Interim Guidance for Health-Care Professionals Advising Travelers to Tsunami-Affected Areas

This notice is intended to provide information to health-care professionals who assess travelers going to areas affected by recent earthquakes and tsunamis, about current health risks in those areas and recommended vaccines and other measures to minimize infection or injury in travelers. Affected areas include:

- **Sri Lanka—**coastal areas of south, north and east
- **Indonesia—**Sumatra (province Aceh)
- **India—**coastal areas of south and east, Andaman and Nicobar Islands
- **Thailand—**Phang-Nga province, Phuket, Phi Phi Island and Krabi
- **Malaysia—**northwestern states
- **Maldives—**entire islands
- **Myanmar—**southern coastline
- **Somalia, Tanzania and Kenya—**eastern coastlines

For updates about the tsunami, see www.who.int/hac/crises/international/asia_tsunami/en.

Travelers ideally should be assessed by a health-care professional at least 4-6 weeks before travel so recommended vaccines that require spacing over several weeks (e.g., Japanese encephalitis, rabies preexposure) can be completed. All travelers with a history of incomplete or lapsed routine, "childhood" immunization schedules should be brought up-to-date for these vaccines (i.e., diphtheria/tetanus, polio/MMR) before any international travel. A full medical history should be taken to determine fitness for travel. Travelers who are acutely ill, medically or psychologically unstable, or pregnant should be advised to postpone travel if at all possible. In addition, because of the loss of thousands of lives and widespread damage to affected areas, travelers should be made aware they may be at risk for increased emotional stress. Travelers should also be informed about U.S. Department of State advisories against travel to certain areas (see http://travel.state.gov) and that some governments of affected countries may restrict travel to certain areas for health or security reasons.

Immunizations

- **Tetanus/diphtheria (Td)** vaccine or booster for persons not fully vaccinated or vaccinated 5 years ago or more. Fully vaccinated persons should have documented history of at least 3 doses of tetanus-containing vaccine, with the last dose received not more than 5 years ago.

- **Hepatitis A—**initiate even if travel is imminent.

- **Hepatitis B—**for optimal protection, ideally vaccination should begin at least 6 months before travel so that the full vaccine series can be completed. Because some protection is provided by one or two doses, the vaccine series should be initiated, even if it cannot be completed. The vaccine is usually administered as a three-dose series (months 0, 1, and 6). Individual clinicians may choose to use an accelerated schedule (i.e., days 0, 7, and 14) for travelers who will depart before an approved vaccination schedule can be completed. The U.S. Food and Drug Administration (FDA) has not approved accelerated schedules that involve vaccination at more than one time during a single month for hepatitis B vaccines currently licensed in the United States. Persons who receive a

vaccination on an accelerated schedule that is not FDA-approved should also receive a booster dose at least 6 months after the start of the series to promote long-term immunity.

- **Influenza—**for persons working with populations affected by the tsunami or who are in a priority group for vaccination (see www.cdc.gov/flu/). Otherwise, for healthy persons who are not in a target group, vaccine can be given if it is available locally. For travelers not working directly with populations affected by the tsunami, live attenuated influenza vaccine can also be considered for most healthy persons 5-49 years of age who are not pregnant. For details, see www.cdc.gov/nip/publications/acip-list.htm.

- **Typhoid** (oral or injectable)**—**for oral vaccine, regimen should be completed 1 week before potential exposure. For injectable vaccine, 1 dose of the vaccine should be given at least 2 weeks before the expected exposure.

- **Polio—**if no booster since childhood.

- **Measles—**for persons who are not immune. Immunity can be assumed if there is documentation of physician-diagnosed laboratory evidence of measles immunity, proof of receipt of two doses of live measles vaccine on or after the first birthday, or a person was born before 1957. However, measles or MMR vaccine may be given if there is reason to believe a person might be susceptible.

- **Rabies—**proper administration of the rabies preexposure series (days 0, 7, and 21 or 28) requires at least 3 weeks to complete. Although there may be an increased risk of exposure to stray animals in countries affected by the tsunamis, and thus an increased risk of exposure to rabies, there would be little to no value in instituting **incomplete** preexposure prophylaxis for rabies.

  In the event of an exposure, the individual would be considered unimmunized and should receive full postexposure prophylaxis (i.e., RIG + 5 doses of vaccine). If either rabies immune globulin or rabies vaccine is not available at the destination, in the event of an animal bite, the exposed person should either return home or travel to the closest major city where these biologics are available and initiate their rabies postexposure prophylaxis as soon as possible.

- **Japanese encephalitis—**although there may be an increased risk of Japanese encephalitis in all countries in Asia affected by the tsunami, full vaccination requires 2-4 weeks to complete (days 0, 7, 14 or 30). However, an abbreviated schedule of 2 doses (days 0, 7) has been shown to provide seroconversion in 80% of vaccinees and possibly higher in some populations. Because serious adverse reactions to the vaccine (generalized itching, respiratory distress, angioedema, anaphylaxis) can occur in some individuals up to 1 week after vaccination, travelers should be aware of the possibility of delayed reactions.

  For travelers scheduled to depart in 2 weeks or more, JE vaccine should be administered (www.cdc.gov/travel/diseases/jenceph.htm). However, vaccine is not recommended for imminent travel, instead advice should be given about measures to prevent mosquito bites, such as the use of insect repellent and sleeping under insecticide-treated bed nets, preferably treated with permethrin (see www.cdc.gov/travel/bugs.htm).

- **Cholera vaccine—**if outbreaks of cholera are being reported. (Since this immunization is not available in the U.S., it would have to be obtained at an intermediate destination and would require some time for antibody protection to develop.)

- **Yellow fever** vaccine is recommended only for persons traveling to the affected areas in East Africa. **There is no yellow fever risk in Asia.** However, some countries may require documentation of yellow fever vaccination for people traveling from yellow fever endemic areas.

Malaria Prophylaxis

Because conditions for malaria transmission are present (e.g., flooding, heavy rains, potential migration of malaria-infected persons into affected areas, a breakdown in mosquito control) even in areas where antimalarial drugs had not previously been recommended, as a precaution, antimalarial drugs should be taken by travelers to all affected areas except the Maldives. The following is a list of recommended antimalarial drugs* by country.

Doxycycline should be considered as the antimalarial drug of choice because it has the added benefit of protecting against other infections, such as leptospirosis. See www.cdc.gov/travel/malariadrugs.htm for a full description of the drugs and their side effects.

- Sri Lanka – A/P, Dox, Mef
- Indonesia – A/P, Dox, Mef
- India – A/P, Dox, Mef
- Thailand – A/P, Dox, Mef (Phang-Nga province, Phuket, Phi Phi Island and Krabi) and Dox or A/P for areas bordering Burma/Cambodia
- Malaysia – A/P, Dox, Mef
- Burma (Myanmar) – A/P, Dox, Mef and Dox or A/P in the eastern part of country.
  Somalia, Tanzania and Kenya – A/P, Dox, Mef

***(Atovaquone/proguanil or A/P (brand name Malarone™), Doxycycline or Dox (many brand names and generics are available), Mefloquine or Mef (brand name: Lariam™ and generic).**

Travelers who become ill with a fever or flu-like illness either while traveling in a malaria-risk area or after returning home (for up to 1 year) should seek immediate medical attention.

Presumptive Self-Treatment

CDC does have guidelines for travelers who are taking effective prophylaxis but who will be in very remote areas and may need antimalarial medication for self-treatment. Travelers should be advised to take their presumptive self-treatment promptly if they have a fever, chills, or other influenza-like illness and if professional medical care is not available within 24 hours. Travelers should be advised that this self-treatment of a possible malarial infection is only a temporary measure and that prompt medical evaluation is imperative. For CDC recommendations for presumptive self-treatment, see www.cdc.gov/travel/diseases/malaria.

Health-care professionals needing assistance with the diagnosis or management of a suspected case of malaria may call the CDC Malaria Hotline: 770-488-7788 (M-F, 8am-4:30pm, EST). For emergency consultation after hours, call 770-488-7100 and request to speak with a CDC Malaria Branch clinician.

Risks from Injury

The risk for injury during and after a natural disaster is high. Persons who anticipate the need to travel in tsunami-affected areas should be advised to wear sturdy footwear to protect their feet from widespread debris present in these areas. Tetanus (www.cdc.gov/travel/diseases/dtp.htm) is a potential health threat for persons who sustain wound injuries. Any wound or rash has the potential for becoming infected and travelers should be advised to have such wounds or rashes assessed by a health-care provider as soon as

possible. Travelers should also be instructed to immediately cleanse any wounds, cuts, or animal bites with soap and clean water. Familiarity with basic first aid is advised to self-treat any injury until medical attention can be obtained.

Motor vehicle crashes are a leading cause of serious injury among travelers (see www.cdc.gov/travel/other/injuries.htm). Travelers should be instructed to avoid drinking and driving; wear a safety belt; follow the local customs and laws regarding pedestrian safety and vehicle speed; obey the rules of the road; use helmets on bikes, motorcycles, and motor bikes; avoid boarding an overloaded bus or mini-bus, and where possible, hire a local driver.

Preventing Electrocutions

Travelers should be cautioned to avoid downed power lines. During power outages, many people use portable electrical generators (www.bt.cdc.gov/poweroutage/workersafety.asp). If the portable generator is improperly sized, installed, or operated, it can send power back to the electrical lines. This problem is called backfeed or feedback in the electrical energy in power lines. Backfeed can seriously injure or kill repair workers or people in neighboring buildings. In addition, electrical power and natural gas or propane tanks should be shut off to avoid fire, electrocution, or explosions. Battery-powered flashlights and lanterns, rather than candles, gas lanterns, or torches, should be used.

Risks from Food and Water

Natural disasters contribute to the spread of many serious food and water-borne diseases, especially since water supplies and sewage systems have been disrupted. Diarrheal diseases, typhoid fever (www.cdc.gov/travel/diseases/typhoid.htm), hepatitis A (www.cdc.gov/travel/diseases/hav.htm), and hepatitis E (www.cdc.gov/travel/diseases/hev.htm) can possibly occur. Travelers should be advised to eat only food that has been thoroughly cooked and to avoid salads and ice cubes. If a trusted source of bottled water is not available, water should be boiled or disinfected. For more details, see www.cdc.gov/travel/foodwater.htm.

Loperamide (Imodium) is recommended for traveler's diarrhea (TD). An antibiotic for self-treatment of acute diarrhea, such as a fluoroquinolone (e.g., ciprofloxacin), can be given. Azithromycin can be used as an alternative. The traveler should be instructed to take this medication until symptoms subside (typically 3 days, but maybe longer in current circumstances).

Instruct travelers to seek medical attention for diarrhea accompanied by a high fever or blood. Additionally, replacement of lost fluids by drinking clean water is the most important means of maintaining wellness, although oral rehydration solutions are ideal for the treatment of severe diarrhea.

Stress the importance of handwashing in preventing disease transmission, and recommend frequent handwashing either with soap and water or with a waterless, alcohol-based hand wash.

Risks from Insect Bites

Because of standing water in these areas, mosquito breeding can become a problem and outbreaks of malaria (www.cdc.gov/travel/diseases/malaria), Japanese encephalitis (www.cdc.gov/travel/diseases/jenceph.htm), and dengue (www.cdc.gov/travel/diseases/dengue.htm) are possibilities. In addition to malaria prophylaxis and Japanese encephalitis vaccine, recommend the use of insect repellent containing DEET (www.cdc.gov/ncidod/dvbid/westnile/mosquitorepellent.htm), wearing long-sleeved shirts and long pants when outdoors, and sleeping under an insecticide-treated bed-net (www.cdc.gov/malaria/control_prevention/vector_control.htm).

Risks from Snake Bites

Displaced reptiles, such as snakes, are likely to be found following flooding and other natural disasters. Travelers should be advised about the danger of attempting to kill snakes. The venom of a small or immature snake can be even more concentrated than that of larger ones; therefore, all snakes should be left alone. Fewer than half of all snakebite wounds actually contain venom, but travelers should be advised to seek medical attention any time a bite wound breaks the skin.

If medical care is rapidly available, then initial treatment should include immobilization of the affected limb and minimizing physical activity as much as possible (ideally of the entire patient) while transport to a medical facility occurs. If care is delayed, then a loose-fitting pressure bandage that does not restrict arterial and venous flow (but does limit lymphatic flow) is the recommended first-aid measure while the victim is moved as quickly as possible to a medical facility. Tourniquets that impair blood flow to the affected limb are generally contraindicated.

Specific therapy for snakebites is controversial, and should be left to the judgment of local emergency medical personnel. Snakes tend to be active at night and in warm weather. Advise the traveler that, as a precaution, boots and long pants should be worn when walking outdoors at night in areas possibly inhabited by venomous snakes. Proper protection such as the aforementioned clothing, careful attention to one's surroundings and overall avoidance of contact are the best measures that can be taken to avoid injury.

Other Health Risks

Leptospirosis (www.cdc.gov/travel/diseases/lepto.htm) may occur in individuals who wade, swim, or bathe in waters contaminated by animal urine. Plague infection (www.cdc.gov/travel/diseases/plague.htm) is usually caused by the bite of rodent fleas, but also may be acquired by direct contact with infectious materials or inhalation of infective droplets. In addition, exposure to animal bites, most notably dogs in resource-poor countries, poses a risk for rabies and other infections.

Potential hazards exist from displaced land mines in areas of prior conflict. Travelers should be advised to stay on highways and asphalt roads to minimize chances of contact with landmines. Aftershocks may continue to occur so for safety, coastal areas affected by tsunami should be avoided, including travel by boat and swimming in bodies of water in those regions. Arrangements should be made to sleep in the highest location possible.

During natural disasters, technological malfunctions may release hazardous materials (e.g., release of toxic chemicals from a point source displaced by winds, seismic motion, or rapidly moving water). Natural disasters may also lead to air pollution. Lung infections may occur after inhalation of sea water. Disasters resulting in massive structural collapse can cause the release of chemical or biologic contaminants (e.g., asbestos or arthrospores leading to fungal infections). Travelers with chronic pulmonary disease may be more susceptible to adverse effects from these exposures.

There are health risks related to extremely hot temperatures such as those found in these areas (heatstroke) and the effects of the sun on the eyes (cataracts) and skin (skin cancer, sunburn). (See www.cdc.gov/chooseyourcover/SunDay-brochure.htm for more information.) Wraparound sunglasses that provide 100 percent UV ray protection should be worn for eye protection. A broad-spectrum (protection against both UVA and UVB rays) sunscreen and lip screen with at least SPF 15 should be used. Advise the traveler to become familiar with the signs of illness related to extreme heat and what to do, see www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp.

Psychological/Emotional

Because of the tremendous loss of life, serious injuries, missing and separated families, and destruction of whole areas, it is important the traveler recognize the situation they encounter may be extremely stressful. Keeping an item of comfort, such as a family photo, favorite music, or religious material nearby can often offer comfort in such situations. Checking in with family members and close friends from time-to-time is another means of support. For additional mental health resources, see www.bt.cdc.gov/disasters/tsunamis/mentalhealth.asp.

Illness Abroad

Should the traveler develop fever, cough, unusual rash, or difficulty breathing, immediate medical attention should be sought.

Because illness and injury are a real possibility for people going to these areas, and most functioning hospitals and clinics may be busy receiving hundreds of injured people, they may be unable to treat travelers. Identifying a doctor ahead of time who can treat travelers and purchasing a supplemental health insurance policy that includes evacuation insurance should be encouraged. A brief list (though not all inclusive) of medical assistance companies includes International SOS, MedAire, and MEDEX travel assistance. Also, for information about medical evacuation, see the U.S. Department of State website at http://travel.state.gov.

Before travel, recommend travelers prepare and carry a travel health kit (www.cdc.gov/travel/other/travelers-health-kit.htm) to include any medications they may be taking as well as additional supplies of medications as these will not be available at the destination; include antidiarrheal medication, an antibiotic for self-treatment of most causes of acute bacterial illness, insect repellent, sunscreen, and an ample supply of antimalarial medication with additional emergency supplies.

A sufficient supply of food (canned and processed may be safest in some areas) and water, or means of water purification (www.cdc.gov/travel/food-drink-risks.htm), are also recommended.

Travelers **returning** from one of the affected areas who become ill for any reason should receive a medical evaluation, preferably by a travel medicine specialist (see www.istm.org for a list). This should include psychological support and counseling as necessary.

For more information about health recommendations for travel to affected areas, see "Health Information for Travelers to Southeast Asia" (www.cdc.gov/travel/seasia.htm) and "Health Information for Travelers to the Indian Subcontinent" (www.cdc.gov/travel/indianrg.htm).

For specific recommendations for vaccinations and disease prevention, the publication "Health Information for International Travel" (www.cdc.gov/travel/yb/toc.htm) provides detailed immunization and prophylaxis information for a variety of diseases.

For mental health resources related to disasters, see www.bt.cdc.gov/disasters/tsunamis/mentalhealth.asp.