

# [The disease is caused by brucella health essay](https://assignbuster.com/the-disease-is-caused-by-brucella-health-essay/)

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The disease generally runs a chronic course but can take an acute character. The fever reaches its height within a week and continues for a few weeks with toxemia and comes down by lysis. Case fatality is low but morbidity due to microcytic hypochromic anaemia and chronic debility with depression is very high. Chronic arthritis, neuritis, meningitis, orchitis, encephalitis, nephritis, bronchopneumonia, myocarditis, endocarditis, pleurisy, osteomyelitis, may complicate the illness which may last for 6 months to a year or longer. A small number of cases may go into a chronic course of illness lasting months and years. Such patients are in a state of ill health manifested by weakness, fatigue, mental depression, vague aches and pains. The disease in adults can be treated with doxycycline 100 mg twice a day per day for 6 weeks and Inj. Streptomycin 1 gm IM per day for 3 weeks. Combination of doxycycline with rifampicin for six weeks is also recommended. Complicated cases can be treated with a triple drug regimen comprising of aminoglycoside, doxycycline and rifampicin. Consumption of pasteurized milk or boiled milk is most important preventive measure. Use of gloves for handling meat, placenta and excreta and personal cleanliness especially washing hands after work and before food intake are the important precautions. Air Borne DiseasesInhalation transmits influenza, Meningococcal disease and Tuberculosis. First two cause widespread disease among humans. In tropical countries infections with influenza occur throughout the year. Influenza A or H1N1 emerged in 2009, as a new reassortment virus of swine flue origin that had never circulated before among humans. Influenza spreads via droplet transmission by unprotected cough and sneezes, and direct inoculation through hand contamination. Severe illness is seen in people above 65 years of age and those with underlying medical conditions. Clinically it presents with abrupt onset of constitutional and respiratory signs and symptoms. Empiric treatment with neuraminadase inhibtors, oseltamivir or Zanamivir, in severely ill patients, those hospitalized or at increased risk of complications is indicated. Preventive measures include avoidance of overcrowded places and frequent hand washing. CDC recommends annual vaccination of all people more than 6 months of age. Travelers with conditions which place them at high risk should receive vaccine more than 2 weeks before departure. Every year composition of influenza vaccine is modified depending upon the circulating strains of virus. (7, 8]. Meningococcal disease occurs In India sporadically or in small clusters and risk to travelers is generally low. Bivalent (A & C) and tetravalent (A, C, Y and W-135) capsular polysaccharide vaccines are available The vaccine is recommended for travelers going to any region where meningococcal epidemics are reported. A single dose of vaccine gives protection for 3-5 years. Travelers should opt for tetravalent vaccine because of extra protection offered by it. Tuberculosis is prevalent throughout India and protection is by avoiding close contact with people in crowded and enclosed places. This measure is required for all the airborne diseases. When travelers are coming from low incidence areas to high incidence areas, especially health workers, missionaries and relief workers, baseline tuberculin skin test is advisable for comparison with retesting after return [1, 8]. Sexually Transmitted Diseases (Std)Although there has been a slow down in HIV epidemic in recent years, there are 2. 4 million people living with HIV/AIDS in India. States of Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, Manipur Mizoram and Nagaland have higher prevalence of HIV infection. Exposure to STD can occur to travelers who do not observe precautions. Travelers should restrain from unprotected sex to avoid STD and HIV. If an unprotected sexual exposure occurs, immediate medical attention should be sought. Environmental HazardsVagaries of nature extend from the Siachen glacier to the deserts of Rajasthan and the jungles of Northeast. Diseases due to hostile environment manifest as effects of heat in the desert and arthropod borne disease like malaria in the forests of Northeast, and cold injuries and effects of high altitude in the glacier. These environment extremes are important considerations for worshippers, wilderness and adventure travelers. Some of the religious places like Amarnath in Jammu and Kashmir, Badrinath and Kedarnath in Garhwal hills open for travelers during summer, for worship by devotees, who travel from all over India. These places expose the travelers to vagaries of weather (altitude and cold). Occasional avalanches have killed many and some have even died of hypothermia. Some of these worshipers suffer from chronic diseases like diabetes mellitus, IHD, hypertension and chronic respiratory diseases and so they are likely to deteriorate during these trips. The tourist / transit camps for the devotees do not have adequate medical facilities to tackle all the emergencies. The traveler to these places should take precautions by proper acclimatization, carrying sufficient medicines, and adequate protection to withstand cold and altitude [8, 9]. Climates in IndiaPeople from southern and plains of India do travel to different places during the summer months. During this time some of the places up north are still cold and some of the high altitude areas attract people to religious places, education and holiday tours. India is so vast that the climatic conditions in the far north have little relation to that of the extreme south. While the heat is building up in the plains, the people of Ladakh wait for the snow to melt. Basically India has a three-season year – the hot (summer; March to June), the wet (monsoon: July to September) and the cool (winter: December to February) and the post monsoon period from October to November. The annual variation is small in the extreme South and very high in the North. But in the South (tropical areas) there is practically one season of continuous heat and humidity throughout the year. In general, the Indian climate in different areas falls within these broad groups; (a) Hot humid in Arunachal and the North Eastern plains. The landscape is flat or undulatory with thorny bushes and exuberant undergrowth infested with leeches, snakes, mosquitoes and other insects, (b) Hot arid in the Punjab plains and Rajasthan deserts. Mosquito breeding occurs during and after the rainy season. (c) Cold dry in the Western Himalayan region of Ladakh (3000 m above sea level) where annual mean temperature varies between 50C and minus 100C and during winter it may touch minus 400C. At these altitudes, the unfiltered sunrays are exceptionally strong and have a pronounced thermal effect on clear calm day. In Ladakh in winter months, the part of the body towards the sun is parched, whereas the opposite part may be very cold. (d) Cold-wet is typified by the climate in Kashmir valley and more so in Sikkim and Arunachal Pradesh. The increase in humidity makes the cold weather very unpleasant. This information is useful to the traveler to anticipate the health problem likely to be encountered during this season when visiting these places so that adequate precaution to protect from mosquito and water borne diseases and cold and altitude related diseases can be taken. The hot season is the best trekking season in Kashmir and Ladakh. During the monsoon travelers get stranded and depending on the place are exposed to water borne diseases and adverse climate. Effects of Extreme Hot ClimateThe important clinical conditions produced are heat stroke, heat exhaustion, heat cramps and prickly heat. Dehydration, salt depletion, old age, debility and alcohol act as predisposing factors. High prevalence is in north Indian states, Bihar, Odisha, Andhra Pradesh, Tamil Nadu, and West Bengal. The two syndromes (heat stroke and heat exhaustion) are clinically distinguishable and require different therapeutic measures. Sometimes distinction between the two may not be clear cut and heat exhaustion may pass into heat stroke. Heat illness can be prevented by taking adequate time to acclimatize to the hot environment before undertaking any strenuous physical activity. Clothing should be light weight and loose fitting preferably of cotton material. Consumption of plenty of cool water, enough to produce usual urine output, should be ensured even if one is not feeling thirsty. Everyday about 8 to 16 liters of water intake may be required depending on the intensity of physical activity. During acclimatization, which usually takes 10 to 14 days, additional salt intake may be needed. Thereafter no additional salt intake is required. In case of a heat stroke temperature should be rapidly reduced by spraying cool (not ice cold) water and fanning. Thirst is quenched by giving sufficient cool water. Although heat illness is preventable, thousands of travelers continue to suffer every year and it is second leading cause of death in young athletes. Effect of Intense Solar RadiationSkin manifestations due to exposure to ultraviolet radiations in sun-light, may occur in the plains and at high altitude or even in extreme cold places in the Himalayas (tanning, erythema, solar dermatitis, sunburns). Prophylactic measures include avoidance of sun exposure during mid day, wearing wrap around Sunglasses and broad brimmed hat and liberal application of a sunscreen with sun protection factor of 15+, on all uncovered areas of body. Eye ManifestationsHarmful and disagreeable effects of solar radiation on eyes and eyesight are due to ultra-violet, infrared and visible spectrum of light. They cause thermal or photochemical effects on the conjunctiva, cornea, lens and retina. Prolonged exposure to intense infrared rays causes posterior polar cataract. The symptoms of ultraviolet radiation are intense pain, photophobia, and intense circumcorneal injection. The concentration of infrared rays at high altitude cause ‘ eclipse scotoma’, a retinal burn produced by radiation energy of the sun, when the unaided eye is directed to the sun. Wearing of coloured glasses and plastic filters, which can absorb most of the ultraviolet components of actinic rays is advised. The best glasses are ordinarily of green or rose smoke colour. Zinc sulphate 0. 5 percent astringent drops three or four times a day, cold compresses and bandaging the eyes clear the photophthalmia within 24 to 48 hours in a majority of cases. If the cornea is involved, atropine ointment should be given. The individual should not expose his eyes to sunshine for at least a week after the initial treatment. Health Problems in DesertDesert areas in India are mainly in Rajasthan, Gujarat, and Haryana. The five districts of Rajasthan, namely Ganganagar, Bikaner, Jaisalmer, Barmer and Jodhpur fall in this arid zone. The Indian desert is one of the most thickly populated deserts in the world. The zone is characterized by high temperature variation from less than zero degree centigrade in winter night to more than 500C in daytime in summer. Drinking water scarcity compounds the problem. This water deficit area has an acute problem of saline ground water, which is not potable and also hinders bathing, washing, and other community utility. Malaria, excremental diseases including viral hepatitis and skin diseases have a higher prevalence in desert areas. Desert areas are infested with poisonous snakes and scorpions. Cases of snakebites in summer and scorpion bites in winter are a common occurrence. During winter, there is a great drop of temperature after sunset which gives rise to the respiratory group of illnesses. During the day, especially summer, high temperature accounts for a higher incidence of effects of heat. The sand and dusty environs lead to an increased incidence of foreign bodies in the eyes, conjunctiva and trachoma. Illnesses due to solar radiations exposure also occur. Effects of Extreme Cold ClimateDeleterious effects of extreme cold are inherent in the environment at high altitude, but they also occur at low altitudes in the plains of Northern India. The exact nature of the effects of cold may vary from one type of cold environment to another. Cold weather may be associated with very low atmospheric humidity as in Ladakh, Rajasthan or Punjab; or with high humidity and rainfall as in Sikkim, Kashmir and Arunachal; or with moderate humidity as in the North Indian Plains. Altitudes above 3000 m in the Western and 4000 m in the Eastern Himalayas represent the same climatic conditions as in the Arctic region. In summer the sun is bright, scorching and distressing. Frostbite and snow blindness are common hazards and below that altitude chilblain is the commonest hazard. Hypothermia may manifest itself either as accidental or secondary to acute illness. People on trek when exposed to very severe cold with high velocity winds in the snow bound areas of high altitude develop effects of hypothermia and the duration of exposure determines the severity of accidental hypothermia. Other conditions which predispose to accidental hypothermia are injury, blood loss, shock, fatigue, endocrine disorders, hypoglycemia, cerebrovascular accident, myocardial infarction, cirrhosis and pancreatitis. Early recognition and prompt therapy is life saving. Initiate treatment by removal of wet clothing and cover the patient with warm dry blankets. Rewarming by application of external heat and if patient is conscious drink warm water. Prevention is by use of loose and many layers of wool clothing with a wind proof outer layer. Adaptation to cold is slower and less efficient than acclimatization to heat. Cold hardening, or seasoning is done to traveler who undertake journey for trekking and mountaineering. Accidental hypothermia has occurred to Amarnath yatra devotees due to sudden avalanches and blizzards [9, 16]. Effects of High AltitudeHimalayan regions of India attract a large number of tourists for adventure sports and mountaineering. The environmental conditions at high altitude which influence physiological processes are, lowered atmospheric pressure and partial pressure of oxygen, lower temperature and humidity, ultraviolet radiations and the isolation under monotonous mountain conditions. It is rare to experience altitude illness below 2000 m. Detailed accounts of altitude illnesses are given in standard textbooks of medicine, hence only relevant details will be recounted [6, 7]. The important clinical problems encountered here are:-(a)Acute mountain sickness (AMS).(b)High-altitude pulmonary and cerebral edema (HAPE and HACE).(c)Chronic pulmonary hypertension.(d)Flare up of preexisting infections.(e)Psychological effects. Acute Mountain SicknessAbout 25% of travelers who live near sea level experience AMS (usually within 48 hours) when rapidly transported while visiting destinations at elevations between 2000 and 3000 m. More than 50% of visitors become ill above 3000 m after arrival [9]. Symptoms of AMS include headache (the principal symptom), anorexia, nausea, insomnia, lassitude, dizziness, oliguria, and peripheral edema. Rest and analgesia are adequate in mild cases. The symptoms generally subside by 5 to 7 days of stay at high altitude. Symptoms are worse after air travel. By road journey, the severity of symptoms depends on the stages of ascent and the time spent for acclimatization at each stage. Usually, one week each at 8, 000, 11, 000 and 14, 000 feet is considered adequate for acclimatization. Acclimatization has to be prolonged for three weeks or more at altitudes more than this. Patients with severe symptoms should be monitored closely for evidence of high altitude pulmonary oedema. During sleep at high altitude, periodic (Cheyne-Stokes) breathing occurs, which further lowers arterial oxygen saturation. Hypothermia and AMS often coexist. Persistent symptoms may respond to acetazolamide, which induces a metabolic acidosis and stimulates ventilation. If symptoms progress while resting, descent is mandatory. Oxygen, if available, may provide relief of symptoms. Some carry a lightweight portable fabric hyperbaric bag (Gamow bag) that is large enough to hold one person for the treatment of AMS. It should not be used as a substitute for descent. Graded ascent is the surest and safest method of preventing AMS. Acetazolamide taken at bedtime diminishes periodic breathing and improves oxygen saturation. The prophylactic dose is 125 to 250 mg twice a day beginning 12 hours before starting ascent and continued for at least 48 hours after reaching the maximal altitude [3, 9]. Severe Altitude Illness (HAPE, HACE)This is characterized by an altered level of consciousness, ataxia, rales, or dyspnea at rest and suggests progression from AMS to HACE or HAPE. The single most useful sign for recognizing the progression of altitude illness from mild to severe is loss of coordination. If left untreated, HACE progresses to drowsiness, obtundation, coma, and death. If HACE develops, immediate descent is mandatory to prevent death. Oxygen, if available, should be administered with descent both to improve oxygenation and because HACE is often associated with HAPE. If descent is impossible because of weather or terrain conditions a portable hyperbaric chamber is an alternative treatment. Nifedipine (30 mg slow release every 12 to 24 hours or 10 mg sublingual every 4 to 6 hours) reduces pulmonary vascular resistance and pulmonary artery pressure and appears to be useful adjunctive therapy for HAPE. Dexamethasone orally 2 mg every six hours can be used for prevention of AMS and HACE in adults whereas, oral nifedipine, tadalafil, sildenafil and inhaled salmetrol are useful for prevention of HAPE [7]. Preexisting Health Problems at AltitudeThe number of elderly travelers has shown an increase and so also travelers with chronic pulmonary disease, diabetes mellitus and cardiac diseases. Some of the existing information about their fitness to travel under adverse environment is given in respect to each disease. Cardiac DiseaseIndividuals with coronary artery disease who are asymptomatic during normal activity at sea level can usually travel to high altitude without difficulty. Cardiac death is uncommon in trekkers or workers at high altitude (2440 – 4570 m). Physicians should still caution elderly patient that ascent to high altitude can precipitate angina. Patients with history of CAD, MI, angioplasty and CABG should undergo exercise treadmill test, and if it is strongly positive, should be advised against visiting high altitude. Cardiac patients should carry all the medications, a copy of the recent electrocardiogram (ECG), and those with pacemaker ECG performed with and without pacemaker activation. Anti-anginal medications should be made available to these patients before their departure [6, 16]. Systemic HypertensionIn patients with hypertension a further rise in blood pressure can occur with ascent. In some individuals, a marked rise in pressure may occur, necessitating descent. Usually a modest increase in antihypertensive medication, low-salt diet, and increased rest during the first few days of the altitude stay will suffice [6]. Diabetes MellitusAll diabetics should carry medications, syringes, needles and snacks with them and also a card containing their physician’s name, telephone number, type and dose of insulin / other medications used. As no change of time zone is involved in travel within India no alteration is required in their monitoring of blood sugar, or medication including insulin, unless there are significant changes in meal schedules, types of food consumed or the general level of physical activity [7, 9]. Pulmonary DiseaseAsthma alone is not a contraindication for ascent to high altitude unless it is severe. The hyperirritability of the airways is thought to be due to inhalation of cold and dry air, which leads to bronchospasm during or after the activity [6]. Prevention of Effects of High AltitudeIndividual tolerance to hypoxia varies and has no correlation with physical fitness in its ordinary sense. Complacency or bravado, which in itself is one of the symptoms of hypoxia, encourages excessive physical activities without proper and adequate acclimatization. Rapid ascent without acclimatization followed by physical activity increases the risk of effects of hypoxia. People visiting places above 2700 m should be systematically acclimatized. They will require further acclimatization if going to heights more than 3600 m. An individual should not stay for more than 2 months at a time beyond 4800 m. It is better to follow a protocol as suggested by the local medical authorities. Travelers who reenter after a gap of 4 weeks should be treated as fresh inductees and advised to undergo acclimatization schedule as fresh entries [9]. Wilderness and Adventure TravelersMany adventure travelers to India are inadequately prepared for their trip and are naïve about the associated risks. They mostly visit for river rafting in almost all the major rivers, trekking and mountaineering in the Himalayas, winter sports, Heliskiing, hand gliding, and rock climbing. Physicians are frequently asked to provide medical clearance form for adventure travelers. The individual may also ask pre trip advice on endemic diseases and other health related risks. To provide better advice, the physician should be familiar with the rigors and difficulty of the activity and consider the potential environmental hazards and remoteness of the intended areas of travel. There is a paucity of data that document the relative risk of adventure travel. Environmental extremes, such as high altitude and cold and hot climates are important considerations for wilderness and adventure travelers. Type of terrain, age of the traveler, underlying health problems may put an individual at an increased risk in an extreme environment. Medical kits carried by expedition members have to be more comprehensive than those carried by ordinary travelers. [3, 9, 16]. As motor vehicle accidents are a leading cause of injury, travelers should walk and drive defensively. Avoid travel at night if possible and always use seat belts. In addition take care of accidents due to man made and natural disasters. Disaster prone areas in India: (a) Northern mountain region including the foothills are prone to snowstorms, landslides and earthquake. (b) The eastern coastal areas are prone to severe floods and cyclones (Andhra Pradesh, West Bengal and Odisha). (c) Major floods occur almost every year in Bihar, Assam, and UP. (d) Western deserts area suffer from droughts [1]. Some Annoying Pests [9]Simulium FliesThese are stout bodied and blood sucking flies. In Arunachal Pradesh these are called Dimdam flies. They are also reported from Kumaon hills, Himachal Pradesh, Kashmir, Assam, Manipur, Nagaland, Bengal, Bihar, Maharashtra, and Nilgiri Hills. They enter through any opening in the clothing such as the sleeves or through the trousers lower opening for biting. They bite only by day, are active on bright sunny days and retire at night to the neighboring vegetation. The immediate trauma caused by its bite produces a red haemorrhagic spot leading to papule formation. In sensitized persons allergic reactions like lymphangitis, lymphadenitis, rhinitis and fever may occur. Use of protective clothing will prevent the flies from ascending up the sleeves and trousers or entering into the shirtfront; Socks should be pulled over the bottom of trousers. ScorpionsScorpion sting as a rule is not more dangerous than bee or wasp sting, as the chemical nature of the poison is similar to formic acid. It is, much more painful and if sufficient poison has been injected, may cause distressing symptoms which may take twenty-four hours to pass off. Cardiovascular effects like hypertension, arrhythmia, cardiac failure and pulmonary edema may be encountered. The effects are more marked in children. Application of a strong solution of ammonia relieves pain in a majority of cases. Injection of 1 percent novocaine and adrenaline at the spot and along the nerve may be necessary in others. Preventive measures include alertness in avoiding contact with scorpions in infested areas. Bee, Wasp and HornetThe stings of these insects are often painful with local wheeling and redness. The sting along with poison gland may be frequently left in the puncture, particularly by the honeybee. It should be removed gently by pulling it out, care being taken not to squeeze the venom in the wound. Local application of an alkaline solution of sodium bicarbonate or ammonia or soap and applying pressure with a moistened piece of lint are useful in relieving pain. Serious allergic reaction will require adrenaline administration. Leech BitesLeeches (Hirudinea) are a class of Annelid worms. They are particularly found near streams and rivers, in leafy forest and marshy jungles. They can penetrate into the interstices of clothing, putties or laced boots. They often drop from tree leaves onto man or animals passing by and suck blood. Leech bites are painless but the bleeding may be prolonged due to powerful anti-coagulant, hirudin, present in its saliva. If a large aquatic leech is ingested it fastens itself to the mucus lining of the mouth, pharynx, larynx, or nasal cavities of man or animal producing prolonged bleeding unless removed. Gumboots or jungle boots protect one from leech bite. A frequent search of the body for the presence of leeches should be made. The leech should not be dragged or pulled for fear of leaving behind its suction apparatus. Salt, vinegar or a touch of the light end of a cigarette induces the leech to relinquish its hold. DBP and DMP rubbed on the skin, on the opening of clothing, into socks and boots keep leeches away. At night a properly adjusted mosquito net affords protection. Pregnant TravelerAirlines are reluctant to carry women after 36 weeks of gestation. Long flights also carry risks of deep venous thrombosis (DVT). Live vaccines like measles, mumps, rubella, varicella and yellow fever vaccines are generally contraindicated. However yellow fever vaccine may be considered early in pregnancy depending upon the risk. Influenza, hepatitis A & B, meningococcal, polio, tetanus and diphtheria vaccines can be given safely. For self treatment of enteric infections azithromycin is safe. Pregnant ladies should avoid travel to areas at high altitude, where multi-drug resistant malaria is endemic or yellow fever vaccine is required[6, 8]. Travel by AirMotion sickness is known to occur not only in air travel but also while traveling on hilly areas by road. It presents usually in the form of pallor, cold sweating, nausea and vomiting. The drugs with a proven record of safety are scopolamine, antihistamines, (dimenhydrinate, meclizine) and dextroamphetamines. Of these drugs, the transdermal scopolamine patch is the most effective with fewer side effects. In India air travel is usually for a short period only. Pre-existing diseases may cause problem. People with ear, nose and sinus infection should avoid flying. If travel cannot be avoided they should use decongestant nasal drops. People who are prone to motion sickness should request for seat over the wings and /or window seat, keep the motion sickness bag nearby and use medication (antihistamines like dimenhydrinate, meclizine and dextroamphetamines). A letter from the doctor confirming good health of normal pregnancy and expected date of delivery should be carried after 28th week of pregnancy. Persons with preexisting illness like cancer, cardiovascular disease, chronic respiratory disease, epilepsy, severe anaemia, and unstable diabetes mellitus and on renal dialysis and immunosuppresants should consult the doctor before travel. All medications for use during travel and at destination should be kept in hand luggage and readily accessible all the times. Air travel is generally safe for passengers with pacemakers. However hand held security devices may interfere with implanted automatic defibrillator and traveler with this device should carry a physician’s letter specifying this hazard. For smokers, use of nicotine replacement patches or chewing gum containing nicotine may be helpful and use of mild tranquillizer may be considered. Persons with disabilities should inform travel authorities in advance and can travel with escort. Most of the aircraft have some type of medical assistance on board. Some of the crew is trained in first aid, is provided with a medical kit and automatic defibrillator. Use of telemedicine may also be available to get the help from the nearest medical center. Conditions, which contraindicate air travel, are [6, 8]: -(a)Infants less than 48 h old.(b)Women after 36th weeks of pregnancy and 32nd weeks for multiple pregnancies.(c)People suffering from angina pectoris, acute contagious diseases, increased intracranial tension due to haemorrhage, trauma and infection.(d)Recent myocardial infarction, stroke (elapsed time depending on severity and duration of travel.(e)Persons with chronic pulmonary disease (bronchitis, emphysema and asthma) and unresolved pneumothorax, could worsen even in a pressurized cabin of an airliner. Continuation of bronchodilators and corticosteroids before and during flights is recommended, and if necessary supplemental oxygen. Illness in Returning TravelersThis will depend on the part of India the traveler belongs and for international travelers their country of origin. Between 50 – 75 % of short term travelers to the tropics report some health impairment. Five percent require medical attention, and less than 1% requires hospitalization. As compared to deaths due to infections, rates of death due to injury (road traffic accident, drowning, aircraft accident etc.) are many times higher among travelers [6, 8]. If traveler becomes 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), one should seek immediate medical attention and should tell the physician about their travel history. Fever in a returned traveler should be investigated for the likely causes [3, 7]. Systemic febrile illness, acute and chronic diarrhoea, dermatological disorders and respiratory illness are the major categories of diseases seen in returned travelers to USA [17, 18]. Pre-travel Measures for Healthy TravelTravelers to India from other countries should contact their physicians, local health departments, or private or public agencies that advise international travelers, at least 6 weeks before departure. This will help in obtaining current health information and to obtain vaccinations and prophylactic medications as indicated. Individuals with serious cardiopulmonary problems, recent surgery, myocardial infarction (MI), cerebro vascular accident (CVA), and deep venous thrombosis (DVT) should be evaluated before travel and also on return. A pre travel health assessment for adventure travelers going for mountain climbing and scuba diving is essential. Get a dental check up and treat unresolved medical and surgical problems. Always carry a spare pair of glasses or your prescription in case of loss or breakage. Carrying of first aid kit is advisable especially for adventure travelers. This should include, common medicines for minor ailments [paracetamol, antibiotics (azithromycin or levofloxacin), drugs for pain relief, diarrhoea, allergy, oral dehydration powder, antimalarial tablets, antiemetics and antihistamines], disinfectant, dressings, bandages, antiseptic solution, plaster, sunscreen, water purification tablets, and insect repellants. Mosquito nets to be carried or arranged when visiting malaria and mosquito infested areas. Other items worth carrying are: band aids, thermometer, tweezers, scissors, and antifungal and antibiotic cream. AIDS kit (sterile needles and syringes) for adventure travelers is advisable [3, 6-8]. Immunization for TravelerImmunization forms an important part of travel preparations, to avoid vaccine-preventable diseases. National vaccine recommendations are formulated by the Advisory Committee for Immunization Practices (ACIP), published in the Center for Disease Control (CDC) publications. Vaccines do not fully protect 100% of the recipients. The vaccinated traveler should not assume that there is no risk of catching the disease(s) against which he/she has been vaccinated. All additional precautions against infection should be followed carefully, regardless of any vaccines or other medication that have been administered. The traveler should see his doctor 4 to 6 weeks before the trip to decide on the immunization requirement for vaccine preventable diseases at the travel destination. Specific immunization has been mentioned along with the individual diseases where applicable. Following factors should be ascertained before vaccine selection [2, 8].(a)Travel information.(i)Geographic itinerary (order of travel).(ii)Month (s) and duration of travel.(iii) Urban versus rural travel.(iv) Style of travel (hotel or resort, versus hut or camping) and type of travel (business, holiday, adventure, religious, foreign visitor).(b)Personal health(i)History of previous immunization or test of immunity.(ii)Allergy to drugs and vaccines.(iii)Age and weight.(iv)Pregnant or lactating.(v)Impaired immunity due to disease, medications, or treatment.(vi) Medications taken on a regular basis.(c)Vaccine categories.(i)Routine immunizations which are usually given in childhood and which should be up-to-date regardless of travel (tetanus, diphtheria, pertussis, measles, mumps, rubella, poliovirus, haemophilus influenza B, influenza virus, pneumococcus and hepatitis B).(ii)Required vaccines for entry into certain areas in any country, depending on geographical location visited (e. g. cholera, yellow fever).(iii)Recommended vaccines which may be of great benefit to travelers depending on the risks of exposure at the travel destinations and style of travel (e. g. hepatitis A, Japanese encephalitis, meningococcal meningitis, rabies, tick borne encephalitis, typhoid fever and cholera). HospitalsIndia has many qualified doctors with their own private clinics and hospitals with good medical facilities. Types of hospitals are: western missionaries, government hospitals, private nursing homes and corporate hospitals with ultramodern facilities depending on the location and place. Travelers should get a list of such hospitals before visiting these places from the websites or from travel agents or obtain the same once they reach their destination. Health GuidelinesImportant health related websites are given in Appendix I. General guidelines for maintaining proper health for all travelers is given in Center for Disease Control and Prevention in " Health information for travelers to India". Some of these modified guidelines are given in Appendix II .

## Appendix I: Websites for further information

1. http://travel. state. gov. 2. CDC Health Topics A-Z. http://www. cdc. gov/az/3. http://wwwnc. cdc. gov/travel/page/yellowbook-2012-home. htm4. The International Society of Travel Medicine at http://www. istm. org5. The American Society of Tropical Medicine and Hygiene at http://www. astmh. org/6. The World Health Organization (WHO), web address at http://www. who. int/ provides general information, as well as disease surveillance data worldwide. 7. WHO publication, International Travel and health: Vaccination Requirements and Health Advice

## Appendix II: Health precautions during travel to India [7, 8]

To stay healthy, do... Wash hands often with soap and water. Alternatively alcohol based hand sanitizers can also be used. Drink only bottled or boiled water, or carbonated (bubbly) drinks in cans or bottles. Hot beverages like tea and coffee are generally safe. Avoid tap water, fountain drinks and ice cubes. Protect yourself from mosquito bites. Always use latex condoms to reduce the risk of HIV and other STDs. To avoid getting sick... Don’t eat food purchased from street vendors. Don’t eat salads prepared with unsafe water. Don’t drink beverages with ice. Avoid unpasteurized dairy products. Don’t handle animalsDon’t swim in potentially contaminated waters like canals, ponds, rivers and unchlorinated swimming pools. To avoid injuriesDuring road journeys, take simple precautions like not drinking before driving, using seat belts in four wheelers and helmets on two wheelers and avoid night journeys. What you need to bring with you: Long-sleeved shirt, long pants and a hat to wear while outside. Bed nets impregnated with permethrin. Flying-insect spray or mosquito coils to help clear rooms of mosquitoes. Sunblock and sunglasses. Prescription medications: enough to last during your trip, as well as a copy of the prescription(s). For more information: Ask your doctor about how to protect yourself against diseases that occur in the Indian Subcontinent.