On June 11th 2010, the FIFA World Cup kicks off at Soccer City Stadium, Johannesburg, in a country gripped by World Cup fever; the good kind that is. Over 350,000 international visitors are expected to enter South Africa to attend the month-long competition, which constitutes the largest mass gathering for a single sporting event. One of the many challenges in hosting the World Cup, is to ensure that visitors stay well during their visit and do not succumb to World Cup fever of a very different kind. Practical health advice targeted at key risk exposures have been posted on a number of sites and a summary of advice for travellers attending the World Cup is given in Table 1.

Three epidemics that are potential risks during the World Cup demand heightened awareness: measles, influenza and HIV. Immunisation against vaccine-preventable diseases is a key component in prevention of travel-related illness, yet uptake of vaccination in travellers is low (5–45%). South Africa is currently in the midst of a measles epidemic with close on 12,000 laboratory-confirmed cases since January 2009. Although the number of new cases may be expected to decrease following a mass vaccination campaign for under 15-year olds that started in South Africa in mid-April, coverage rates in excess of 85% would be needed to control the epidemic. Hence, all visitors who have not had measles or completed a course of measles vaccination should be vaccinated at least 14 days prior to travel. Similar advice was given for travellers to the EURO 2008 football championship in Austria and Switzerland, which was held during an outbreak of measles in Austria in the preceding weeks. No cases of measles related to the competition were reported. However, three sporting events have been associated with measles outbreaks, so travellers would do well to ensure they are vaccinated if indicated.

Evidence from the last 26 years suggests that the timing of the World Cup will coincide with South Africa’s influenza season. Hence, vaccination against influenza is strongly advised. Having been introduced into South Africa during the 2009 and following on from the experience of the northern hemisphere winter influenza season, pandemic influenza A (H1N1) virus is predicted to cause the majority of infections during 2010. Little antigenic drift has occurred in the pandemic strain since it was first isolated, suggesting that the northern hemisphere monovalent influenza A (H1N1) vaccine should be equally efficacious as the 2010 southern hemisphere trivalent vaccine in preventing influenza infection during the World Cup. The advantage of the southern hemisphere vaccine is that in addition to the pandemic strain, protection is afforded against the influenza H3N2 strain, that was the predominant circulating strain in South Africa in 2009 and influenza B, which will likely cause a minority of infections. Reminding visitors and locals alike about the need for good cough etiquette and basic infection control is equally important in trying to limit spread of the virus.

Concerns surrounding an increase in transmission of sexually transmitted infections (STIs) are common to all mass gatherings. However, in a country such as South Africa, with a national HIV seroprevalence rate of 29.3%, these concerns have even firmer foundation. It is absolutely critical that the local organising committee and national government provide strong messaging surrounding safe sex with particular emphasis on condom use. Moreover, active campaigns such as those undertaken during the 1996 Atlanta Olympic Games and the 2006 FIFA World Cup in Germany ensuring condom distribution, will be vital in promoting safe sex. Involvement of players themselves proved successful during the 2007 Cricket World Cup in the Caribbean, where players and officials were involved in a joint effort with the International Cricket Council, UNAIDS, UNICEF and the Caribbean Broadcast Media Partnership on HIV/AIDS. Whenever clinical features suggest, HIV seroconversion illness should be actively excluded in ill returning travellers from the World Cup, who give a history of sexual exposure during travel.

If travel advice is adhered to, then visitors to South Africa for the 2010 World Cup should be adequately protected against most, if not all, infectious diseases. But what of the risk to South African citizens from imported infections? Many country-specific infections that could be imported rely on vectors that are uncommon or absent in South Africa. The International Health Regulations (IHR) mandate (require) that all travellers from countries where yellow fever is known to occur should have valid yellow fever vaccination documentation or may be denied entry. The onus is being placed on airlines to enforce this prior to embarkation. Other viral infections such as poliomyelitis, which remains endemic in a small number of African and Asian countries, could be imported into South Africa. The mass immunisation campaign against polio currently being undertaken in South Africa is fortuitous and a timely reminder of a threat both from within and from outside our borders. Immunisation of visitors from polio endemic countries who are visiting South Africa would go a long way towards protecting the local population from imported polio.

The most commonly reported communicable diseases at mass gatherings are food- or water-borne infections which would affect South Africans and visitors alike. Examples of such outbreaks that have occurred at sporting events include a hepatitis A outbreak linked to water consumed from a fountain at a football championship in Spain and a norovirus outbreak during the Special Olympics USA national games in Iowa. Adherence to rigorous standards of hygiene during food preparation is the key to protecting both visitors and locals alike.

It is impossible to plan for every eventuality in terms of importation of infectious diseases during the World Cup. Hence, it is important that healthcare practitioners consider imported infections when attending to international visitors with fever, and to South Africans who have been...
Table 1: Travel advice for visitors to the 2010 FIFA World Cup

<table>
<thead>
<tr>
<th>City</th>
<th>Advice</th>
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<tbody>
<tr>
<td>Durban</td>
<td>Limited risk - vaccination against yellow fever is not required.</td>
</tr>
<tr>
<td>Cape Town</td>
<td>Limited risk - vaccination against yellow fever is not required.</td>
</tr>
<tr>
<td>Pretoria</td>
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</tbody>
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### Preventative measures
- Travel insurance to cover emergencies while abroad is advisable.
- Extra supplies of chronic medication as well as a prescription to cover for unforeseen circumstances.
- Safety and security – is of the utmost concern for all travellers, who should be vigilant when attending World Cup matches and travelling in South Africa.

### Additional advice for travel to rural areas of South Africa or to neighbouring countries

#### Malaria prevention
- Malaria endemic regions are low lying areas of Limpopo, Mpumalanga and northeastern part of KwaZulu-Natal.  
- Prevention of mosquito bites – dusk to dawn, protective clothing, which can be sprayed with insect repellent, tuck trousers into socks, frequent use of DEET-based insect repellents.
- Impregnated bed nets.
- Chemoprophylaxis against chloroquine-resistant Falciparum malaria is indicated for travel to South Africa’s endemic areas and to neighbouring countries.

#### Prevention of tick bites
- Protective clothing, which can be sprayed with insect repellent, tuck trousers into socks, frequent use of DEET-based insect repellents.
- For anticipated long periods of exposure, consider treating clothing and shoes with 0.5% permethrin.

### Vaccine recommendations
- Country-specific recommendations for travel outside of South Africa e.g. yellow fever and typhoid
- Rabies – is endemic in South Africa and predominantly associated with dog bites. Generally, the risk to travellers is low and post-exposure vaccination and rabies immunoglobulin are readily available. However, visitors who are intending to travel off the beaten track in South Africa or neighbouring countries should consider rabies immunisation.

### Preventative and general measures
- As per travel to World Cup cities only

### International travel advisory websites
- CDC: http://www.cdc.gov
- National Institute for Communicable Diseases, South Africa: http://www.nicd.ac.za
- South Africa.info: http://www.southafrica.info/travel/advice/healthtips.htm

### References
16. Loewenberg S. Fears of World Cup sex trafficking boost booming Lancing. Lancet 2006; 368: 105-106