HEALTH GUIDELINES & REQUIREMENTS

India: Sustainable Development and Social Change

SIT Study Abroad

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GENERAL INFORMATION

To protect your health in India, you need certain pre-departure immunizations followed by reasonable health precautions while in the country. The following health guidelines and requirements are based on years of experience and the current recommendations from the US Centers for Disease Control and Prevention. They are designed to inform you of health concerns that may be present in India especially as you venture to smaller cities off the usual tourist track, or spend time in small villages and rural areas for extended periods. Although no information sheet can address every conceivable contingency, the following health guidelines and requirements are an attempt to provide you with a standard, which if followed, should optimize good health during your stay abroad.

You may find that local customs and practice, as well as varying US physicians' approaches, at times conflict with these guidelines. It is essential that you review these health guidelines and requirements with your physician, to discuss individual issues such as pre-existing medical problems and allergies to specific drugs. Any further questions or concerns should be directed to the US Centers for Disease Control and Prevention (CDC) in Atlanta (www.cdc.gov/travel) or to your own physician.

SIT Study Abroad programs may venture off the usual tourist track. Pay careful attention to health and safety guidelines.

PREVENTION OF INSECT-BORNE ILLNESS

Malaria

Malaria is present in India. Risk is widespread though patchy, in the whole country. There is low to moderate risk within metropolitan areas, including Jaipur and New Delhi, so you must protect yourself! CDC guidelines suggest that prevention of malaria is possible if you carefully follow personal protective measures as described below and take one of the following antimalarial drugs (listed alphabetically) as directed by your health care provider: atovaquone/proguanil (Malarone), doxycycline, mefloquine, or tafenoquine (Arakoda). **The selection should be discussed with your physician or health-care provider.** If, in spite of adherence to these preventive measures, you develop symptoms of malaria, prompt medical attention lessens the severity of the illness.

The following **insect precautions** should be followed, especially after dark, **to prevent mosquito bites** that may transmit malaria:

- Wear long-sleeved shirts and long pants.
- Use mosquito netting over bedding.
- Use insect repellents on bedding and netting. (e.g. permethrin – commonly known as Permanone).
- Use insect repellents on skin and clothing. DEET-containing products, e.g., Off, Off Deep Woods, Jungle Juice, Muskol. These products may be used on skin in concentration up to 30–40% and on clothing

in higher concentration. Permethrin (Permanone) may also be used on clothing.

Malaria prophylaxis drugs to be discussed with your physician:

- ***Atovaquone/Proguanil (Malarone)*** is a combination drug of atovaquone and proguanil that stops the development of malaria parasites. It is effective against chloroquine resistant strains of P. falciparum malaria. It is used for prevention of malaria in a **daily** dose with food or milk starting 1–2 days before travel to malarious area and continuing for 7 days after return. Although Malarone may cause mild headache, nausea, vomiting, and some muscle pain, it has fewer neuropsychiatric side effects than mefloquine.

- ***Doxycycline*** is an antibiotic that prevents the development of malaria-causing parasites in the blood. It is related to the antibiotic tetracycline. Doxycycline prophylaxis can begin 1–2 days before travel to malarious areas. It should be continued **daily** during travel in the malarious areas and for 4 weeks after the traveler leaves the malarious area. The dosage of doxycycline is one capsule **daily**. Travelers who use doxycycline should be cautioned about possible adverse reactions due to sunlight exposure, such as sunburn and photosensitivity, as well as other side effects including diarrhea, nausea, and vaginal yeast infection in women.

- ***Mefloquine*** is an antimalarial drug for prophylaxis. It is effective against chloroquine-resistant and Fansidar-resistant P. falciparum malarial infections. India has P. falciparum malaria resistance to both chloroquine and Fansidar. The regimen consists of a single dose of mefloquine to be taken **weekly**, starting 1to 3 weeks before travel. Prophylaxis should be continued **weekly** during travel in malarious areas and for 4 weeks after a person leaves such areas.

  Mefloquine should be used with caution. Many people using mefloquine may experience minor side effects initially including nausea, mild headache, dizziness, or bad dreams. Because of the potentially serious results of contracting malaria, we recommend continuing the medication unless the symptoms become intolerable.

  If you are pregnant or have a history of significant emotional or psychiatric problems, including depression, severe anxiety, anorexia/bulimia, schizophrenia, and bipolar disorder, or medical problems including epilepsy and cardiac conduction abnormalities, you must communicate with your physician at home regarding the use of mefloquine and possible alternative drugs. More severe side effects such as fainting, vomiting, vertigo, depression, or confusion may require stopping mefloquine and contacting a physician to consider one of the alternative drugs.

  There are potential adverse drug interactions between mefloquine and other medicines and drugs, including alcohol. In particular, treatment for malaria using quinine or chloroquine should not be administered less than 12 hours after the previous dose of mefloquine. Any cardiac medication especially beta blockers or calcium channel blockers, should be approved by a physician who is familiar with mefloquine's drug interactions and who knows you are receiving mefloquine for malaria prophylaxis.

- ***Tafenoquine (Arakoda)*** was recently approved by the US Food and Drug Administration (FDA) as a new drug for the prevention of malaria in travelers 18 years of age and older. As a prophylaxis, it is effective against chloroquine-resistant malaria.

  Tafenoquine should be taken as a single dose once ***weekly*** to prevent malaria, starting 3 days before travel to a malarious area. Upon return from travel, the final dose should occur 7 days after the last maintenance dose taken in the malarious area. Possible adverse reactions include: headache, dizziness, back pain, diarrhea, nausea, vomiting, motion sickness, insomnia, depression, abnormal dreams and anxiety.

  Tafenoquine should not be administered if one has a deficiency of an enzyme G6PD, and women taking this as a preventative should not breastfeed infants who are G6PD-deficient. Fatal disruption of red blood cells can occur in those with G6PD deficiency. Additionally, tafenoquine should not be taken with drugs that are substrates of organic cation transporter-2 (OCT2) or multidrug and toxin extrusion (MATE) transporters.

SIT Study Abroad suggests that if you have further questions, do not hesitate to contact the Malarial Division of CDC at 888-232-3228 for recorded information or visit the CDC website: http://www.cdc.gov/malaria/travelers/index.html

Japanese Encephalitis

Japanese Encephalitis is a viral infection affecting the brain, which occurs in rural tropical areas, primarily during the rainy season (June-October), and is passed by mosquitoes mainly during the evening hours. Low risk exists in rural agricultural areas throughout most of the country and is mainly in Assam, Bihar, Uttar Pradesh, and West Bengal states. A vaccine, which is helpful in prevention, is currently licensed in the United States. Vaccinations should be considered if during the rainy season you are planning to do your Independent Study project (ISP) or Internship in a rural risk area, or if you plan to travel to rural or agricultural areas for more than four weeks before, during, or after the program. In addition, all travelers should follow personal protective measures to avoid mosquito bites (see under malaria section).

Dengue

This is a viral disease and is transmitted by mosquitoes which bite primarily in the daytime. It occurs in urban as well as rural areas. There is no licensed vaccine against it, but personal protective measures against mosquito bites are effective in prevention. The disease causes considerable discomfort (fever, body aching), but is self-limited in adults.

Please note: *There has been a significant increase in dengue, over the average reported incidence, in the Jaipur regions so far this year. Students are advised to practice daytime insect precautions (see above).*

Chikungunya

Chikungunya is an arboviral infection that is transmitted by day-biting *Aedes* mosquitoes. It is prevalent in tropical Africa and Asia, parts of Central and South America, and the Caribbean. Symptoms are typically fever and joint pain. There is no licensed vaccine against it, but insect precautions and personal protective measures (especially during peak times (early morning and late afternoon) are the main prevention strategy.

Zika

Zika is a viral infection that is also transmitted by the bite of the *Aedes* mosquitoes. Symptoms include mild fever, rash, conjunctivitis (red eyes), joint or muscle pain and headache. Low risk exists throughout the country but mainly in Gujarat State. The disease causes considerable discomfort, but is mild and self-limited, lasting for several days to a week. There are no vaccines or medications available to prevent or treat Zika infections therefore participants should be vigilant in using insect precautions and personal protection measures against day-biting mosquitoes (see insect precautions section above).

CDC recommends that pregnant women consider postponing travel to countries where the Zika virus is prevalent.

PREVENTION OF FOOD- AND WATER-BORNE ILLNESSES

Diarrhea-Producing Infections

"Traveler's diarrhea" is the most common form of diarrhea in India. This is a self-limited diarrhea lasting from a few to several days, characterized by watery, non-bloody bowel movements. Traveler's diarrhea usually requires no treatment other than fluid replacement including ORS (World Health Organization's Oral Rehydration Solution which comes in package form) or other home-made solutions such as: 1 teaspoon salt, 1/2 teaspoon baking soda, and 2–3 tablespoons sugar or honey in 1 liter of **clean** water; another option is carbonated soda diluted by one half. Antidiarrheals such as Imodium or Lomotil may be used short-term in some circumstances. Pepto Bismol in large amounts and certain antibiotics (doxycycline, sulfa-TMP, ciprofloxacin) can prevent or attenuate the infection. Antibiotics are indicated for more severe cases of traveler's diarrhea.

More protracted and disabling diarrheal illnesses may be due to giardiasis and amoebic dysentery (caused by parasites) and bacillary dysentery (caused by bacteria), including cholera and typhoid. These infections (as well as "traveler's diarrhea") are caused by contaminated

food and water. Therefore, the best way to avoid such infections is to respect certain do's and don'ts:

DO WASH your hands scrupulously with non-contaminated water and soap before eating and snacking.

DO DRINK

- Bottled or canned beverages (water, soda, soft drinks) from a trusted source (ensure caps are sealed).
- Hot beverages (coffee, tea).
- Water that has reached a rolling boil for at least one minute at sea level (longer at higher altitudes).
- Carbonated mineral water (to increase the likelihood that the bottle was opened by you and not filled at the tap).

DON'T DRINK

- Tap water, even in ice; don't risk using it for brushing your teeth either.
- Tap water in larger cities is often safe, but the water in rural areas is probably not, so be sure to check with a reliable source before using, and if in any doubt, take all the recommended precautions.

DO USE

- Commercial iodide or tinctured liquid iodine to treat water, ONLY if bottled water (from a trusted source) is not available and boiling water is not possible. Chlorine in various forms is less reliable than iodine. These provide substantial protection when added to tap water.

DO EAT

- Cooked vegetables, fruits with thick covering (citrus, bananas, and melons); and well-washed raw fruits and vegetables.
- Meat or fish that is thoroughly cooked (pork and lamb should be very well done).
- Pasteurized dairy products from large commercial dairies.

DON'T EAT

- Unwashed or unpeeled raw fruits and vegetables.
- Fruits that do not have a thick, disposable outside covering.
- Rare or raw meat or fish or shellfish.
- Dairy products from small, independent vendors without pasteurizing facilities, including food of any kind that has been left out in the sun, especially custards, creams, and mayonnaise.
- Raw (unpasteurized) milk or milk products.

There may be times when refusing an offer of food or beverage, even a drink with ice or avoiding a salad will be considered rude. You must decide for yourself, but polite refusals, thought out in advance, are often handy. Discuss these alternatives with your Academic Director(s).

Hepatitis A

Hepatitis A is a highly contagious virus that causes liver inflammation. It is most commonly spread through contaminated food and water. Most Americans have not previously been exposed to the hepatitis A virus and are at risk of contracting the disease during travel to areas where the disease is more prevalent. A very effective vaccine is available and should be administered 2–3 weeks prior to travel.

Cholera

Cholera is an acute intestinal infection caused by a bacterium (vibrio cholerae). It is usually mild and self-limited but can be associated with severe, profuse watery diarrhea requiring medical attention for fluid replacement. *The guidelines for preventing diarrheal infections apply to preventing cholera as well including strict food and beverage precautions and hygiene measures.* The Cholera vaccine is now available in the US and should be administered at least 10 days prior to travel.

Typhoid Fever

Typhoid is an infection caused by a particular species of the salmonella bacterium. It is spread by contaminated food and water. Symptoms include fever, severe toxicity, rash, and in about half the cases, bloody diarrhea. Untreated, there is a 30% mortality rate. Vaccines are 60–70 % effective in prevention. One vaccine involves a single injection, with immunity lasting 2 years. A second one is administered orally every other day for 4 doses, and lasts 5 years. Antibiotic resistance has been developing, but treatment of the disease with certain well-known antibiotics is usually effective. As with all diarrheal illnesses, careful dietary discretion continues to be the main line of defense.

A note on swimming: Avoid swimming or wading in fresh water. Many parasites and bacteria live in water and can cause serious illness. Properly chlorinated pools and salt water are generally safe from infectious diseases.

OTHER DISEASES

Rabies

Rabies is a viral disease almost always caused by animal bites (especially dogs and bats). Risk occurs in India and, therefore, you should take measures to prevent it. Given the serious danger posed by rabies as a uniformly fatal disease, follow these important guidelines:

- Consider pre-exposure immunization (if available).
- Avoid bites from all animals and especially avoid handling or feeding puppies, kittens, monkeys or other animals. They can have rabies before it is obvious.
- If you have been bitten or have had direct contact with the saliva of a suspected rabid animal, immediately wash the affected area with a soap solution and running water thoroughly to neutralize and to rinse out the virus. ***Then proceed immediately for post-exposure treatment***, the sooner the better; depending on the location of the bite, you may have little time.
- If possible, the animal should be captured and kept under cautious surveillance until the diagnosis and therapy are completed. If capture is not possible, a clear description of the animal and the circumstance of contact should be carefully recorded.

Tuberculosis

Tuberculosis (TB) is a bacterial disease spread by airborne droplets from a person with untreated pulmonary TB or by ingestion of TB-contaminated unpasteurized milk products. Transmission is more likely in conditions of crowding and poverty. A TB skin test can indicate prior exposure to tuberculosis and is recommended prior to travel (unless already known to be positive). A repeat test is also recommended after returning to the US even if the pre-departure test was negative.

HIV/AIDS and Blood Supplies

HIV/AIDS is a concern worldwide. The HIV virus is transmitted by way of bodily fluids from an infected person. HIV is spread mainly by having anal or vaginal sex or sharing drug injection equipment with a person who has HIV. AIDS is an acquired immune deficiency that can result in life- threatening infections and is the most advanced stage of the HIV infection. It is the student's responsibility to protect him /herself from acquiring the disease through sexual transmission. Students anticipating even the possibility of sexual activity are strongly urged to bring their own condom supply. Other potential routes of infected blood transmission such as tattooing, body piercing and needle sharing must be strictly avoided.

With regard to blood transfusions, our Academic Directors have identified hospitals, through consultation with the local US embassy, where safe blood is available. In a life-threatening situation, the risks versus benefits of an emergency blood transfusion must be examined carefully and a decision made based on the best information at hand.

Hepatitis B

Hepatitis B is a serious and often chronic viral infection of the liver. Since this type of hepatitis is most often acquired from contact with infected blood, or sexual contact (as with HIV), or from skin-to-skin contact of mutual open cuts and sores, appropriate precautions to avoid these types of exposure are necessary. This includes avoiding tattooing, ear/body piercing, and cuddling children with sores and draining insect bites. A series of three immunizing injections is recommended. This series should be initiated as early as possible so that at least two doses are taken prior to departure. This will provide partial protection. The third shot should be taken five months after the second dose, and may be given after returning home to achieve full, long-lasting immunity. An accelerated schedule can also be used as an alternative.

Avian Influenza H5N1

The Avian Influenza H5N1, a particularly virulent strain of influenza virus, is excreted in the droppings of infected

birds, including poultry. This virus has been confirmed in India in birds and poultry. No human cases have ever been reported. Currently, the risk to travelers is minimal, but it is important to avoid poultry farms and live animal markets. Well- cooked chicken is safe to eat. Current influenza vaccines are not protective. The anti-viral medicines Oseltamivir ("Tamiflu") and Baloxavir are effective.

Read more on Avian Flu Precautions:
http://www.sit.edu/SSA_Health_document/Avian_Flu_Preparedness.pdf

Air Quality

Students with a history of asthma or allergies should be warned that air pollution in Jaipur is steadily worsening, resulting in an increasing incidence of respiratory illness. Asthmatics should carry emergency medicines for severe asthma attacks.

IMMUNIZATIONS FOR INDIA

Immunizations fall under two categories: 1) those that are required for SIT Study Abroad admission and 2) those that are recommended to protect your health and well-being by building up your immune defenses against specific prevalent diseases. In addition, certain basic immunizations are required by US law.

In the case of India, no immunizations are required for entry into the country from the US, or into the US from India. However, several are strongly recommended to protect your own health, or may even be required if you are visiting other countries just before or after visiting India.

Plan ahead at least 8 weeks, as laid out in the schedule at the end of these instructions--since some require more than one dose for effectiveness. The physician administering the inoculations should record all immunizations on the International Certificate of Vaccination or Prophylaxis (ICVP, also known as the WHO card). The WHO card should be kept with you at all times while in the host country. ***If for some reason you are unable to obtain a WHO card or your WHO card is lost it will be sufficient to carry a copy of your immunization record with you.***

REQUIRED (for participation in program):

- ***MMR (Measles, Mumps, Rubella)*:** You will need to be immunized if you have not had 2 doses of live measles vaccine.

- ***Tetanus, Diphtheria, and Pertussis*:** The primary child series is required. Boosters (Td or Tdap) are effective for 10 years. If you are uncertain when you had your last injection, we recommend another booster.

RECOMMENDED (as a health precaution - consult your physician):

- ***Typhoid*:** This vaccine is strongly urged as a viable protective measure. The vaccine is given either orally or by injection. Discuss the relative merit of each with your doctor.

- ***Japanese Encephalitis*:** This is given as a 2-dose series. The second dose should be given at least 1 week before departure. Certain conditions apply-see section on Japanese Encephalitis.

- ***Rabies*:** Follow carefully the special instructions in the section on Rabies.

- ***Cholera:*** This single dose oral vaccine should be given at least 10 days prior to travel to a cholera endemic area.

- ***Hepatitis A*:** Hepatitis A vaccine, which provides long-term immunity, is recommended

- ***Hepatitis B*:** A series of 3 immunization injections is required. See section on Hepatitis B.

- ***Influenza*:** Influenza vaccine should be considered for any individual wishing to decrease risk of influenza or non-specific respiratory illness-especially those who are at high risk for complications from influenza including those with asthma, COPD,

diabetes, chronic cardiovascular disease and immunocompromised conditions.

SAMPLE IMMUNIZATION SCHEDULE FOR INDIA

To assist your planning, we suggest the following schedule for required and recommended immunizations. For your own comfort and protection, do not leave shots to the last minute!

Before the start of program	Immunizations
8 weeks	First Rabies pre-exposure (Imovax, RabAvert)
7 weeks	Second Rabies Influenza
6 weeks	Tetanus (Td, Tdap) booster First Japanese Encephalitis, if available
5 weeks	Typhoid (injection or oral)
4 weeks	Third Rabies
3 weeks	Hepatitis A vaccine; Cholera Vaccine
2 weeks	Second Japanese Encephalitis
1-3 weeks	Start weekly malaria prophylaxis (if using mefloquine)
1-3 days	Start daily dose of malaria prophylaxis (if using doxycycline or Malarone); Start weekly malaria prophylaxis (if using tafenoquine)

With reasonable attention to health and hygiene rules, your stay in India should be a healthy one. Aside from minor ailments due to adjustments to the new food, water and climate, this is the experience of the large majority of SIT Study Abroad students. We do, however, recommend you see your physician on returning to the US in order to test for any possible lingering infection contracted overseas.

Take good care of yourself!