully cooked and served hot.
- Eat and drink only dairy products that have been pasteurized.
- Eat only fruits and vegetables that you can wash with safe water and peel yourself.
- Drink only bottled or boiled water or beverages that have been bottled and sealed (water, carbonated drinks, or sports drinks). Avoid tap water, fountain drinks, and ice. If this is not possible, learn how to [make water safer to drink](#).

For more travel health information, see the [Destinations](#) section and search for the country you are planning to visit.

Information for Health-Care Professionals

Polio vaccination is recommended for all travelers to polio-endemic areas, to countries with recent imported cases, or to countries at risk because of proximity to endemic or recently infected countries.

According to the Global Polio Eradication Initiative (GPEI),* since 2006, only 4 countries (Afghanistan, India, Nigeria, and Pakistan) remain polio-endemic with indigenous poliovirus circulation. In four additional countries in Africa, imported wild poliovirus was either known (Angola, Chad) or suspected (Democratic Republic of the Congo, southern Sudan) to have persisted for >12 months as of mid-2009, leading to their designation as having “re-established” transmission. This designation is considered equivalent to polio-endemic countries for travel preparation purposes.

The following countries, however, have had imported polio cases or cases related to an imported poliovirus in the past 24 months: Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Ethiopia, Ghana, Guinea, Kenya, Liberia, Mali, Mauritania, Nepal, Niger, Senegal, Sierra Leone, Sudan, Togo, and Uganda. The following countries are at risk for poliovirus importation because they are located near endemic or recently infected countries: Bangladesh, Bhutan, Congo, Djibouti, Equatorial Guinea, Eritrea, Gabon, Gambia, Guinea-Bissau, Mauritania, Namibia, Rwanda, Senegal, Sierra Leone, Somalia, Tanzania, and Zambia. This updated notice includes changing the status of Burundi, and Cameroon from "at risk for importation" to countries reporting cases. It also identifies

Angola, Chad, Democratic Republic of the Congo, and southern Sudan as destinations with re-established transmission.

Outbreaks continue to be a risk for major portions of Africa and some portions of southern Asia/Asian subcontinent, and susceptible people are still at risk for infection until poliovirus transmission is eliminated worldwide. Therefore, adults and children traveling to these areas should be fully vaccinated against polio according to the recommendations below.

Vaccine Recommendations: Infants and Children

- The Advisory Committee on Immunization Practices (ACIP) recommends that all infants and children in the United States should receive 4 doses of inactivated poliovirus vaccine (IPV), administered at 2 months, 4 months, 6–18 months, and 4–6 years of age.
- If accelerated protection is needed, the minimum interval between the first three doses is 4 weeks, and the minimum interval from dose 3 to dose 4 is 6 months.
- A dose of IPV should be administered at age ≥ 4 years regardless of the number of previous doses.

Vaccine Recommendations: Adults

- Travelers who have received the series with either IPV or oral polio vaccine (OPV) as a child without an adult booster dose (either OPV or IPV) should receive another dose of IPV before departure.
- Available data do not indicate the need for more than one lifetime IPV booster dose for adults.
- Travelers who are unvaccinated, incompletely vaccinated, or whose vaccination status is unknown should receive 3 doses of IPV (2 doses at 4–8 week intervals followed by a third dose 6–12 months after the second dose). (See [Chapter 2, Poliomyelitis](#), *CDC Health Information for International Travel 2010*, for details.)

More Information

Polio is an infectious disease caused by a virus and spread from person to person. The disease mainly affects children under 5 years of age. Polio may be spread when the virus enters the mouth of a person who has come in contact with the stool of an infected person (for example, by changing diapers and not washing hands before touching the mouth) or from fecal contamination of food or drinking water. Most people infected with the poliovirus have no symptoms, but in some people the infection causes paralysis and even death. Until the 1950s, polio crippled thousands of children in industrialized countries. Soon after the introduction of effective vaccines in the late 1950s (IPV) and early 1960s (OPV), polio was brought under control and practically eliminated as a public health problem in industrialized countries.

OPV has not been used in the United States since 2000; however, it is used in many other countries and has played a major role in eliminating polio from large parts of the world. IPV, which is given by intramuscular injection, is now used in the United States and a number of other developed countries.

For more information, see:

- [Poliomyelitis](#) (*CDC Health Information for International Travel 2010*)
- [Polio Vaccination](#) (CDC's National Center for Immunization and Respiratory Diseases)
- [Immunization Schedules](#) (CDC's National Center for Immunization and Respiratory Diseases)

See the [Global Polio Eradication Initiative](#) website for more information. For additional information about these outbreaks, see the [Monthly Situation Reports](#).

* The Global Polio Eradication Initiative comprises the World Health Organization (WHO), Rotary International, the United Nations Children's Fund (UNICEF), the U.S. Centers for Disease Control and Prevention (CDC), national ministries of health, and other partners.

CDC Outbreak Notice

Update: Dengue, Tropical and Subtropical Regions

This information is current as of today, April 17, 2010 at 19:09 EDT

Updated: March 16, 2010

Situation Information

Dengue fever is the most common cause of fever in travelers returning from the Caribbean, Central America, and South Central Asia.¹ This disease is caused by four similar viruses (DENV-1, -2, -3, and -4) and is spread through the bites of infected mosquitoes.

Dengue infections are frequently reported from most tropical countries of the South Pacific, Asia, the Caribbean, the Americas, and Africa. Although dengue transmission often occurs in both rural and urban areas, dengue infections are most frequently reported from urban settings.

Since early 2009, an increased number of dengue cases have been reported from countries throughout several regions of the world.

Africa

Cape Verde: In 2009, more than 21,000 suspected cases and 6 deaths (as of December 6, 2009) were reported. Approximately 60 cases were reported in nearby Senegal, according to the UN Office for the Coordination of Humanitarian Affairs.

South Pacific

Dengue activity continues to circulate throughout this region. Examples of outbreaks include the following:

- Malaysia: In the first 6 weeks of 2010, more than 6200 cases and 23 deaths were reported throughout the country, especially in Selangor and Sarawak.
- Indonesia: Dengue activity is ongoing. From January–October 2009, more than 100 deaths were attributed to dengue hemorrhagic fever. In December 2009, the Ministry of Health issued an alert about heightened dengue hemorrhagic fever transmission during this rainy season.
- Sri Lanka: As of February 23, 2010, 7500 cases have been reported throughout the country, including in the Colombo capital district.

Central and South America and the Caribbean

Certain countries in Central and South America as well as in the Caribbean, are reporting dengue activity. These areas include Brazil, Colombia, Guatemala, Honduras, Nicaragua, Puerto Rico, St. Barthelemy, and Saint Martin.

Middle East

Dengue activity has been reported in recent months in this region, including areas popular among travelers such as Jeddah and Mecca in Saudi Arabia.

To view areas where cases have been reported in previous years, see the [Distribution of Dengue maps](#). For more information on dengue and updates on worldwide activity, see CDC's [Dengue](#) website and WHO's [Dengue webpage](#).

Yellow Fever in Brazil

This information is current as of today, April 17, 2010 at 19:21 EDT

Updated: March 02, 2010

Current Situation

Yellow fever cases have occurred throughout southern Brazil, mainly in the states of Rio Grande do Sul and São Paulo. Yellow fever occurs in sub-Saharan Africa and tropical South America and is spread to people through the bite of infected mosquitoes. Symptoms can include sudden onset of fever, chills, headache, backache, nausea, and vomiting.

From December 2008 through April 2009, the state of Rio Grande do Sul, on the southern tip of Brazil, reported 20 confirmed human cases of yellow fever infection. Nine of these people died. This is the first time since 1966 that human yellow fever cases have been reported in Rio Grande do Sul. In response to the situation, the Brazilian Ministry of Health has added a number of municipalities to the yellow fever risk area, which now includes the state's capital city of Porto Alegre.

From February through April 2009, the state of São Paulo in Southern Brazil reported 28 confirmed human cases of yellow fever, including 11 deaths. These cases occurred in municipalities that lie outside the reported yellow fever risk area. In response, the Brazilian Ministry of Health has added a number of municipalities to the yellow fever risk area for São Paulo.

Yellow Fever Risk Areas in Brazil

Currently, Brazil recommends yellow fever vaccination for travelers to the following states:

- All areas of Acre, Amapá, Amazonas, Distrito Federal (including the capital city of Brasília), Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Rondônia, Roraima, and Tocantins.
- Other designated areas of the following states: Bahia, Paraná, Piauí, Rio Grande do Sul, Santa Catarina, and São Paulo. (Refer to the [Updated CDC Yellow Fever Map for Brazil](#) to see areas of these states with risk for yellow fever transmission.) Vaccination is also recommended for travelers visiting Iguassu Falls.
- Vaccination is NOT recommended for travel to the following coastal cities: Rio de Janeiro, São Paulo, Salvador, Recife, and Fortaleza.

For information on risk in specific municipalities in partially endemic states for yellow fever, please see the [Brazilian Ministry of Health yellow fever risk area search portal](#) (in Portuguese).

Chikungunya Fever in Asia and the Indian Ocean

This information is current as of today, April 17, 2010 at 19:22 EDT

Updated: February 18, 2010

Situation Information

Since 2006, parts of Asia and the Indian Ocean region have reported chikungunya fever activity. Several countries have increased surveillance for this disease, and cases continue to be reported throughout this region.

Chikungunya fever is a disease caused by a virus that is spread to people through the bite of infected mosquitoes. Symptoms can include sudden fever, joint pain with or without swelling, chills, headache, nausea, vomiting, lower back pain, and a rash. Chikungunya mainly occurs in areas of Africa and Asia. In 2007, limited transmission of chikungunya virus occurred in Italy.

The following examples highlight some recent chikungunya activity in Asia and the Indian Ocean region:

Indonesia

A chikungunya outbreak has been reported in the southern province of Lampung on the island of Sumatra. From the second half of December 2009 through the beginning of January 2010, 6,700 chikungunya cases were reported. In 2009, no deaths due to chikungunya fever were reported, although a total of 43,206 cases were reported across the country from 12 provinces.

Thailand

In 2009, a large outbreak of chikungunya fever affected the country, particularly the southern region, including some tourist destinations, such as Phuket. According to the Ministry of Public Health in Thailand, over 49,069 cases were documented in more than 50 provinces. Reports from Thailand show that chikungunya virus continues to circulate throughout the country.

Malaysia

In 2009, the Ministry of Health in Malaysia reported over 4,430 cases of chikungunya fever. No deaths were reported. The most affected areas are the northern provinces of Sarawak Kedah, followed by Kelantan, Selangor, and Perak. Chikungunya activity has continued in 2010, with an additional 325 cases reported in the first 5 weeks. The cases occurred predominately in Serawak.

Yellow Fever in Côte d'Ivoire and Guinea

This information is current as of today, April 17, 2010 at 18:59 EDT

Released: February 10, 2010

Since November 2009, a number of yellow fever cases have been reported in Côte d'Ivoire and Guinea, both in West Africa. Yellow fever occurs in sub-Saharan Africa and tropical South America and is spread to people through the bite of infected mosquitoes. Symptoms can include sudden onset of fever, chills, headache, backache, nausea, and vomiting.

Côte d'Ivoire

As of January 8, 2010, 10 suspected cases of yellow fever, including 6 deaths, have been reported in Côte d'Ivoire. Of these suspected cases, three were confirmed by laboratory testing. The cases were reported in the Minignan and Madinani health districts, in the Denguélé region, which is located near the border with Guinea. Over 180,000 doses of yellow fever vaccine have been administered to residents in the region in an attempt to control the outbreak.

Guinea

As of January 12, 2010, one case of yellow fever has been confirmed by laboratory testing. This case occurred in Mandiana Prefecture, in the Kankan region, which lies in the eastern part of the country near the border with Côte d'Ivoire. Six more suspected cases are currently under investigation.

In response to this outbreak, the Ministry of Health in Côte d'Ivoire recently completed a mass vaccination campaign in the affected area. A national mass vaccination campaign is scheduled to take place in Guinea's most affected regions areas later in 2010.

Rabies in Bali, Indonesia

This information is current as of today, April 17, 2010 at 18:27 EDT

Updated: March 29, 2010

In December 2008, the Indonesian Ministry of Agriculture notified the World Organization for Animal Health about a rabies outbreak in dogs on the island of Bali, Indonesia. As of November 2009, the Indonesia Ministry of Health has reported 15 deaths caused by rabies on Bali. Most human and animal rabies cases have been confirmed near popular tourist destinations on the southern tip of Bali. However, because the situation is evolving, CDC advises travelers to take precaution on the **entire island**.

The following activities may put travelers to Bali at higher risk for rabies:

- Working closely with animals of unknown rabies exposure or vaccination history.
- Spending a lot of time in a rural area or participating in outdoor activities such as bicycling, camping, or hiking. These activities increase the risk for coming in contact with animals.
- Touching or playing with animals.
- Adopting animals with the intention of bringing them home to the United States.

2009 H1N1 Flu: Global Situation

This information is current as of today, April 17, 2010 at 18:41 EDT

Updated: March 29, 2010

Announcement:

[Possible 2009 H1N1 Flu Screening for International Travelers](#)

[En Español](#)

Current Situation

2009 H1N1 flu cases have been reported in many countries around the world, including the United States. For the most up-to-date information about where cases of 2009 H1N1 flu are occurring, see the following pages on CDC's H1N1 Flu website:

- 2009 H1N1 flu in the United States, see [2009 H1N1 Flu: Situation Update](#)
- International 2009 H1N1 flu situation, see [2009 H1N1 Flu: International Situation Update](#)