Introduction

As a result of the improved quality of life and survival benefits brought forth by the use of effective antiretroviral therapy, people living with HIV/AIDS (PLWHA) are leading relatively normal life. Travel is now more common for PLWHA, especially from developed countries to tropical and subtropical areas of the world. This trend has created unique health concerns because of the defective immune response arising from low CD4 count and an increased risk of complications from exotic diseases acquired at their travel destination.

Studies in North America had shown that only half of the PLWHA consulted with a physician prior to travel. While travel medicine and the concept of pre-travel health consultation are still at their developmental stage in Hong Kong, physicians should alert PLWHA of the importance of obtaining pre-travel advice, especially when planning for trips to developing countries where the infection risk is anticipated to be higher than the traveller's home country. Likewise, HIV physicians need to know how to counsel their clients with regard to a wide variety of health issues not only limiting to infectious diseases, but also non-infectious aspects including time-zone changes, temperature extremes, altitude medicine, diving medicine, environmental hazards and personal safety. Constant update on destination-specific diseases and environmental conditions, and basic knowledge across the health specialties is desirable in order to offer individualized risk assessment and to discuss the prevention strategies and management plan with PLWHA.

Basic principles of healthy travelling

Like any other travellers, an HIV traveller should plan ahead of their trip and seek not only general travel-related advice regarding infectious and non-infectious travel risks in their destination, but also specific advice in regards to their current health status. Visits should be made at least 4-6 weeks in advance of departure to allow for the consideration of vaccination and modification of treatment regimen and observing potential side effects of prophylactic treatment should these be required.

Apart from obtaining routine travel information as listed in Box 13.1, physicians should also provide specific information on one's health status, specifically the most recent CD4 count and its trend, the latest HIV viral load, the current antiretroviral regimen and drug adherence. An integration of all these information could be used to assess an HIV traveller's physical fitness for the journey and to offer general and specific health advice.

PLWHA with CD4 count <200 cells/µL, history of an AIDS-defining illness, or clinical manifestations of symptomatic HIV are generally considered to have severe immunosuppression. They are generally advised to delay their travel to resource-limited areas. Such a delay is preferred while the individuals undergo immune reconstitution with the initiation of antiretroviral treatment, firstly because it is not uncommon for them to suffer from side effects of the treatment during the initial months; and secondly, immunologic recovery will minimize the risk of acquiring new infections and potentially lead to a better response to vaccinations.
Box 13.1 Basic and specific information to be obtained from an HIV traveller as pre-travel assessment

<table>
<thead>
<tr>
<th><strong>Basic Information</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Regarding the trip</td>
<td>Destinations, including countries and areas within countries and transit cities (e.g. rural vs. urban areas)</td>
</tr>
<tr>
<td></td>
<td>Detailed itinerary (including types of accommodations and activities involved)</td>
</tr>
<tr>
<td></td>
<td>Season of travel</td>
</tr>
<tr>
<td></td>
<td>Duration (Dates of departure and return)</td>
</tr>
<tr>
<td></td>
<td>Nature of travel (business, leisure, missionary, visiting friends and relatives [VFR], study or teaching etc.)</td>
</tr>
<tr>
<td></td>
<td>Travel format (tour group, backpack, luxury travel etc.)</td>
</tr>
<tr>
<td>Regarding the traveller</td>
<td>Medical history</td>
</tr>
<tr>
<td></td>
<td>Drug history (including both trade name and generic name and the exact dosage)</td>
</tr>
<tr>
<td></td>
<td>Allergic history</td>
</tr>
<tr>
<td></td>
<td>Immunization history</td>
</tr>
<tr>
<td></td>
<td>Reproductive status (women)</td>
</tr>
<tr>
<td></td>
<td>Experience of travel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Specific Information</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Immune status</td>
<td>Recent CD4 count and its trend</td>
</tr>
<tr>
<td>Antiretroviral therapy and the chemoprophylaxis</td>
<td>Need of refrigeration</td>
</tr>
<tr>
<td></td>
<td>Dosing interval</td>
</tr>
<tr>
<td></td>
<td>Adherence</td>
</tr>
</tbody>
</table>

An HIV traveller on treatment should ensure an ample supply of antiretroviral medications to prepare for unanticipated delay during their trip. Special consideration has to be taken on dosing interval when travelling across time zones. Whenever possible, new medication change just prior to travel should be avoided. Medications are best kept in the original bottles in their carry-on luggage and not the check-in luggage. It is advisable to obtain a letter from the physician with a brief summary of the medical history and list of medications to expedite the customs process when crossing borders. Reliable medical institutions at the destination should be located before travelling so that prompt medical care can be sought if becoming ill while travelling. Medical insurance coverage should be verified and evacuation insurance should be considered depending on the type of travel and itinerary.
As in the case of traveller's diarrhoea, HIV travellers should be reminded that all of the preventive strategies against specific conditions do not guarantee a 100% protection. They should be advised to seek expert medical assistance early in any febrile illness during or after one's trip.

**Food- and water-borne disease and traveller's diarrhoea**

HIV travellers are more prone to develop either chronic diarrhoea from parasitic enteric infections, e.g. *Cyclospora*, *Cryptosporidium* and *Isospora*; or more severe disease with associated bacteraemia with the bacterial pathogens, e.g. *Campylobacter* species, *Shigella* species, and *Salmonella* species. The same precautions against food and waterborne diseases for all travellers should be emphasized when counselling PLWHA. They should be advised to avoid any uncooked foods, raw fruits and vegetables, raw or undercooked seafood or meat, tap water, ice made from tap water, unpasteurized milk and dairy products, and food and beverages purchased from street vendors. Frequent hand washing and use of proper hand hygiene with water and soap or alcohol-based solutions should be reinforced and is the best prevention against enteric infections.

Water should be either boiled or bottled, and when these are not feasible, alternative methods including use of portable water filtration units together with chemical treatment with e.g. iodine, tetracycline hydroperiodide tablets, and chlorine can be considered. However, travellers should be warned that all of these methods have caveats to their use, thus they should not be falsely reassured of their safety, and the basic precautions above should be vigilantly observed throughout the trip.

As some animals are known to be associated with infections e.g. *Salmonella*, *Campylobacter*, *Cryptosporidium*, *Brucella*, travellers should be advised to wash their hands after handling pets, avoid contact with pet faeces, and refrain from contact with reptiles, birds, and young farm animals.

Traveller's diarrhoea can occur despite strict adherence to the precautions as mentioned. Routine antimicrobial prophylaxis for traveller's diarrhoea is not recommended for HIV travellers, due to concerns of adverse effects and the possibility of promoting drug resistance. In the event of severe manifestations (severe diarrhea, abdominal cramping and fever), treatment of traveller's diarrhoea using oral rehydration solutions in combination with antidiarrheal agents and presumptive antibiotic regimen with azithromycin (but not clarithromycin) or a fluoroquinolone such as ciprofloxacin and levofloxacin may be considered. These agents are safe, as they are not known to have significant interactions with HAART drugs. Fluoroquinolones, however, should be used with caution as resistant strains of campylobacter have been increasingly reported in Southeast Asia. As a new agent, rifaximin is a non-absorbable antibiotic that has been shown to be active against several enteric pathogens. However, it is not readily available in Hong Kong and its use has been limited by its cost and inconvenient thrice-daily dosing schedule.

Other waterborne infections (e.g. cryptosporidiosis, giardiasis, schistosomiasis or leptospirosis) may also result from swallowing or even being exposed to some bodies of water during recreational activities. HIV travellers should be advised to limit their exposure to fresh water and be careful not to swallow water while swimming. They should wear shoes and protective clothing to limit their exposure to soil with possible fecal contamination. For those with unavoidable exposure to water potentially contaminated with leptospira, chemoprophylaxis with a weekly dose of doxycycline at 200mg is recommended.

**Vector-borne disease and malaria**

**General advice on preventing exposure**
HIV travellers are more prone to severe sequelae of certain insect-borne illnesses, e.g. leishmaniasis and Chagas disease. They need to take personal protective measures to avoid bites from different insects, such as mosquitoes (vectors for malaria, dengue fever, Japanese encephalitis, yellow fever, West Nile virus, and other arboviral infections), sandflies (vectors for leishmaniasis and *Bartonella bacilliformis*), ticks/mites/lice/fleas (vectors for rickettsiosis). They should be advised to put on light-colored clothing that covers most of the body surface, to use repellent-impregnated mosquito nets and to avoid shrubby areas and other invested habitats. The most effective repellent against a wide range of arthropods is *N, N*-diethyl-3-methylbenzamide (known as DEET). Insect repellents that contain DEET at concentrations up to 50% (range from 30-50%) are recommended for adults, and DEET up to 30% has been shown to be safe when applied to children older than 2 months according to the directions on the product labels. Repeated applications are necessary as DEET can be washed off with perspiration or rain. Permethrin can be used to spray clothes and bed nets, and permethrin-treated bed nets and clothing are also available as alternatives. Combined use of all of these measures can reduce insect bites substantially.

**Malaria**

Existing data on the relationship between HIV infection and incidence or severity of malaria are complex, and malaria has not been regarded as an HIV-related opportunistic infection. However, recent evidence has shown that HIV RNA plasma levels are increased during malaria infection, and CD4 counts are lowered in patients on HAART. In vitro studies also indicate that immune activation mediated by proinflammatory cytokines may contribute to HIV disease progression. HIV infection has been associated with recurrent malaria parasitaemia and reinfections, with increased clinical severity. A thorough discussion of malaria prevention should be included in the pre-travel consultation with travellers visiting malaria endemic areas.

Apart from personal protection measures against insect bites, an HIV traveller should be strongly urged to start chemoprophylaxis before the trip and be reminded of the importance of drug adherence. The up-to-date regional prophylaxis recommendations from CDC can be found at [http://www.cdc.gov/malaria/travelers/country_table/a.html](http://www.cdc.gov/malaria/travelers/country_table/a.html). In general, most drugs used for malaria prophylaxis are considered safe in PLWHA receiving antiretroviral drugs. Therefore, recommendations for prophylaxis and treatment of malaria are similar for them as for non-infected persons. The regimen should be tailored according to the specific area of travel and the local resistance to antimalarial drugs. Special consideration has to be taken for potential drug-drug interactions, e.g. between ritonavir and atovaquone-proguanil, chloroquine, and mefloquine, although no clinically relevant events have been reported and no dosage adjustments are recommended. Mefloquine carries the risk of additional neurological toxicity when used with efavirenz, and atovaquone-proguanil has been known to increase the level of zidovudine, thus, close monitoring of haemoglobin level is warranted. In general, doxycycline and atovaquone-proguanil are considered to be the drugs of choice for malaria prophylaxis among PLWHA receiving antiretroviral drug therapy in view of the safety profile, tolerability and lack of clinically significant drug interactions.

**Vaccine-preventable diseases**

**Vaccine issues in HIV travellers**

Travel-related vaccines can be categorized into 3 main groups: (a) routine vaccines; (b) recommended vaccines, depending on the destination and travel itinerary; and (c) required vaccines to acquire visa/entry permission for certain countries. Physicians should take the opportunity to update routine immunization and to offer required and recommended destination-specific vaccinations for their HIV clients during the pre-travel consultation after careful evaluation of the risk of disease acquisition versus the safety and efficacy of respective vaccines.
As a general rule, killed or inactivated vaccines are safe for use in PLWHA. Live vaccines should be avoided, especially when the CD4 count is <200 cells/µL (except for highly selected circumstances when measles or yellow fever vaccine may be considered when the risk of acquiring the infection outweighs the potential risk of the vaccination). Besides, the degree of immunocompetence also correlates with the degree of immunologic response to vaccinations. Studies have demonstrated a suboptimal antibody titre following vaccination at lower CD4 counts. Revaccination is recommended at least 3 months after immune reconstitution with antiretroviral therapy for any vaccines given while CD4 counts are <200 cells/µL. Box 13.2 summarizes the recommendations for specific vaccines relevant to adult HIV travellers.

Sexual health and blood-borne viral risks

It has been shown that sexual activity increases during international travel, with only a limited number of travellers reporting consistent use of condoms. A study on the practices of HIV travellers revealed that over 20% of travellers reported having had casual sexual activity with new partners while travelling. Physicians should take the opportunity during the pre-travel consultation to provide counselling on risks of exposure to other sexually transmitted diseases as well as the risk of transmitting HIV and acquiring a new strain of HIV, and remind PLWHA on safer-sex preventive strategies.

Entry restriction

International border regulations regarding HIV status are a unique and important part to consider while planning for international travel. Most countries do not have entry restrictions to PLWHA for short-term stay, so holidaymakers do not usually have any problems. USA has just lifted the ban in 2010. But there are still countries that impose restrictions on the entry of PLWHA and immigrants. In case of doubt, HIV travellers should check with consular offices to get the most up-to-date information and policy.

Approach to post-travel management of HIV travellers

When a returning HIV traveller presents with illness for post-travel assessment, a detailed history including the onset of symptoms in relation to the itinerary, the exact arrival and departure dates, specific risk behaviours (e.g. intake of ‘high-risk’ food/drinks, contact/bites by animals, fresh water exposures, insect bites, new sexual partners, hospitalization in foreign countries etc.), history of any pre-travel vaccination and chemoprophylaxis and the adherence to such treatment during and after the trip should be obtained to determine the potential exposure to infectious agents and the likely incubation period.

Because of its complexity, any returning, febrile HIV traveller should be evaluated immediately, preferably by an infectious disease clinician or tropical medicine specialist. Physicians should beware of the presence of HIV infection or AIDS, which can pose a diagnostic challenge as the natural history of infectious disease could be altered in different ways and that patients may present with atypical clinical manifestations. Apart from geographically focal infections for inclusion in the list of differential diagnoses, physicians should always consider commonly encountered infections.

For any febrile travellers returning from a malaria-endemic area, irrespective of the history of chemoprophylactic treatment and its adherence, all should be managed as medical emergency with a working diagnosis of malaria until proven otherwise.
### Box 13.2 Immunizations for adult HIV-infected travellers

<table>
<thead>
<tr>
<th>Vaccine type</th>
<th>Composition</th>
<th>CD4 &gt; 200 cells/µL in those with asymptomatic infection or on antiretroviral therapy with immune reconstitution</th>
<th>CD4 &lt; 200 cells/µL</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required in specific destination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>Live attenuated</td>
<td>✗</td>
<td>✗</td>
<td>If indicated, give at 10 days prior to travel; booster every 10 years; available only at sites designated by local health department§</td>
</tr>
<tr>
<td>Meningococcal vaccine</td>
<td>Conjugated (inactivated)</td>
<td>✗</td>
<td>✗</td>
<td>Safe; decreased response to serotype C noted in HIV-infected people; required/recommended when travelling to the ‘meningitic belt’ in sub-Saharan Africa or to attend the Hajj pilgrimage in Saudi Arabia</td>
</tr>
<tr>
<td>Polysaccharide (inactivated)</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended when travel to endemic areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typhoid vaccine</td>
<td>Live attenuated Ty21 a oral typhoid vaccine</td>
<td>Contrainindicated</td>
<td>Contrainindicated</td>
<td></td>
</tr>
<tr>
<td>Inactivated typhoid Vi capsular polysaccharide (intramuscular)</td>
<td>✗</td>
<td>✗</td>
<td>Safe; decreased response in those with CD4 &lt;200/µL; Recommended for travel to rural areas of countries endemic of typhoid or in any area of an outbreak, usually in Latin America, Southeast Asia, the Indian subcontinent and Africa</td>
<td></td>
</tr>
<tr>
<td>Japanese Encephalitis vaccine</td>
<td>Inactivated</td>
<td>Recommended if substantial risk exists</td>
<td>Recommended if substantial risk exists</td>
<td>3-dose regimen</td>
</tr>
<tr>
<td>Polio</td>
<td>Inactivated</td>
<td>✗</td>
<td>✗</td>
<td>Indicated when travelling to some areas of western Africa and the Indian subcontinent</td>
</tr>
<tr>
<td>Rabies vaccine</td>
<td>Inactivated</td>
<td>✗</td>
<td>✗</td>
<td>Consider in travellers with occupational risk and those with extended travel to endemic areas; no data on immune response</td>
</tr>
<tr>
<td>Routine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza vaccine</td>
<td>Inactivated</td>
<td>✗</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Live attenuated</td>
<td>Contrainindicated</td>
<td>Contrainindicated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal vaccine</td>
<td>Conjugated vaccine</td>
<td>NO data</td>
<td>NO data</td>
<td></td>
</tr>
<tr>
<td>Polysaccharide vaccine</td>
<td>✗</td>
<td>✗</td>
<td>Safe; efficacy result conflicting; Recommended for those with CD4&gt;200/µL</td>
<td></td>
</tr>
<tr>
<td>Tetanus-diphtheria</td>
<td>Toxoid</td>
<td>✗</td>
<td>✗</td>
<td>Safe; booster recommended every 10 years; no data on immune response</td>
</tr>
<tr>
<td>Hepatitis A vaccine</td>
<td>Inactivated</td>
<td>✗</td>
<td>✗</td>
<td>Safe; 2-dose regimen; can receive regardless of CD4 count, response improves after immune reconstitution with ART</td>
</tr>
<tr>
<td>Hepatitis B vaccine</td>
<td>Inactivated</td>
<td>✗</td>
<td>✗</td>
<td>Safe; 3-dose regimen; response improves after immune reconstitution with ART</td>
</tr>
<tr>
<td>Measles-mumps-rubella</td>
<td>Live attenuated</td>
<td>Recommended for non-immune persons</td>
<td>Contrainindicated</td>
<td>May consider measles immunoglobulin for those with CD4 &lt;200/µL travelling to measles endemic area</td>
</tr>
<tr>
<td>BCG</td>
<td>Live attenuated</td>
<td>Contrainindicated</td>
<td>Contrainindicated</td>
<td></td>
</tr>
</tbody>
</table>

§ Designated clinics for Yellow Fever Vaccination in Hong Kong: Travel Health Centre (Kowloon and Hong Kong). http://www.travelhealth.gov.hk/english/contactus/contactus.html

ART: antiretroviral therapy
Algorithm 13: Pre-travel consultation

Risk Assessment

Traveller
- Assess fitness to travel
  □ Immune Status
  □ Medical history and medication
  □ Vaccination history

Destination
- Infective risks
- Non-infective risks
  □ Environmental hazards
  □ Safety risks

Risk Stratification
? need to defer travel
? need to modify itinerary

Risk Management

General Advice
- Food and water-borne risks
- Avoidance of insects for vector-borne infections
- Advice on risk behaviours
- Access to medical care

Specific Advice
- Vaccination and chemoprophylaxis as indicated
- Check drug interaction
- Check entry restriction

Treatment Advice
- Bring enough antiretrovirals
- Manage time zone difference
- Ensure access to HIV care

Post-travel visit
References


Further reading


Expiration Date: 19 Aug 2016

# CME point / CNE point: 1 / PEM point: 0 (Healthcare related which contributes to the enhancement of professionalism of midwives/nurses)
- Please indicate one answer to each question.
- Answer these on the answer sheet and make submission by fax to Special Preventive Programme, Department of Health.

# Please contact respective authorities directly for CME/CPD accreditation if it is not on listed below.

<table>
<thead>
<tr>
<th>Accreditors</th>
<th>CME Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Health (for practising doctors who are not taking CME programme for specialists)</td>
<td>1</td>
</tr>
<tr>
<td>Anaesthesiologists</td>
<td>1</td>
</tr>
<tr>
<td>Community Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Dental Surgeons</td>
<td>1</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>pending</td>
</tr>
<tr>
<td>Family Physicians</td>
<td>1</td>
</tr>
<tr>
<td>Obstetricians and Gynaecologists</td>
<td>pending</td>
</tr>
<tr>
<td>Ophthalmologists</td>
<td>0.5</td>
</tr>
<tr>
<td>Orthopaedic Surgeons</td>
<td>1</td>
</tr>
<tr>
<td>Otorhinolaryngologists</td>
<td>1</td>
</tr>
<tr>
<td>Paediatricians</td>
<td>pending</td>
</tr>
<tr>
<td>Pathologists</td>
<td>1</td>
</tr>
<tr>
<td>Psychiatrists</td>
<td>pending</td>
</tr>
<tr>
<td>Radiologists</td>
<td>1</td>
</tr>
<tr>
<td>Surgeons</td>
<td>pending</td>
</tr>
</tbody>
</table>

1. People living with HIV/AIDS (PLWHA) should be advised to avoid non-essential travel to resource-limited areas except when

(a). Their CD4 count remains <200 cells/μL
(b). During the initial month when they are put on antiretroviral therapy
(c). They are receiving treatment for pneumocystis jiroveci pneumonia
(d). They have achieved satisfactory immune reconstitution with an undetectable viral load
(e). They cannot secure enough stock of medications for their journey

2. Which of the following vaccine(s) is/are contraindicated for PLWHA with a CD4 count of <200 cells/μL:
   i) Inactivated influenza vaccine
   ii) Hepatitis A vaccine
   iii) Injectable typhoid vaccine
   iv) Yellow fever vaccine
   v) Measles vaccine

(a). i) & iv) & v)
(b). ii) & v)
(c). iii) & iv)
(d). iii) & iv) & v)
(e). iv) & v)
3. The following precautions should be taken to minimize the risk of traveller’s diarrhea except:
   (a). To avoid raw and undercooked food, especially seafood
   (b). To avoid taking unpasteurized milk and dairy products
   (c). To take food and drinks from local street vendors
   (d). Frequent hand washing with soap and water or using alcohol-based hand rub for hand hygiene
   (e). Water should be either be boiled or bottled; drinking directly from the tap should be avoided

4. Which of the following statement is true regarding traveller’s diarrhea?
   (a). Strict adherence to food and drink precautions and maintenance of personal hygiene can prevent all traveller’s diarrhea
   (b). Routine antimicrobial prophylaxis is recommended for all HIV travellers going to resource-limited areas
   (c). The use of antimicrobial prophylaxis may promote drug resistance
   (d). Fluoroquinolones should be used as antimicrobial prophylaxis for travellers going to Southeast Asian countries
   (e). Traveller’s diarrhea is a vaccine-preventable disease

5. Which of the following are vector-borne diseases?
   i) Malaria
   ii) Leishmaniasis
   iii) Dengue fever
   iv) Yellow fever
   v) Typhoid fever
   (a). i) & iii) & iv)
   (b). ii) & iii) & v)
   (c). i) & ii) & iii) & iv)
   (d). iii) & iv) & v)
   (e). all of the above

6. Which of the following statement is not true regarding insect bite prevention?
   (a). Wearing long-sleeved and dark-colored clothes
   (b). N, N-diethyl-3-methylbenzamide (DEET) is the most effective repellent against a wide range of arthropods
   (c). DEET has to be applied repeatedly as it can be washed off by sweats or rain
   (d). Using permethrin-treated bed nets and clothing
   (e). Staying in air-conditioned or well-screened rooms and avoiding shrubby areas

7. Which of the following statement is not true regarding malaria and HIV in PLWHA?
   (a). PLWHA should be advised on insect bite prevention when traveling to malaria endemic areas
   (b). PLWHA should not take chemoprophylaxis for malaria due to fear of drug-drug interaction with their antiretroviral regimen
   (c). Chemoprophylaxis for malaria should be tailored according to the specific area of travel and the local resistance to antimalarial drugs
   (d). Mefloquine carries the risk of additional neurological toxicity when used with efavirenz
   (e). Doxycycline and atovaquone-proguanil are considered to be the drugs of choice for malaria chemoprophylaxis among PLWHA
8. Which of the following is not true regarding travel health in PLWHA?

(a). Pre-travel consultation should be sought at least 4-6 weeks in advance of departure to allow for the consideration of vaccination and modification of treatment regimen

(b). Recommendations and treatment of malaria are similar for PLWHA as for non-infected persons

(c). It is generally safe to give live-attenuated vaccines to PLWHA with a CD4 count of below 200 cells/μL

(d). The immunological response to vaccination may be suboptimal when given to PLWHA with a CD4 count of below 200 cells/μL

(e). Use of antibiotics such as azithromycin or a fluoroquinolone may be warranted in the event of traveller’s diarrhea with severe manifestations (severe diarrhea, abdominal cramping and fever)

9. Which of the following is not true when offering pre-travel advice to travellers?

(a). PLWHA should check with consular offices regarding entry restriction in certain travel destinations

(b). Travellers should be counseled on safe-sex practices

(c). Travellers should be advised to keep all their medications in the check-in luggage

(d). PLWHA with severe immunosuppression should be advised to modify or defer their travel plans in order to minimize the risks to their health

(e). Pre-travel advice regarding non-infectious aspects, e.g. management of temperature extremes, environmental hazards and personal safety should also be given during a pre-travel consultation

10. Which of the following is not true regarding post-travel management in PLWHA?

(a). Any febrile travellers returning from a malaria-endemic area should be managed as medical emergency to rule out malaria irrespective of the history of chemoprophylactic treatment

(b). Travellers presented with fever and muscle ache with history of fresh water exposure should be worked up for leptospirosis

(c). Travellers presented with chronic diarrhea should be worked up for parasitic enteric infections

(d). Referral to an infectious disease specialist is warranted for any returning, febrile HIV travellers

(e). The itinerary and exact travel dates are unimportant when enquiring history from a febrile returning travellers