


Foreign travel-associated illness – a focus on those visiting friends and relatives 2008 report



Summary

People travel abroad for all sorts of reasons, and the reason why they travel affects where they go, and therefore their risk of acquiring infectious disease. In recent years, the number of visits abroad made by United Kingdom (UK) residents to visit friends and relatives (VFR) has increased and VFR travel often involves travel to regions that have a higher risk of certain, preventable, infectious diseases such as malaria, typhoid, paratyphoid, and hepatitis A. For these diseases, a disproportionate burden falls on those who have undertaken VFR travel. To reduce the number of cases of travel associated illness reported in the UK, particular attention needs to be given to protecting the health of these travellers.



Key findings

- Of all visits abroad made by UK residents in 2007, 18% (12,214,367) were for VFR travel and of those, a significant number travelled to countries with high prevalence of malaria, typhoid, paratyphoid, and hepatitis A.
- The majority of cases of typhoid, paratyphoid, and malaria reported in England, Wales, and Northern Ireland in 2007 were in people who had travelled to endemic countries to visit friends and relatives, with the highest proportions of cases normally resident in London.
- For typhoid and paratyphoid, the majority of VFR cases reported in 2007 were of Indian subcontinent ethnicity and had acquired their infection in countries of their ethnic origin (mainly India, Pakistan, and Bangladesh).
- For malaria, the majority of VFR cases with falciparum malaria reported in 2007 were of Black African ethnicity or descent and had acquired their infection in countries of their ethnic origin or descent (mainly Ghana, Nigeria, Uganda); the majority of VFR cases with vivax malaria were of ISC ethnicity and had acquired their infection in countries of their ethnic origin or descent (mainly India and Pakistan).
- Contributing factors for the disproportionate burden of typhoid, paratyphoid, and malaria in those travelling for VFR reasons were not seeking travel advice before their trip, and not taking adequate prevention measures. VFR cases of enteric fever were less likely to have sought health advice before travel than non-VFR cases, particularly those who were non-UK born. The vast majority of malaria cases associated with VFR travel had not taken any (or appropriate) chemoprophylaxis.

Recommendations

- Travellers visiting friends and relatives in countries with endemic infectious diseases need to be made aware of possible risks to their health. They should ideally seek travel health advice at least six weeks before their trip, although it is never too late to seek advice before departure.
- Most travel health advice is provided in primary care. GPs and Practice Nurses should ask patients who were born in risk countries, or have ethnic links to them whether they will be travelling to visit friends or relatives in the future. This question should be asked opportunistically during general consultation or in specific clinics (such as new patient checks or childhood vaccination visits), and repeated at regular intervals. Patients so identified should be provided with information about their health risks during travel and invited to return for travel health advice in plenty of time before their trip.
- Access to travel health advice should be available for the whole of the UK population who need it and information on travel health risks for VFR travellers should be available in appropriate languages.
- In regions where there are a high number of malaria and enteric fever cases, public health and health promotion professionals should actively engage with community leaders to contribute to travel health programmes for at-risk ethnic groups, so that health messages can be communicated effectively and appropriately.
- Consideration should be given to making chemoprophylaxis for malaria more affordable to those travelling in family groups to at-risk areas, to reduce financial barriers to protecting all family members. Typhoid and hepatitis A vaccination is usually offered free for travellers in most GP practices. Other advice such as bite prevention and food and water hygiene advice is available from the open-access NaTHNaC website.
- Surveillance of travel-associated infections needs to be continually improved to better identify risk groups and assess the effectiveness of public health interventions.



Contents

Introduction

Typhoid and paratyphoid (enteric fever)

- Travel history and reason for travel
- Distribution of VFR cases in England, Wales, and Northern Ireland
- Ethnicity and country of birth
- Pre-travel health advice and typhoid vaccine

Malaria

- Travel history and reason for travel
- Distribution of VFR cases in England, Wales, and Northern Ireland
- Ethnicity and country of birth
- Malaria chemoprophylaxis

Hepatitis A

- Distribution of travel-associated cases in England, Wales, and Northern Ireland
- Hepatitis A vaccine

References

Relevant information resources

Acknowledgements

Introduction

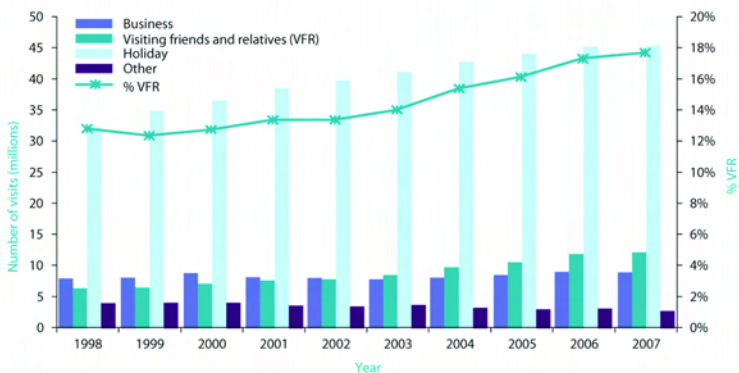
VFR travel is generally undertaken by first or subsequent generation migrants who have settled and are resident in the United Kingdom (UK) and who travel abroad to Visit Friends and Relatives, usually to the country of their birth or ethnic origin.

The most common reason for travel among UK residents has always been holidays. Up to 2002, the second most common reason was business travel, followed by VFR travel. In 2003, VFR travel overtook business travel for the first time and it has since maintained its status as the second most common reason for travel. In 2007, there were almost 70 million visits abroad made by UK residents, nearly 18% (12.2 million) were for VFR travel [Figure 1]. Between 1998 and 2007, VFR travel increased by 67%, compared to 35% for holiday travel and 13% for business travel.

The reason for travel affects where people go, and therefore their infectious disease risk. For example, the top ten destinations for business travellers in 2007 were all western European countries plus the United States (France and Germany being the top two); the top ten countries visited by holiday travellers were similarly mostly western European countries, as well as Greece, Portugal, and Turkey (Spain and France being the most popular); for VFR travellers the top ten countries visited are listed in table 1.

The majority of the total VFR travel in 2007 was to Europe (8,543,435, 70%), North America (924,407, 8%), and Australia and New Zealand (383,765, 3.1%). There were, however, a significant number of visits to regions such as the Indian subcontinent (872,744, 7%) (with India and Pakistan being in the top ten [Table 1], North Africa and the Middle East (412,174, 3.4%), southern Africa (183,854, 1.5%), and West Africa (133,596, 1.1%).

Figure 1: Visits abroad by UK residents by reason for travel: 1998 – 2007



VFR destinations tend to reflect the countries where travellers or their families were born, and are therefore related to migration patterns of people coming to the UK. Table 2 shows the top ten countries of birth for non-UK born British residents from the 2001 census.

Travel to countries with similar infectious disease epidemiology to the UK is unlikely to be more risky for VFR travel than other types of travel. However, VFR travel often involves travel to regions that have a higher risk of certain diseases. In addition, the risk of acquiring an infectious disease while abroad is also influenced by: location and type of accommodation used, environmental exposure to disease vectors, types of food eaten and the source of drinking water used, social mixing, length of stay, and any specific disease preventive measure taken (e.g. typhoid vaccination and malaria chemoprophylaxis). For example, compared to most business travellers, who may only be abroad for a few days and will probably stay in a tourist hotel with facilities that reduce potential exposure to pathogens, those who travel for VFR purposes often travel for longer periods of time (a month or more)^[1] and usually stay within the family or friend's home. They effectively become members of the local population while they are there, and are consequently exposed to similar infectious risks. They are also less likely to visit a travel health practitioner before their trip than those travelling for holidays or business^[2]. As the destination country is more familiar to them they may not recognise a need to seek travel health advice or to obtain vaccinations or chemoprophylaxis.

It is known that people travelling to visit friends and relatives in higher risk countries are disproportionately affected by some preventable infectious diseases, such as malaria, typhoid, paratyphoid, and hepatitis A. They may also be more at risk of a range of other travel associated infections, although there is less information available about risk groups for many of these diseases. The following sections summarise surveillance data available for malaria, typhoid and paratyphoid, and hepatitis A in England, Wales, and Northern Ireland as of 2007.

Table 1. Top ten countries of travel for VFR visits in 2007

Country of travel	VFR visits	VFR as % of total country visits
Irish Republic	1,623,317	38.6%
France	1,337,773	12.0%
Spain*	1,060,929	7.7%
Poland	958,035	61.7%
United States	646,926	16.5%
Germany	591,338	22.0%
Italy	490,370	13.7%
India	455,950	46.9%
Pakistan	330,381	80.7%
Netherlands	326,834	14.6%

Table 2. Top ten countries of birth of non-UK born British residents in 2001

Country of birth	Non-UK born British residents	% of total British population
India	466,416	0.82
Pakistan	320,767	0.56
Germany	262,276	0.46
Caribbean	254,740	0.45
USA	155,030	0.27
Bangladesh	154,201	0.27
South Africa	140,201	0.25
Kenya	129,356	0.23
Italy	107,002	0.19
Australia	106,404	0.19

* Spain includes Balearic and Canary islands
Source: International Passenger Survey 2007, Office for National Statistics

Source: BBC, Institute for Public Policy Research. Born abroad: An immigration map of Britain, 2005; data is taken from the 2001 Census.

Typhoid and paratyphoid (enteric fever)

Typhoid and paratyphoid are systemic infections of varying severity caused by *Salmonella* Typhi and Paratyphi. Enteric fever is characterised by a sustained fever, headache, stomach pains, altered bowel habit and cough, and can be life-threatening if not treated with antibiotics. They are both spread via the faecal-oral route and are preventable by good hygiene; there is a vaccine to protect against typhoid. Both infections are endemic in areas of the world where food and water hygiene is poor and/or where there is inadequate sanitation, usually in tropical and sub-tropical regions. The vast majority of cases that occur in the UK are associated with foreign travel to endemic areas.

Around 500 cases of enteric fever were reported by the Laboratory of Enteric Pathogens in 2007 (53% caused by *S. Typhi* and 47% by *S. Paratyphi*), this is 67% higher than in the late 1990s when around 300 cases were reported (Figure 2). Around two-thirds of cases in past years had information about travel recorded and of those, the majority of cases had acquired their illness in the Indian sub-continent^[1].

Travel history and reason for travel

Enhanced surveillance information was available for 396 confirmed cases of enteric fever reported in 2007 (214, 54% *S. Typhi*; 168, 42% *S. Paratyphi* A; 12, 3% *S. Paratyphi* B; two additional cases had infections with both *S. Typhi* and *S. Paratyphi* A). Travel history information was recorded for 381 cases of which 305 had travelled abroad from the UK, 27 were new entrants to the UK, 14 were foreign visitors to the UK, and 35 had no relevant travel history. Of the 305 travel-associated cases, 267 (88%) involved VFR travel [Figure 3].

Distribution of VFR cases in England, Wales, and Northern Ireland

The highest proportion of VFR cases of enteric fever were resident in London (108,

Figure 2: Laboratory reports of *Salmonella* Typhi and Paratyphi, England, Wales, and Northern Ireland: 1998 – 2007

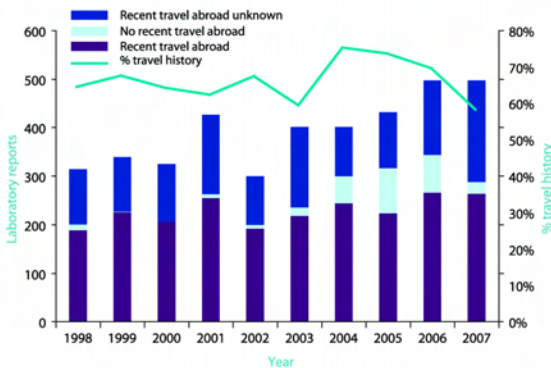
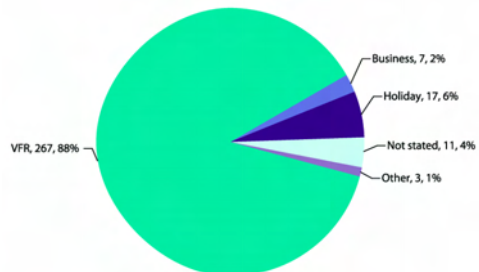


Figure 3: Travel-associated cases of enteric fever by reason for travel: 2007 (N=305)



40%), followed by the West Midlands (39, 15%), Yorkshire and Humberside (25, 9%), North West (23, 9%), and South East (23, 9%).

Ethnicity and country of birth

Where information was stated, 89% (215/241) of VFR cases were of Indian (110), Pakistani (69), or Bangladeshi (36) ethnicity [Table 3], with 41% (91/223) UK born and 59% (132/223) non-UK born. Most of the non-UK born cases were born in countries of their ethnic origin. VFR cases usually had a history of travel to countries of their ethnic origin or birth and this is also illustrated in table 3.

Pre-travel health advice and typhoid vaccine

Where information was stated, 43% (86/202) of VFR cases sought health advice before their trip, compared with 61% (11/18) of non-VFR travellers. Non-VFR travellers were 1.4 times more likely to seek health advice before travel [relative risk (RR) = 1.44, 95% confidence interval (CI): 0.96, 2.15; $X^2 = 1.61$ (Yates corrected), $p=0.20$], although this difference was not statistically significant due to the small number of non-VFR travellers. UK born VFR cases were also more likely to seek health advice before their trip than non-UK born VFR cases (RR=1.68, 95% CI: 1.19, 2.36; $X^2 = 7.87$, $p<0.01$). Only 48 VFR case reports (18% of the total) had information about whether they had received a typhoid vaccine within the three years before travel. Of these, 41 (28 *S. Paratyphi A* and 13 *S. Typhi*) had received vaccine and seven (four *S. Paratyphi A* and three *S. Typhi*) had not. Numbers were too small to make any inferences about vaccine efficacy.

Typhoid vaccine can only protect travellers against typhoid, not paratyphoid. Travellers to endemic areas should be vaccinated with typhoid vaccine as well as ensuring they practise good food and water hygiene. More information about preventing food and waterborne infections is available from the National Travel Health Network and Centre at <http://www.nathnac.org/pro/factsheets/food.htm>.

Table 3 :VFR cases of enteric fever by ethnicity and region of travel: 2007

Country of travel†	Ethnicity						Total
	Indian	Pakistani	Bangladeshi	Black African	Other	Not stated	
India	108	2		1	3	11	125
Pakistan	1	64			1	4	70
Bangladesh			34		1	6	41
Other ISC					3	1	4
Africa				8		1	9
Rest of world		1			9	3	13
Not stated	1	4	2				7
Total	110	69	36	9	17	26	269

Source: Enteric fever enhanced surveillance (HPA Centre for Infections: Travel and Migrant Health Section and Laboratory of Enteric Pathogens)

† Two cases travelled to more than one country so total is slightly higher than actual number of cases.

Malaria

Malaria is a preventable, life-threatening disease transmitted by the bite of the female *Anopheles* mosquito. It is a disease predominantly affecting Africa, South and Central America, Hispaniola, Asia, Oceania, and the Middle East. The heaviest burden is in Africa, where around 90% of the, approximately one million, deaths from malaria worldwide occur each year. There are five types of malaria that affect humans: *Plasmodium falciparum* (which is responsible for the vast majority of malaria deaths), *P. vivax*, *P. ovale*, *P. malariae*, and *P. knowlesi* (very rare in travellers; the first and only case reported in the UK was in 2006). Malaria is not endemic in the UK so all cases are presumed to have been acquired abroad unless there is evidence to the contrary. During the 1990's, on average nearly 2,000 cases a year were reported in the UK. Since 2003, the average number of cases has fallen to nearly 1,700 each year [Figure 4]. Malaria can be prevented by mosquito bite avoidance and by using chemoprophylaxis, for which a range of drugs are available to suit the individual traveller^[3].

The proportion of total malaria cases reported in the UK caused by *P. falciparum* (mainly acquired in Africa) has increased over time, with a simultaneous decrease in cases caused by *P. vivax* (mainly acquired in the Indian subcontinent), such that the former now constitutes the majority of malaria reported in the UK. This changing epidemiology may reflect a combination of changing epidemiology of malaria in destination countries (e.g. a decline in *P. vivax* malaria in India and Pakistan^[4]), as well as changes in migration and travel patterns.

Travel history and reason for travel

In 2007, 1,490 cases of malaria were diagnosed in England, Wales, and Northern Ireland. Reason for travel was available for 61% (912) of cases [Figure 5], and of those, 20 were UK citizens living abroad but visiting the UK, 95 were foreign visitors to the

Figure 4 : Cases of malaria and deaths reported in the United Kingdom, 1987 – 2007

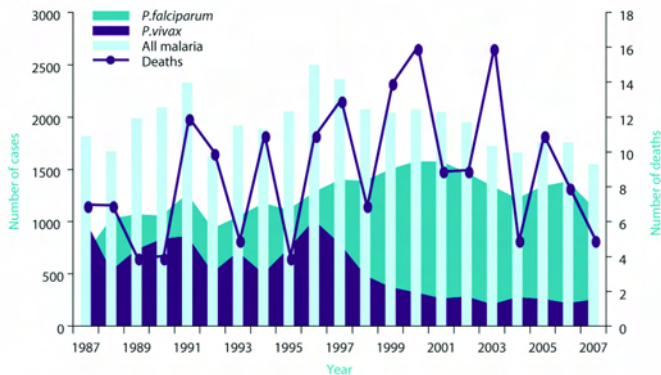
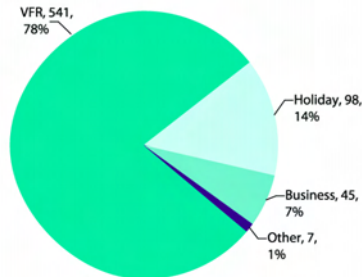


Figure 5: Travel-associated cases of malaria by reason for travel, England, Wales, and Northern Ireland: 2007 (N=691)



UK, 106 were new entrants, and 691 had travelled abroad from the UK. Of these, 541 (78%) involved VFR travel. The majority of VFR cases (454/541, 84%) were diagnosed with falciparum malaria (three with mixed infections).

Distribution of VFR cases in England, Wales, and Northern Ireland

The vast majority of VFR cases (385/541, 71%) were resident in London with other regions accounting for much lower proportions (between 3% and 6%). The North East, Wales, and Northern Ireland had the least number of cases (two, three, and two respectively). In most regions falciparum malaria accounted for the majority of reported VFR cases; however, similar numbers for both falciparum and vivax malaria were reported in the West Midlands (nine and eight respectively) and Yorkshire and Humberside (11 for both).

Ethnicity and country of birth

Where information was stated, 87% (472/541) of VFR cases were of Black African ethnicity or descent[‡] and 11% (59/541) were of Indian subcontinent (ISC) ethnicity or descent. Fourteen percent (59/423) of VFR cases were UK born and 86% (364/423) non-UK born; most of the non-UK born cases were born in countries or regions of their ethnic origin or descent. The majority of VFR cases travelled to countries or regions of their ethnic origin or descent [Table 4].

Malaria chemoprophylaxis

Where information was stated, only 9% (40/444) of VFR cases reported using malaria chemoprophylaxis recommended by the HPA Advisory Committee for Malaria Prevention for UK Travellers (ACMP) for their destination country^[3] with 91% (404/444) using no or inappropriate chemoprophylaxis. In comparison, there were 150 travel-associated cases that travelled for other reasons (i.e. not visiting friends and relatives), of these, where information was available, 42/123 (34%) reported taking malaria chemoprophylaxis recommended by the ACMP for their destination country and 81/123 (66%) did not.

Table 4. VFR cases of malaria by ethnicity and country of travel, England, Wales, and Northern Ireland: 2007

Country of travel	Ethnicity				Total
	Black African or African descent	Indian subcontinent (ISC) or ISC descent	Other	Not stated	
Nigeria	250	1	1	1	253
Ghana	107		2	1	110
Uganda	34				34
India		27			27
Pakistan		26			26
Sierra Leone	23		1		24
Côte d'Ivoire	15		1		16
Kenya	7	2			9
The Gambia	3	1	1		5
Cameroon	4				4
Other Africa	28		1		29
Other non Africa					3
Not stated	1	2	1		1
Total	472	59	8	2	541

[‡]African or ISC descent is presumed where ethnicity is not stated on the surveillance form but other information on the form indicates the patient's ethnicity.
Source: Health Protection Agency, Malaria Reference Laboratory.

Despite the fact that malaria still occurred in those who reported taking malaria chemoprophylaxis recommended by the ACMP, non-VFR cases were almost four times more likely to report having taken an appropriate chemoprophylactic drug than VFR cases. [RR = 3.79, 95% CI: 2.58, 5.57; $\chi^2 = 47.19$ (corrected), $p < 0.01$].

No chemoprophylaxis regimen is 100% effective, especially if taken incorrectly; a combination of measures is advised. To effectively prevent malaria, the ABCD of malaria prevention should be followed: Awareness of risk; mosquito Bite prevention; Chemoprophylaxis (taken correctly); prompt Diagnosis and treatment^[3]. More information on how to avoid mosquito bites is available from the National Travel Health Network and Centre at <http://www.nathnac.org/pro/factsheets/iba.htm>.

Hepatitis A

Hepatitis A virus infection causes a range of illness from mild, non-specific nausea and vomiting through to hepatitis (liver inflammation, jaundice) and more rarely, liver failure. Severity of illness generally increases with age. Hepatitis A is transmitted via the faecal-oral route and is preventable by vaccination and through good hygiene. It occurs worldwide but is most prevalent in low income countries. Cases occur in the UK but are also acquired through travel to endemic areas.

Travel history

The total number of hepatitis A laboratory reports in England, Wales, and Northern Ireland has decreased in recent years [Figure 6]; travel-associated cases have also decreased in line with the total. In 1998, 131 (11% of the total) cases of hepatitis A were reported to be associated with travel abroad compared to 21 (5%) in 2006 and 15 (4%) in 2007. It is not evident from these data, however, whether this is a true decrease, as travel history reporting for hepatitis A is incomplete, although it did

Figure 6: Laboratory reports of hepatitis A, England, Wales, and Northern Ireland: 1998 – 2007



improve slightly in 2006 and 2007. Reason for travel, ethnicity, and country of birth are not routinely collected through the national laboratory reporting system. Countries of travel for hepatitis A cases reported to national surveillance in 2006 and 2007 combined are listed in table 5.

The Indian subcontinent has traditionally been the region of travel most reported for travel-associated hepatitis A^[5], and in 2006 and 2007 Pakistan was the most reported country of travel. Seventy-nine percent of visits by UK residents to Pakistan in 2006 and 2007 were for VFR travel^[6]; it is therefore likely that a significant proportion of hepatitis A cases acquired in Pakistan, as well as other countries in the Indian subcontinent, are as a result of VFR travel. Previous studies showed that higher rates of hepatitis A in England and Wales occurred in people of south Asian (Indian subcontinent) ethnicity and that travelling ‘home’ to the Indian subcontinent to visit friends and relatives was a significant risk factor^[7].

Distribution of travel-associated cases in England, Wales, and Northern Ireland

Most travel-associated cases of hepatitis A reported in 2006 and 2007 were from the North of England: Yorkshire and Humberside (nine cases), West Midlands (nine), South West (eight), East (five), North West (four), and South East (one).

Hepatitis A vaccine

There are no national data available for the uptake of hepatitis A vaccine in travellers. Hepatitis A vaccine, together with practising good food and water hygiene, is the best way for travellers to endemic countries to prevent infection with the hepatitis A virus. More information about preventing food and waterborne infections is available from the National Travel Health Network and Centre at <http://www.nathnac.org/pro/factsheets/food.htm>.

Table 5: Countries of travel for travel-associated cases of hepatitis A in 2006 and 2007

Country of travel	Laboratory reports of hepatitis A
Pakistan	17
Egypt	5
Thailand	3
Bangladesh	3
India	1
Nigeria	1
Philippines	1
Singapore	1
Spain	1
Sudan	1
Turkey	1
Uzbekistan	1
Total	36



References

1. Health Protection Agency. *Foreign travel associated illness, England, Wales, and Northern Ireland: 2007 report*. London: Health Protection Agency; 2007. Available online at: http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1204186178825
2. Health Protection Agency. *Pilot of enhanced surveillance of enteric fever in England, Wales, and Northern Ireland, 1 May 2006 to 30 April 2007*. London; HPA: 2008. Available online at: http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1206575041900
3. Chiodini P, Hill D, Laloo D, Lea G, Walker E, Whitty C, Bannister B. *Guidelines for malaria prevention in travellers from the United Kingdom*. London: Health Protection Agency; 2007. Available online at: http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733823080?p=1191942128258
4. Smith AD, Bradley DJ, Smith V, Blaze M, Behrens RH, Chiodini PL, Whitty CJM. Imported malaria and high risk groups: observational study using UK surveillance data 1987 – 2006. *BMJ* 2008; **337**:a120.
5. Health Protection Agency. *Illness in England, Wales, and Northern Ireland associated with foreign travel: a baseline report to 2002*. London: HPA; 2004. Available online at: http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1203496904956
6. Office for National Statistics. *International Passenger Survey 2006 and 2007*. Available at <http://www.statistics.gov.uk>
7. Gungabissoon U, Andrews N, Crowcroft NS. Hepatitis A virus infection in people of South Asian origin in England and Wales: analysis of laboratory reports between 1992 and 2004. *Epidemiol Infect* 2006. Published online by Cambridge University Press doi:10.1017/S0950268806007242.

Relevant information resources

Information about prevention of all travel-associated illnesses is available from the National Travel Health Network and Centre (NaTHNaC) at <http://www.nathnac.org/>. Advice about specific countries can be found on the NaTHNaC Country Information Pages at http://www.nathnac.org/ds/map_world.aspx.

Disease specific information is available from:

- Typhoid and paratyphoid: <http://www.nathnac.org/pro/factsheets/typhoid.htm> and <http://www.hpa.org.uk/typhoid>
- Malaria: ACMP Guidelines^[3] and <http://www.hpa.org.uk/malaria>
- Hepatitis A: http://www.nathnac.org/pro/factsheets/hep_a.htm and <http://www.hpa.org.uk/hepatitisA>

Acknowledgements

This report was prepared by Jo Lawrence and Jane Jones of the Travel and Migrant Health Section (TMHS) of the Health Protection Agency (HPA) Centre for Infections (Cfi). Sincere thanks go to the following contributors:

HPA Malaria Reference Laboratory (MRL) and all those involved in malaria surveillance. Laboratory of Enteric Pathogens (LEP) and all those involved in enteric fever enhanced surveillance. Office for National Statistics for providing data from the International Passenger Survey.

Reviewers:

Dr Ruth Gilbert (TMHS)

Claire Wong (NaTHNaC)

Professor David Hill (NaTHNaC)

Professor Peter Chiodini (MRL)

Valerie Smith (MRL)

Professor Chris Whitty (London School of Hygiene and Tropical Medicine)

Professor John Threlfall (LEP)

Dr Bob Adak (Gastrointestinal, Emerging and Zoonotic Infections, Cfi)

Dr Koye Balogun (Immunisation, Cfi)

IGRATION
AMBODI
DEC 2005
JAN 2006
2010
SECTION

OR
NO
TION
JAN 2006
FEB 2006

1
Hour
Renat
34B34
CHI
VISA
ADM
UNT
SIGN
34B3

1A1A11A1A11A1A11
MAR 2006

22
ENTR
VISAS

Health Protection Agency
Travel and Migrant Health Section
Centre for Infections
61 Colindale Avenue
London NW9 5EQ
United Kingdom

Tel: +44(0)20 8200 6868
Fax: +44(0)20 8200 7868
Email: tmhs@hpa.org.uk
Website: www.hpa.org.uk

NaTHNaC
National Travel Health Network and Centre



December 2008
© Health Protection Agency
This leaflet is printed on recycled
content paper.