Sexually transmitted infections and HIV among travellers — a review

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Summary Sexually transmitted infections are often acquired during travel. Infections are most often seen in young adults, travelling without a regular partner and among those who have higher numbers of partners while at home. Alcohol and recreational drug use may increase risk. The risks are highest from having unprotected sex with local partners in developing countries where the prevalence of infection can be many times higher than at home. The risks of acquiring HIV are highest in Africa, followed by South Asia. Special precautions are required by those going to work in health-care settings in high HIV prevalence countries. Travellers may benefit from advice about safer sex, condom use, emergency contraception and vaccination against hepatitis B. In special circumstances a starter pack for HIV post-exposure prophylaxis should be considered. Following return travellers should consider attending specialist services for a screen for sexually transmitted infections and HIV if they are concerned about exposure whilst travelling. A number of reports suggest that travel clinics need to pay more attention to the sexual health of travellers.

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Historical background

The sexual activity of travellers has been commented upon for centuries. While the notion that syphilis was introduced to Europe by sailors returning from Columbus’ first expedition to the New World has been challenged,\textsuperscript{1} there are many well-documented accounts of the spread of sexually transmitted infections (STIs) from country to country by travellers, including the spread of quinolone-resistant gonorrhoea from South-East Asia to Australia and the USA\textsuperscript{2} and the introduction of HIV from Africa into Europe, the USA and the Caribbean.\textsuperscript{3} The centuries-old concentrations of prostitutes in port cities all over the world bear testimony to the high demand for sex among those...
who travel by sea, while similar concentrations around railway stations and the common experience of being offered sex by telephone shortly after booking into hotels in many countries testify to similar demand among those who use more modern modes of travel. Despite widespread awareness of these issues travel agents, travel medicine specialists and public health experts have been criticized for not taking the sexual health of travellers sufficiently seriously. The potential for STIs to potentiate the transmission of HIV adds to the importance of addressing both STI and HIV prevention amongst travellers.

Sexual behaviour during periods of travel

New sexual relationships

Many studies have investigated the frequency with which travellers develop new sexual relationships whilst travelling (Table 1). These studies indicate new relationships are common amongst men and women and vary according to age and type, destination and duration of travel. A community based survey from the UK found that, overall, 5% of those who had travelled in the preceding year reported new sexual partners while travelling. Sexual activity is more likely among the young and those who travel alone. Thus Bloor reported that 10% of travellers aged 18–34 who travelled alone had sex with a new partner (1998). Those most likely to find new sexual partners are those who travel expressly for this purpose. They include “sex” or “dating” tourists who are typically men who go to Asian countries such as Thailand, Sri Lanka or the Philippines expressly in order to enter into sexual relationships with local men and women. They also include young single people who take short European holidays and have sex with their fellow travellers. Sexual relationships are more likely to develop on longer journeys; thus 39% of Finns on round-the-world trips reported new sexual partners. The travellers least likely to engage in casual sex are those who travel with a long-term partner.

Use of condoms

As Table 1 indicates consistent condom use with new partners shows considerable variation. Gillies found that while 71% of travellers carried condoms only 53% used them. Negotiation of condom use with local partners may be easier for males than females in countries where women traditionally have less control over sexual relationships. Not taking condoms is a good predictor of non-use.

Expatriate sexual behaviour

It is common for expatriates of either sex to enter into long-term relationships with either local partners or other expatriates during periods spent overseas. In a study of American Peace Corps workers 60% reported a relationship with a fellow worker and 39% with a local person. A study of about 900 Dutch expatriates reported 41% of men and 31% women had sexual relationships with local partners. Such relationships proved to be an important factor in HIV acquisition by non-Africans in Africa before awareness of HIV became widespread. Questions about sexual behaviour are important during health screens for returned expatriates.

Migrants

The importance of migration in the spread of sexually transmitted diseases and HIV has been discussed widely. Among newly arrived migrants, there may be a significant number who have suffered torture, including sexual violence during conflict or in detention and who require skilled screening for a wide range of sexually transmitted and non-sexually transmitted infections as well as psychological support for post-traumatic syndromes. In the UK many such patients are cared for by the Medical Foundation for the Care of Victims of Torture.

Recent research in the UK has also highlighted the risks to migrants who return to African countries of origin and engage in sex in areas of high HIV prevalence during home visits. Fenton et al reported that 44.5% of Africans studied had made a home visit in the last 5 years and 40% of males and 21% of females had sex with a new partner during their visits.

Travellers with increased risk of STI or HIV acquisition

Identified predictors of having sex while travelling

Predictors of the likelihood that a traveller will have sex while travelling, identified in many of the studies listed in Table 1 include:

- male sex
- being young
<table>
<thead>
<tr>
<th>Source of study</th>
<th>Study population</th>
<th>Number</th>
<th>Age (yr)</th>
<th>Reporting new sexual partners (%)</th>
<th>Condom use</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Belgians diagnosed with HIV after living in central Africa</td>
<td>33</td>
<td>—</td>
<td>14 times more likely than HIV negative controls to report sex with local women, 10 times more likely to report sex with prostitutes</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Denmark</td>
<td>Tourists</td>
<td>1229</td>
<td>22.5 (mean)</td>
<td>Males 40, females 4</td>
<td>M 19/40, F 0/4</td>
<td>6, 7</td>
</tr>
<tr>
<td>Finland</td>
<td>Finnish travellers</td>
<td>2665</td>
<td>—</td>
<td>39</td>
<td>—</td>
<td>7</td>
</tr>
<tr>
<td>Japan</td>
<td>Male tourists and businessmen visiting Bangkok</td>
<td>105</td>
<td>—</td>
<td>71% sex with sex workers</td>
<td>Consistent use in 51%</td>
<td>8</td>
</tr>
<tr>
<td>Japan</td>
<td>Tourists to Bangkok</td>
<td>150</td>
<td>18–42</td>
<td>23% with casual partner12% with sex worker</td>
<td>None with casual partners 13%, none with sex workers 0</td>
<td>9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Expatriates returning from 6 months or more in Africa</td>
<td>1968</td>
<td>16–81</td>
<td>Long term African partner—males 7.9%, females 2.1%, sexual contact with Africans—males 30.7%, females 13.1%</td>
<td>Consistent use with casual African partners—men 22.3%, women 18.6%</td>
<td>10</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Marines and naval personnel</td>
<td>1885</td>
<td>28.1, (mean)</td>
<td>45</td>
<td>Consistent use in 89%</td>
<td>11</td>
</tr>
<tr>
<td>Norway</td>
<td>STD patients</td>
<td>599</td>
<td>—</td>
<td>41% in previous 5 years 12.2</td>
<td>Low especially after alcohol 24% consistent use</td>
<td>12, 13</td>
</tr>
<tr>
<td>Peru</td>
<td>International travellers</td>
<td>442</td>
<td>27.6 (mean)</td>
<td>40.9 reported sex with prostitutes</td>
<td>Inconsistent use in 73%</td>
<td>14</td>
</tr>
<tr>
<td>Spain</td>
<td>Sailors calling at West African ports</td>
<td>203</td>
<td>—</td>
<td>19</td>
<td>53.6</td>
<td>15</td>
</tr>
<tr>
<td>Spain</td>
<td>Tropical outpatient clinic</td>
<td>1008</td>
<td>—</td>
<td>27.7 of those with history of travel</td>
<td>—</td>
<td>16</td>
</tr>
<tr>
<td>Sweden</td>
<td>Females in Sweden</td>
<td>996</td>
<td>25 (mean)</td>
<td>—</td>
<td>—</td>
<td>16</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Tourists to developing countries</td>
<td>10 524</td>
<td>—</td>
<td>30</td>
<td>38% unprotected</td>
<td>17</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Travel clinic attenders and passengers departing for Kenya</td>
<td>3509 and 607</td>
<td>—</td>
<td>51</td>
<td>Consistent in 62%</td>
<td>18</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Males who holidayed abroad in first 9 months of 1990</td>
<td>1220</td>
<td>17–45</td>
<td>7</td>
<td>—</td>
<td>19</td>
</tr>
<tr>
<td>UK</td>
<td>GUM clinic attenders</td>
<td>196 or 243</td>
<td>18–63</td>
<td>20 (women, 51 (heterosexual men, 36 (homosexual men)</td>
<td>Lower in women than men</td>
<td>20</td>
</tr>
<tr>
<td>UK</td>
<td>General practice cross section with travel in past 1 year</td>
<td>354</td>
<td>16–40</td>
<td>5</td>
<td>Consistent use in &lt;one third</td>
<td>21</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td>757</td>
<td>30 (mean)</td>
<td>18.6</td>
<td>64% irregularly or never</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 1 (continued)

<table>
<thead>
<tr>
<th>Source of study</th>
<th>Study population</th>
<th>Number</th>
<th>Age (yr)</th>
<th>Reporting new sexual partners (%)</th>
<th>Condom use</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Returned travellers attending tropical medicine clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GUM clinic attenders</td>
<td>386</td>
<td>18–64</td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51 (male), 36 (gay male), 20 (female)</td>
<td>66% no use or inconsistent use</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>Attenders at 2 Scottish GUM clinics</td>
<td>325</td>
<td>16–57</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.6 (women), 51 (heterosexual males), 36 (gay male)</td>
<td>Inconsistent use in 50% of women and 59% of men</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>Travellers reporting new partner during travel</td>
<td>400</td>
<td>18–34</td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Gay men on vacation</td>
<td>562</td>
<td>33</td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>UK</td>
<td>Young people holidaying in Ibiza</td>
<td>1559</td>
<td>16–35</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>47.5% of those travelling alone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Peace corps volunteers overseas</td>
<td>1080</td>
<td></td>
<td>About 75% under 30</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60 with another volunteer, 39 with host country partner</td>
<td>Consistent use in less than 32% of unmarried volunteers</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>American spring break vacationers</td>
<td>534</td>
<td>96% 18–25</td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75% rarely or never</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: New HIV diagnoses reported through Clinician HIV report surveillance system to the UK Communicable Disease Surveillance Centre.30
● travelling alone or with a peer group but not a regular partner
● high alcohol consumption
● recreational drug use
● extended duration of travel
● repeat visits to same location
● early coitarche
● frequent casual sex in home country
● higher number of lifetime partners
● more frequent extramarital sex.

Risk factors for acquiring STI or HIV when travelling

The spread of STIs is determined by the transmission efficiency of each infection, the rates of contact of uninfected with infected persons and the duration of each infection. The transmission efficiency of HIV is enhanced by other STIs. The risk of acquiring an STI depends on the prevalence of infection in the type of partner with whom the traveller has sex. The highest risk comes from unprotected sex with partners who are rarely screened or treated for infection and who themselves have unprotected sex with many partners. In a developing country the highest risk might come from sex with a low-paid sex worker who does not expect condom use. In a Mediterranean holiday destination paid sex with a health-conscious prostitute is likely to carry less risk than unpaid sex amongst promiscuous teenagers. Tourists often judge the potential riskiness of partners poorly. Thus those entering into liaisons in Thailand that last a number of days often delude themselves that their partners are at no risk of infection and are romantically attached, rather than women belonging to a core group of high frequency transmitters of STIs. In a developing country the highest risk might come from sex with a low-paid sex worker who does not expect condom use. In a Mediterranean holiday destination paid sex with a health-conscious prostitute is likely to carry less risk than unpaid sex amongst promiscuous teenagers. Tourists often judge the potential riskiness of partners poorly. Thus those entering into liaisons in Thailand that last a number of days often delude themselves that their partners are at no risk of infection and are romantically attached, rather than women belonging to a core group of high frequency transmitters of STIs. Conversely female tourists who marry young men met on tropical beaches may mistakenly believe their consorts are safe and motivated by love when their real motivation is a desire to migrate or obtain a foreign passport and the risks of infection may be high.

Uniformed services and seafarers

Serving overseas with armed forces has for centuries been associated with an increased risk of acquiring STIs. The establishment in the UK of free and confidential services for STIs originated from concern about the impact on war capability of servicemen infected with STIs which had reached over 50% during the Boer War and was greater than 20% after leave in Paris during World War I. As recently as the Vietnam War 27% of Australian troops were contracting STIs. A British study reported that troops stationed in the tropics were 25 times more likely than an age matched comparison group in the UK to acquire an STI. In the past attempts to reduce these risks were made by the institution of regulated brothels where prostitutes were subjected to an inefficient system of regular examination. Experiments with mass treatment of prostitutes were conducted by the US Navy in the 1960s in the Philippines to try and reduce infection rates among servicemen at Subic Bay taking rest and recreation at Olangapo City. A more modern approach is to educate servicemen and to promote condom use as a means lower rates of STIs. It is not simply contact with prostitutes that increases the risk of STIs to servicemen serving abroad. During periods of warfare both consensual and non-consensual sex between invading forces and local residents and both commercial and non-commercial sexual activity is commonplace. There is strong circumstantial evidence that a key event in the spread of HIV from Uganda to Tanzania was the war between the two countries that led to the expulsion of Idi Amin. It is believed that HIV originally reached Haiti from Congo among the several thousand Haitian professionals who took temporary jobs there. Mariner classically show most, if not all, the predictors of having sex while travelling listed above. Nearly half the crew of Cook’s third voyage from 1776 to 1779 acquired STI. High rates of STIs and HIV in mariners have been recorded ever since, although US Navy personnel did not appear to have an increased chance of acquiring HIV in foreign ports.

The sexual behaviour of airline crew received prominent attention in the early days of the American HIV epidemic when it emerged that an unusually large cluster of cases were linked contact with a Canadian male airline steward.

Business travellers

Business travel is widely associated with an increased risk of contracting STIs. The hotel lobbies of expensive hotels patronized by businessmen act as a magnet to prostitutes in many countries. In a number of countries it is commonplace for business entertainment to include provision of sexual services.

Health workers

Increasing attention has been focussed in recent years on the significant occupational health risks to health workers who travel from affluent countries...
to work in poorer countries with high endemicity of HIV, hepatitis B and hepatitis C.43,44 Now that well organized protocols for handling needlestick injury are established in the developed world, there has been considerable discussion about how these protocols might be adapted for use in resource-poor settings. An example of good practice is the advice given to UK medical students who wish to undertake elective periods of study in countries with high levels of HIV. Such students may obtain 3–5 day “starter pack” of antiretroviral therapy to be taken promptly in the event of needlestick. They can then arrange to return home promptly for further advice and, if necessary, further medication. Further details of post-exposure prophylaxis (PEP) are given below.

Sex tourism

Detailed in situ studies of male tourists having commercial sex with partners in Kenya, Brazil, Thailand, the Philippines and Dominican Republic have been carried out by Kleiber and Wilke.45 Study subjects tended to be in their 30s, of low educational attainment, unmarried and travelling alone. Organized group tours for this purpose are now banned by most tourist organizations. In all, 22.4% of male and 4.1% of female young UK travellers travelling to Ibiza reported that they were going expressly to look for sexual opportunities.27 Some travel companies that target young people have drawn strong criticism for explicitly advertising their holidays as a form of sexual tourism. Certain destinations draw significant numbers of tourists seeking sex, although these fashions can change rapidly. Examples include the popularity of the Morocco, Ghana, the Canaries and Sitges in Spain with gay men; of Thailand and the Philippines with heterosexual males seeking Asian women; of the Gambia, Kenya, Haiti and Jamaica with European and American women seeking African men; of Thailand with young female Japanese tourists. Efforts to clamp down on criminal paedophile activity through new laws allowing prosecution of offenders in their home country has tended to displace this activity, for example from the Philippines to Vietnam recently.

Migrant sex workers

While there is a long history of women displaced from their own countries taking up sex work overseas, the scale of international sex work has now reached unprecedented levels. In many European countries a high proportion of sex workers are recent migrants from all over the world.46 Migrant sex workers have been found to have higher levels of infection and less knowledge of prevention than their local counterparts.4 Similar patterns have been observed in many other parts of the world. While such women may not constitute the usual run of clients in a travel medicine clinic, it is not unusual for young women from wealthier countries to finance themselves for a year or more of overseas travel at least partly through sex work.

STI and HIV morbidity among travellers

Data on STI morbidity among travellers is derived from specific studies of travellers and also from national surveillance statistics for diseases such as syphilis and HIV where data on the suspected origin of infections may be included. Biological clues to the origin of infections are increasingly available through the use of strain characterization techniques such as DNA fingerprinting for detailed characterization of micro-organisms. These techniques have been used especially for the study of imported gonorrhoea and HIV strains. In some studies more than 50% of infections studied were acquired overseas during vacations or from foreign sex workers working locally on short-term visas.4

STIs

A Swiss study of morbidity in 10,524 returned travellers from developing countries ranked genital discharge and genital ulcers 7th and 8th in order of frequency.47 Gonorrhoea was the most commonly reported infection (3 per 1000) and syphilis was occurred in 1 per 1000. A study by a Kenyan general practitioner showed that urethritis accounted for 6% of consultations with tourists.48 A survey of 2665 travelling Finns indicated that 7% had contracted a STI.7 In all, 5.7% of returned travellers attending a tropical medicine clinic reported contracting an STI whilst travelling.23 Mardh et al. compared the past and present STIs in women with and without a history of casual sex while travelling and noted higher rates of active cervical human papilloma-virus infection and a higher likelihood of previous experience of gonorrhea, chlamydia, genital warts and pelvic infection among women with a history of casual sex while travelling.49

HIV

Data from the UK Health Protection Agency for 2000–2002 (Table 2)30 showed that 15% of 2562
newly diagnosed infections occurred among those born in the UK. Where data on country of infection was available (2031), this was overseas in 20% of cases, with Africa being the most important country for infection. Heterosexually acquired HIV was much more likely to be acquired overseas (69% of men, 25% of women) than homosexually acquired infection (6%).

Sexual violence

There is little data on the frequency with which travellers are victims of coercive sex beyond occasional lurid accounts that appear in newspapers following sexually motivated murder. There is much anecdotal evidence which emphasizes the vulnerability of lone female travellers, especially those on low budget holidays. Holidays where alcohol consumption is high pose additional risks and the phenomenon of rape of victims whose drinks are spiked with sedating drugs advertised over the internet is becoming increasingly common. In some destinations, notably urban South Africa and Papua New Guinea, levels of sexual violence and gang rape of women are disturbingly high.

Destinations associated with increased risk for acquiring STI and HIV

Predictably the countries that have acquired the widest reputation are those that combine a high local prevalence of infection with a large tourist industry and high levels of prostitution. Thailand and the Philippines acquired notoriety during the Vietnam war when large numbers of servicemen took leave in these countries causing a rapid expansion of a pre-existing sex industry. Since then Thailand in particularly has acquired an excellent reputation for high levels condom use and rates of STIs have fallen significantly. The risk of acquisition of HIV infection has been mainly associated with travel to Africa where prevalence rates are the highest in the world. The risk of acquiring syphilis has been associated with travel to the former Soviet Union a variety of other destinations.

Preventive measures

Prior to departure

Including safer sex in travel advice

Since the advent of HIV, most leaflets that provide advice about staying healthy whilst travelling now include a discussion of safer sex. The options in order of effectiveness available to the traveller are sexual abstinence, avoidance of penetrative sex, avoidance of high risk partners and the use of barrier methods. Advice to seek medical advice early in the event of risky exposure or genital symptoms is also important. Face-to-face advice should include provision of information about STIs and HIV, on preventive methods and factors like drugs and alcohol which can interfere with the adoption of safer behaviour.

Packing condoms

The traveller should be advised to take good quality condoms of the right size and of a brand in which
they already have confidence, rather than rely on local products of uncertain quality. A supply of water-based lubricant is essential for anal sex and reduces the risk of breakage for any type of sex. Condoms do not tolerate extreme temperatures well and are liable to rupture if used with oil-based lubricants. See the Barrier Methods section below for further information.

**Emergency (post-coital) contraception**
Female travellers to destinations where emergency contraception may be difficult to obtain may like to consider taking an emergency contraception pack, a single dose of levonorgestrel 1500 μg being the simplest option.

**Vulvovaginal candidiasis**
The combination of warm, humid tropical environments and tight-fitting clothing may increase susceptibility to candidiasis in women. Advice to carry a supply of suitable medication may be helpful to women who are susceptible to this condition.

**Vaccination against Hepatitis B**
Visitors to areas with high endemicity of hepatitis B, if not already vaccinated or immune, should be made aware of the risks of acquiring hepatitis B sexually and offered vaccination if desired. A discussion about the need for Hepatitis B vaccination can provide a useful entry point in discussion about a travellers intended sexual activity whilst overseas.

**HIV prophylaxis**
Travellers heading for environments with a high risk of occupational or sexual exposure to HIV should check to see what help is available in the event of accidents. One study has suggested that the risk of being infected with HIV after needlestick injury may be reduced by 80% by giving emergency post-exposure prophylaxis (PEP) with zidovudine. A recent study from San Francisco showed that a third of 367 sexual assault survivors chose to take PEP, with analy raped men being the most likely to use it. Data from a non-randomized study of the effectiveness of PEP after sexual exposure in humans suggested an 83% reduction in risk after a 1 month course of zidovudine with lamivudine. Usual practice is for a 1 month course of PEP to be administered only after expert assessment and counselling which may be hard to find in developing countries. If anti-HIV drugs are unlikely to be available at the intended destination, intending travellers should ask a knowledgeable specialist for assistance in obtaining an emergency starter pack before departure. The treatment recommended by the UK Department of Health is 1 month of triple therapy with zidovudine (AZT) 250 mg twice daily, lamivudine (3TC) 150 mg twice daily and a protease inhibitor such as nelfinavir 1250 mg twice daily. Newer draft guidelines from the British Association of Sexual Health and HIV discuss PEP after sexual exposure and recommend lamivudine with either AZT, tenofovir or stavudine plus either nelfinavir or lopinavir. Common side effects are nausea, vomiting and diarrhoea. Arguments have been put forward for recommending a single 200 mg dose of nevirapine as a simpler, less toxic and less expensive alternative to a whole month of triple therapy, on the basis of its effectiveness in preventing vertical transmission. There are concerns about the adequacy of this approach in environments with resistance to this drug. Current information suggests AZT is mostly safe in pregnancy but there is less information about other drugs, other than single dose nevirapine which has been extensively tested for prevention of mother-to-child transmission of HIV. The added benefit of three drugs over AZT alone is unknown but three drugs might be important if the source has developed drug resistance. Treatment is best started within 2 h of exposure, following first-aid (allowing any wound to bleed freely, then thorough washing or irrigation). Travellers who embark on a PEP starter pack should consider returning home promptly and seeking expert advice about the next step as soon as possible. Use of PEP is discussed further below.

**During periods of travel**

**Options for reducing risk**

**Barrier methods**
The efficiency with which many STIs and HIV are transmitted through sexual contact can be reduced sharply by the correct use of barrier methods, principally male and female condoms. The level of protection these devices offer against human papillomavirus and herpes simplex infections is believed to be somewhat less as these infections commonly involve sites not protected by condom use. Effective condom use requires attention to the following details:

- choose a reliable (kitemarked) brand that has not reached its expiry date
- choose a size that fits

Choose a reliable (kitemarked) brand that has not reached its expiry date
Choose a size that fits
• ensure it is stored prior to use in a way that will not hasten deterioration
• take care to avoid breaking condoms when taking them out of their packaging
• use a water-based lubricant to reduce the risk of breakage (always if used for anal sex)
• avoid use of oil-based lubricants which can cause rupture
• ensure that condoms are immediately available when need arises
• ensure that condoms are put on prior to any sexual contact
• ensure withdrawal takes place prior to detumescence to avoid risk of slippage.

Using post-exposure prophylaxis for HIV
Travellers who believe they may have been exposed to risk of HIV sexually (e.g. through unprotected sex or sexual assault) or non-sexually (e.g. needle-stick injury to health workers, transfusion following road accidents) may suffer severe anxiety. Such anxiety can be allayed considerably in those who are able to use some form of HIV post-exposure prophylaxis as described above. Those who not equipped with PEP will need to know whether they can obtain expert assessment and advice and PEP locally or whether they should attempt to return home, bearing in mind that PEP works best when given as soon as possible and is unlikely to have any benefit after 72 h. In some health care settings there may be institutional policies regarding the handling of needlestick. Typically these will involve some form of risk assessment and a designated person may approach the source with a request for a blood sample if it is someone of unknown HIV status. This is greatly preferable to the injured party undertaking this stressful task without support. For details of PEP drugs see above.

Post-exposure prophylaxis for other STIs
The issue of post-exposure prophylaxis for sexually transmitted infections other than HIV is most likely to arise in conjunction with sexual assault. While this may be a rare event during travel, it causes great distress and anxiety about the possibility of infection. Travellers to high risk destinations, such as South Africa, should be given told about current guidance on managing this scenario. It is possible to provide antibiotic prophylaxis against syphilis, chlamydia, gonorrhoea and trichomoniasis although the number of drugs involved is considerable and they may be better tolerated if staggered over a period of some hours. Guidelines for prophylaxis after sexual assault have been published in specialist journals and on the internet.59

Planned antibiotic prophylaxis by sex tourists
Pre- and post-exposure antibiotic prophylaxis against bacterial STIs (primarily gonorrhoea) has commonly been used by male travellers visiting prostitutes and is believed to have contributed to the early rise of antibiotic resistance of this organism in South East Asia. The efficacy of this approach has not been formally evaluated in travellers, although periodic presumptive treatment of sex workers with regular doses of azithromycin has been evaluated in sex workers and their clients in South Africa. Concern about promoting antibiotic resistance means that antibiotic prophylaxis for STIs is generally condemned as a preventive measure, although recently their has been controversial advocacy of pre-exposure prophylaxis for HIV using the drug tenofovir.60

Following return

Screening for STIs and HIV
Travellers who have been sexually active with new partners should be encouraged to visit a sexual health clinic and obtain a full screen for STIs, hepatitis viruses and HIV after their return and prior to having sex again at home.31 The timing of such a screen needs to take into account the long incubation periods for syphilis and HIV (wait 3 months) and may need to be repeated to obtain valid results. When gonorrhoea is identified in a returned traveller the possibility of resistant strains should always be considered. It is important to consider HIV seroconversion as a cause of fever in returned travellers.61

Examples of interventions to promote safer sex among travellers

Dutch marines and naval personnel in Cambodia
Hopperus-Bruma et al. published an account of sexual behaviour and STIs among Dutch marines and naval personnel on a United Nations Mission in Cambodia in 1995. A total of 842 (45%) of 1885 persons who handed in questionnaires reported sex with prostitutes or the local population. Prior to departure all personnel received half an hour of education on sexual risk behaviour and STIs, emphasizing the risk of HIV transmission. Written materials were also provided and 24 000 condoms were made freely available. Consistent condom use was high (89%) but 30% of users reported condom
failure. In all, 43 cases of STI were reported (1.9% of 2289 persons).

Interventions with tourist industry workers

A study in Torbay, UK indicated that nearly half male workers had had sex with four or more tourists in the past year with 40% condom use at last intercourse. This led to a 3-year intervention project involving peer educators.62 Club Mediterra- rannee has a program for educating its staff about sexual health. A Swiss programme to train tour leaders, flight attendants and resident managers as mediators of HIV prevention has been described.

Swiss airports

Gehring et al. have developed an intervention for use at airports but highlight the problems of evaluating such efforts.63

American Peace Corps workers in Africa

Cappello et al. have reported on 282 Peace Corps volunteers serving in Zaire in the 1980s. All received extensive education and counselling about HIV. No HIV or Hepatitis B seroconversions were recorded throughout the study period and the rate of sexually transmitted diseases dropped from 131 to 68 per 1000 per year.64

Autralian Travel-Safe Program

This program, launched in 1991, included advertising to travellers, pamphlets, advertising in Thailand, and distribution of travel safe kits to general practitioners and advice to business travellers.

Working with airlines

Efforts to include AIDS prevention messages in inflight magazines failed with all European airlines except for the Polish carrier, LOT.4

Interventions directed at migrant populations

AIDS and mobility has become the subject of a number of programmes developed by the World Health Organization and within individual countries.

An intervention at a large travel clinic

Gagneux et al. have described a study which investigated the effectiveness of information provided in leaflets, leaflets appealing against the phenomenon of sex tourism, and the opportunity to win prizes in a quiz competition about malaria and AIDS.18

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