CURRENT NOTES

Increasing notifications of mumps

49/0401 HPS is currently restating the advice to anyone aged between 20 and 35 to ensure that they are fully vaccinated against the mumps virus. This follows a recent three-fold rise in notifications in the first three weeks of 2015. Most of those affected are young adults in Glasgow, Lanarkshire and Edinburgh with a particular outbreak of familiar pattern in students returning to studies at university.

The mumps virus is spread through respiratory transmission from infected individuals. The incubation period ranges from 12-25 days, and is usually about 18 days. A mumps case is infectious from about six-seven days before onset of parotitis until nine days after, although cases which show no clinical symptoms can also be communicable.

Clinical features include fever, headache, swelling of one or both cheeks or sides of the jaw (parotitis) and swollen glands. The fever usually lasts for one to six days and the parotitis for up to 10 days, or more. Mumps can have serious complications, including aseptic meningitis (4-6% cases), encephalitis (1 in 1000 cases), inflammation of the testes (orchitis), pancreatitis, oophoritis and permanent deafness. Neurological involvement occurs in 10-20% of cases and may precede or follow parotitis, and can also occur in its absence. Orchitis is the most common complication of mumps in adult males (four out of ten cases). Fulminant encephalitis is rare, but a potentially fatal complication of mumps.

Ebola in West Africa: 12 months on

49/0402 One year after the first Ebola cases started to surface in Guinea, the World Health Organization has published a series of 14 papers that take an in-depth look at West Africa’s first epidemic of Ebola virus disease. The papers explore reasons why the disease evaded detection for several months and the factors, many specific to West Africa, that fuelled its subsequent spread.

The most extensive papers trace events in each of the three most severely affected countries - Guinea, Liberia and Sierra Leone. These countries shared many common challenges, shaped by geography, culture, and poverty, but each also faced, addressed and sometimes solved some unique problems.

Key events are set out chronologically, starting with the child who is believed to be the index case of this epidemic through to the Director-General’s commitment to steadfastly support affected countries until they reach zero cases.
The report also looks back at WHO’s response over the past 12 months, including the 9 August declaration of an international health emergency. It documents the many challenges faced by countries and the international community in dealing with the largest, longest, most severe, and most complex Ebola outbreak in history.

Other papers provide insight into:

- how the fast-track development of Ebola vaccines, treatments and rapid diagnostic tests is progressing, with no compromise of safety and efficacy standards;
- how Senegal, Nigeria and likely Mali managed to contain imported cases and bring their own outbreaks under control;
- the state of worldwide vigilance and preparedness, especially in countries targeted by WHO as being at greatest risk of an imported case.

The report also looks ahead, speculating (on the basis of the year’s experience) as to what critical strategies and interventions would give countries and their partners the best chance of bringing such outbreaks under control. [Source: WHO Media Note, 15 January 2015. http://www.who.int/mediacentre/news/notes/2015/ebola-one-year-on/en/]

In a statement issued on 25 January, the WHO Director General has also noted that, while cases were clearly declining in all three countries, continued international effort would be needed to reach the collective goal of ‘zero cases’. [Source: DG Speech, 25 January 2015. http://www.who.int/dg/speeches/2015/executive-board-ebola/en/]

**RCOG guideline on chickenpox in pregnancy**

**49/0403** Updated guidelines on managing chickenpox in pregnancy were published by the Royal College of Obstetricians and Gynaecologists (RCOG) on 21 January.

Chickenpox, or primary varicella-zoster virus (VZV), is a common childhood disease that usually causes a mild infection. Many women have antibodies to protect themselves against the virus after contracting the virus as a child, however, it is estimated that chickenpox complicates three in every 1000 pregnancies.


The guidelines state that when women book for antenatal care they should be asked about previous chickenpox/shingles infection. Women who have not had chickenpox should be advised to avoid contact with chickenpox and shingles during pregnancy and to inform healthcare workers of a potential exposure without delay.

Moreover, pregnant women who develop the rash of chickenpox should immediately contact their doctor. The guidelines also state that women who develop chickenpox in pregnancy should be referred to a fetal medicine specialist and that a neonatologist should be informed of the birth.

The timing and mode of delivery of the pregnant woman with chickenpox must be individualised and women with chickenpox should breastfeed if they wish to and are well enough to do so. [Source: RCOG News Release, 21 January 2015. https://www.rcog.org.uk/en/news/rcog-release-revised-guideline-on-chickenpox-in-pregnancy-published/]
The RCOG guidelines complements the following health protection resources for varicella zoster (chickenpox):


RCOG/BASHH guideline on genital herpes in pregnancy

49/0404 Managing the care of women with genital herpes in pregnancy was explored in recent guidelines and patient information published jointly by the Royal College of Obstetricians and Gynaecologists (RCOG) and the British Association for Sexual Health and HIV (BASHH). The consensus guideline (available at https://www.rcog.org.uk/en/guidelines-research-services/guidelines/genital-herpes/) replaces previous separate guidelines and covers the inpatient and outpatient management of genital herpes in the antenatal, intrapartum and postnatal periods. The new patient information is based on the guideline and provides information for women and their families.

Genital herpes is a common infection caused by the herpes simplex virus (HSV). There are two types of HSV, type 1 and type 2. Both types can cause infection in the genital and anal area. Approximately 50% of neonatal herpes is due to type 1 and 50% due to type 2.

Neonatal herpes occurs when a baby catches the herpes virus at birth. It can be serious, but is very rare in the UK (1 to 2 out of every 100,000 newborn babies). The baby will be cared for in a neonatal unit with a specialist team of doctors.

The risk of transmission is greatest, however, when a woman acquires a new infection (primary genital herpes) in the third trimester and particularly within six weeks of delivery, as the baby is unlikely to have protective antibodies.

The guidelines cover management of women with herpes in the first or second trimester and mode of delivery for women who have a first episode in the third trimester. For women with recurrent genital herpes where the risk of neonatal herpes is very low, the guidelines state that vaginal delivery should be anticipated if there is no other reason to have a caesarean section.

The new information also provides advice on treatment for genital herpes such as antiviral tablets which are safe to take in pregnancy and while breastfeeding. To help prevent postnatal transmission of HSV, advice should be given around practising careful hand hygiene. [Source: RCOG News Release, 17 October 2014. https://www.rcog.org.uk/en/news/joint-rcogbashh-release-managing-genital-herpes-in-pregnancy--new-information-published/]

EFSA Study: fish consumption - benefits versus risk

49/0405 Limiting consumption of fish species with a high methylmercury content is the most effective way to achieve the health benefits of fish whilst minimising the risks posed by excessive exposure to methylmercury. This is the main conclusion of a statement published by the European Food Safety Authority (EFSA) on the risks and benefits of seafood. EFSA is recommending that individual member states consider their national patterns of fish consumption and assess the risk of different population groups exceeding safe levels of methylmercury while obtaining the health benefits of fish. This particularly applies to countries where fish/seafood species with a high mercury content - such as swordfish, pike, tuna and hake - are consumed regularly.
Because of difficulties in generalising across the continent - there are large variations in the proportion of populations consuming fish, in the fish/seafood species consumed and in the average amount of fish consumed by different age groups across Europe - EFSA has created scenarios to give snapshots of the situation in different countries.

These show that in some countries certain population groups - notably toddlers and children aged three to ten - reached the safety threshold or tolerable weekly intake (TWI) for methylmercury before they reached intake levels that brought nutritional benefits. EFSA therefore concludes that:

- for toddlers, children and women of childbearing age, the benefits of eating fish should be met by increasing the consumption of species low in methylmercury;
- to protect the fetus against the adverse neurodevelopmental effects of methylmercury, women of childbearing age should not exceed the TWI;
- as the brain is developing also after birth, toddlers and children regularly exposed to methylmercury above the TWI should also be considered at risk from the neurotoxic effects of methylmercury.

The statement by EFSA's Scientific Committee (accessible at [http://www.efsa.europa.eu/en/efsajournal/pub/3982.htm](http://www.efsa.europa.eu/en/efsajournal/pub/3982.htm)) addresses the benefits of fish/seafood consumption, using n-3 long-chain polyunsaturated fatty acids (LCPUFA) as an example of a beneficial substance, compared to the risks of methylmercury in fish/seafood, in relation to the number of fish servings per week. It is based on two earlier EFSA scientific opinions which looked respectively at the risks from mercury and methylmercury in food, and the health benefits of fish/seafood. The first opinion established a TWI for methylmercury of 1.3 mg per kg of body weight; the second recommended weekly intakes of fish of between one to two servings and three to four servings in order to realise health benefits such as improved neurodevelopment in children and reduced risk of coronary heart disease in adults respectively.

Scenarios were created for different population groups such as toddlers, adolescents and adults. These were based on the type of fish/seafood species and serving sizes typically consumed by these groups in various Member States, and the resulting exposure to methylmercury and intake of LCPUFA. It was then estimated how many servings of fish/seafood per week a given population group would need to reach the TWI for methylmercury and the dietary reference value (DRV) for LCPUFA. [Source: EFSA Press Release, 22 January 2015. [http://www.efsa.europa.eu/en/press/news/150122.htm](http://www.efsa.europa.eu/en/press/news/150122.htm)]

The UK Food Standards Agency (FSA) has responded by reiterating its advice on this issue for UK consumers, and is reminding people of the importance of following the recommendations in the light of EFSA's review. For further details, see FSA news release [http://www.food.gov.uk/news-updates/news/2015/13461/eating-fish-efsa](http://www.food.gov.uk/news-updates/news/2015/13461/eating-fish-efsa).

**EFSA re-evaluation of bisphenol A exposures**

**49/0406** The European Food Safety Authority (EFSA) has published a major re-evaluation of bisphenol A (BPA) exposure and toxicity. This assessment concludes that BPA poses no health risk to consumers of any age group (including unborn children, infants and adolescents) at current exposure levels. Exposure from diet or from a combination of sources (diet, dust, cosmetics and thermal paper) is considerably under the safe level (the ‘tolerable daily intake’ or TDI).

Although new data and refined methodologies have led EFSA’s experts to considerably reduce the safe level of BPA from 50 micrograms per kilogram of body weight per day (µg/kg of bw/ day) to four µg/kg of bw/day, the highest estimates for dietary exposure and for exposure from a combination of sources (called ‘aggregated exposure’ in EFSA’s opinion) are three to five times lower than the new TDI.
Uncertainties surrounding potential health effects of BPA on the mammary gland, reproductive, metabolic, neurobehavioural and immune systems have been quantified and factored into the calculation of the TDI. In addition, the TDI is temporary pending the outcome of a long-term study in rats, aimed at reducing these uncertainties.

BPA is a chemical compound used in the manufacture of food contact materials such as re-usable plastic tableware and can coatings (mainly protective linings). Another widespread use of BPA is in thermal paper commonly used in till/cash register receipts. Residues of BPA can migrate into food and beverages and be ingested by the consumer; BPA from other sources including thermal paper, cosmetics and dust can be absorbed through the skin and by inhalation. EFSA's re-evaluation was prompted by the publication in recent years of a very high number of new research studies on the subject. [Source: EFSA News Release, 21 January 2015. http://www.efsa.europa.eu/en/press/news/150121.htm]

**Notification table**

49/0407 Readers will note that this issue of the Weekly Report does not contain the customary Notification Table section. Owing to a change in the notification reporting procedure, the publication schedule of these tables is currently under review. We hope to resolve this issue as soon as possible.
Travel health: HPS report on laboratory-confirmed travel-related infections reported in Scotland during 2014

Prepared by: James Munro, Chris Redman, Fiona Genasi & Susan Brownlie

Introduction

The risk of infection in international travellers varies according to destination and mode of travel, among other factors.\(^1,2\) The complex interaction of pathogenicity, immunity, behaviour and the environment may combine to expose the traveller to infections not encountered at home. However, travel-related infections are not limited to the exotic: travellers may encounter infections also found at home, where their risk of exposure is different.

The recent HPS report on travel-related infection in patients presenting to the Brownlee Centre in Glasgow showed febrile illness and acute diarrhoea were the most commonly reported conditions.\(^3\) A previous study observed that Scottish travellers to developing countries were most frequently affected by food and waterborne gastrointestinal infections and by respiratory infections.\(^4\) Studies of other groups of travellers have shown skin disorders to be commonly reported.\(^5,6\)

Some febrile illnesses in travellers, while presenting a distressing experience for the individual, are likely to be self-limiting. Others have the capacity to cause serious illness or death and some are very likely to do so.\(^7,8\) Further, infections acquired during travel may have the capacity for transmission in transit or when the traveller arrives home or at another destination. Effective surveillance of travel-related infection informs provision of evidence-based health advice to the traveller\(^9\) and also contributes to protection of the domestic population from imported pathogens. In addition to disease seen in those returning to Scotland from travel abroad, infections are also seen in foreign travellers arriving here, as exemplified by a proportion of imported malaria cases diagnosed in Scotland.\(^10\)

Concerns about the prospect of imported infection have been significant in Scotland throughout 2014. In July and August, the staging of the Commonwealth Games in Glasgow necessitated an enhanced surveillance effort by HPS in conjunction with NHS boards, the European Centre for Disease Prevention and Control and Public Health England. From the early part of 2014 there was growing international unease about the intensity and scale of the Ebola virus disease (EVD) outbreak in West Africa, which led to increased activity aimed at protecting the public from EVD in the event of its importation into Scotland\(^11\) as well as activity aimed at supporting the response in West Africa.

Travel abroad 2000 - 2013

Travel from the UK

Estimates of travel abroad provided by the United Kingdom Office for National Statistics revealed that, after a long-sustained period of increase in international travel from the UK, there was a fall in 2008 from 69.0 million to 58.6 million journeys (Figure 1).\(^12\) Travel declined to 55.6 million journeys in 2010,\(^13\) but this has risen by 4% to 58.5 million in 2013.\(^14\) Travel to North America from the UK has followed a downward trend between 2000 and 2013, while for Asia the trend has been upwards since 2009. There has been a decrease in travel to Africa since 2008 while travel to Central & South America & the Caribbean has been generally constant.

Of the 58.5 million foreign visits by UK residents in 2013, the majority (78%) were to Europe, with another 6%, 5%, 4% and 2% of journeys to North America, Asia, Africa, and Central & South America & Caribbean, respectively. Travel to Australia and New Zealand accounted for 1% of foreign visits. For the same period, holiday travel, accounting for 64% of foreign visits, fell by less than 1%, as did business travel. Travel involving visits to family and friends (VFR travel) increased by 2%.
FIGURE 1: Travellers from UK 2000-2013 (Source: Office for National Statistics, Travel Trends 2013)

Travel from Scotland

In 2013, there were approximately 3.6 million journeys abroad from Scotland, as in the previous year, representing 6% of total journeys from the UK. Europe (78%) was the most visited destination followed by North America (7%), Asia (4%), Africa (3%), Central & South America & the Caribbean (2%) and Australia and New Zealand (1%).

FIGURE 2: Travellers from Scotland 2000-2013 (Source: Office for National Statistics, Travel Trends 2013)
Surveillance of travel-related infections

Method
Results of positive laboratory tests for a wide variety of pathogens are received at Health Protection Scotland by electronic transfer through ECOSS.\(^1\) Clinical diagnoses are only received by ECOSS if they have been recorded with the laboratory result. Prior to 2012, in consultation with stakeholders, the HPS Travel & International Health Team reviewed and revised the travel-associated organisms for which data were to be collected. Criteria for episode definition were also reviewed for each organism and applied to the ECOSS data. The data for 2014 for selected organisms were collated, episode criteria checked and applied and duplicates removed.

It is assumed that infections such as schistosomiasis and vector-borne viruses are always travel-related when they are identified in Scotland and are therefore classified as imported. Infections that can also be transmitted in the UK are only classified as imported when the appropriate information is recorded in the ECOSS report.

*Escherichia coli* O157 and malaria figures for 2014 will be reported later this year.

Results
The number of reports for the various organisms was broadly similar to that published in 2013. All reports are subject to review and revision as further information becomes available.

Gastrointestinal protozoa
In 2014, there were 167 episodes of *Giardia* in 2014, 36 (22%) of which were imported. This total included 121 (72%) *Giardia lamblia*, 19 (11%) G. duodenalis, 8 (5%) *G. intestinalis* and 19 (11%) *Giardia* sp. In 2013 there were also 167 episodes, although in different proportions by species compared to 2014, of which 43 (26%) were reported as imported. In 2014, 431 reported episodes of *Cryptosporidium* included 31 (7%) which were imported. Of these, 354 (82%) were unspeciated, 46 (11%) were *Cryptosporidium parvum*, 29 (7%) were *C. hominis* and 2 (<1%) were *C. meleagridis*. The total for 2013 was also 431 in different proportions by species compared to 2014 and of which 24 (6%) were imported. In 2014, 11 episodes of *Entamoeba histolytica* were reported in 2014, all of which were imported. In 2013, there were three episodes of *E. histolytica*, again all imported.

Enteric fever
In 2014, 17 episodes of enteric fever were reported to HPS in 2014 compared to 2013 when there were 14 episodes. The 2014 total comprised 10 (59%) *Salmonella* Paratyphi A, and seven (41%) *S. Typhi*. All of the *S. Paratyphi A* were reported as imported, as were three (43%) episodes of *S. Typhi*. In 2013 there were 10 *S. Typhi*, four *S. Paratyphi A* and one *S. Paratyphi B*, all of which were imported.

*Rickettsia*
In 2014, there were six episodes of *Rickettsia*, all of which were imported, compared to five in 2013, all imported.

*Shigella*
In 2014, 90 *Shigella* episodes were reported to HPS in 2014, compared to 85 episodes in 2013. The species most frequently reported in 2014 was *Shigella sonnei* (47, 52%). There were 34 (38%) episodes of *S. flexneri*, 4 (4%) *S. boydii* and 1 (<1%) *S. dysenteriae*. Four episodes (4%) of *Shigella* were unspeciated. In 2014, 24% (22) of *Shigella* episodes were imported in 2014 compared to 34% (29) in 2013.
Vibrio

Five Vibrio episodes were reported in 2014, the same total as in 2013. Of these, four (80%) were V. cholerae of which three were typed as non-01/0139 and one was untyped. There was one (20%) episode of V. parahaemolyticus. All Vibrio episodes in 2014 were imported.

Hepatitis A and Hepatitis E

Thirty-two episodes of hepatitis A and 157 of hepatitis E were submitted in 2014, of which 9% (3) and 3% (5) respectively were imported. In 2013 there were 22 episodes of hepatitis A and 95 of hepatitis E, of which 1 (5%) and 3 (3%) respectively were imported.

Vector-borne viruses

All vector-borne viruses reported in Scotland were imported. There were 28 episodes of dengue virus in 2014, compared 32 in 2013. The number of reports of chikungunya virus rose to five in 2014, with two having been reported in 2013. There were three episodes of West Nile virus in 2014, the first time this virus has been identified in Scotland.

Schistosomiasis

In 2014, 203 episodes of Schistosoma infection were recorded. All but one of these were unspeciated, having been detected by serological testing. A single Schistosoma mansoni was speciated. In 2013, there were 159 episodes of Schistosoma infection, of which two were speciated - one S. haematobium and one S. mansoni.

Viral haemorrhagic fever

There was one episode of Ebola virus in 2014, imported from West Africa.

Discussion

This report only considers those infections where a specimen was tested or examined. Taken in isolation from other recording systems, ECOSS data cannot be relied on to accurately estimate levels of disease in the travelling population.

Health Protection Scotland carried out extensive global and domestic surveillance in relation to the Commonwealth Games throughout the summer of 2014. Information on outbreaks from across the Commonwealth was collated and risk-assessed by HPS before and during the Games. There was no evidence of changes in importation of infection due to the event.

Organisms causing traveller’s diarrhoea (TD) are frequently reported here, as elsewhere. Escherichia coli, Salmonella, Shigella, Giardia and Entamoeba histolytica are all well-recognised causes of traveller’s diarrhoea with the latter two organisms more often seen in long-term travellers. TD is often self-limiting, although some diarrhoeagenic organisms with global distribution such as Vibrio cholerae, E. coli O157 and E. histolytica can produce life-threatening disease. Gastrointestinal infectious disease is often difficult to prevent, given the causative organisms’ widespread environmental and geographic distribution. Varying proportions of gastrointestinal infections were reported as being imported in 2014, but not all requests for testing are accompanied by patient information including travel history.

Gastrointestinal infections are acquired at home as well as abroad, but some such as Vibrio and enteric fever are strongly associated with travel. Giardia and Cryptosporidium are commonly reported in Scotland and elsewhere in the UK, but only a small proportion are reported as being related to international travel, although school holiday activities in the UK are often listed among the biologically plausible routes of infection with Cryptosporidium. HPS has no indication of how many short-lived gastrointestinal infections are acquired abroad but resolve before arrival in Scotland.
For some pathogens e.g. flaviviruses,\textsuperscript{18,19,20} a positive result may arise from vaccination or cross-reaction. Clinical history is often omitted from laboratory reports and travel history is also frequently absent. It is tempting to assume that positive serology is indicative of illness or that a test must have been precipitated by specific clinical presentation, but laboratory reports alone do not identify illness and can only be interpreted fully in the context of clinical history. Occasionally, individuals will test positive for more than one pathogen. In all circumstances, surveillance can benefit from effective communication between epidemiologists and physicians using clinical reporting systems such as GeoSentinel.\textsuperscript{21}

The establishment of vector-borne imported human disease is of current interest and concern in Europe\textsuperscript{22} although in the United Kingdom ecological constraints limit the establishment and spread of vectors.\textsuperscript{23,24,25} Dengue virus is, again, the most frequently-reported vector-borne virus in Scotland. Imported cases of dengue fever in travellers returning to the EU may be the origin of sporadic domestic outbreaks in areas where the mosquito vector (\textit{Aedes} sp) is present.\textsuperscript{26} Cases of autochthonous dengue have been reported in Provence in 2010,\textsuperscript{27} and 2013.\textsuperscript{28} Chikungunya virus has been of significance to European travellers in 2014. A major outbreak has occurred in the Caribbean and the Americas, with 170,000 cases in the French islands of the Caribbean to the end of the year.\textsuperscript{29} From 1 May to 30 November 2014, 1492 cases compatible with dengue or chikungunya were reported in metropolitan France. Of those confirmed, there were 443 imported and 11 autochthonous chikungunya, 163 imported and four autochthonous dengue and six imported co-infections.\textsuperscript{30} While there have been five reports of Chikungunya virus in Scotland in 2014, limited travel history means that most of these reports cannot be linked to recognised outbreak areas.

West Nile virus was reported in Scotland for the first time in 2014, with two reports from travellers who had been in countries outside Europe where the disease is endemic. However, West Nile virus is well established in southern, central and eastern Europe and occurs annually in some areas of Europe that are densely populated and popular with tourists, notably the Po Valley of northern Italy. Birds are the natural hosts of WNV and, while West Nile fever can be of serious clinical significance, infected humans do not pose a public health risk as viraemia is short lived\textsuperscript{31} and does not rise to a level necessary for transmission via the mosquito vector.\textsuperscript{32}

Clinical differentiation of the most common vector-borne viruses is often challenging, given the shared picture of fever, nausea, joint pain and rash and the frequently overlapping geographic range of infections and vectors. In severe cases, dengue and yellow fever meet the criteria for viral haemorrhagic fever (VHF). Consequently, it is essential that they can be distinguished from other VHFs such as Ebola virus disease, which are not vector-borne and which carry a dangerous risk of spread. Indeed, the importance of effective surveillance for EVD and other viral haemorrhagic fevers has become even more acute during the production of this report, with the first case of imported EVD in the United Kingdom in a Scottish nurse arriving home from Sierra Leone.\textsuperscript{33}

Travellers continue to be at risk of exposure Schistosoma in endemic areas. Visits to sub-Saharan Africa, especially Malawi, by young people from Scotland for school trips or voluntary activities are now commonplace, and may increase the risk of schistosomiasis.\textsuperscript{34} Appropriate health guidance should be followed by all school staff planning travel abroad\textsuperscript{35} and thus far only a very small proportion of schistosomiasis diagnosed in Scotland has been related to school activities. Nearly all cases of schistosomiasis in Scottish travellers are diagnosed on serological screening as the infection remains asymptomatic for months or years in the majority of those infected. Worm burdens are usually low in travellers with infrequent exposure and eggs rarely seen in stools or urine. Diagnosis of infection by microscopy is unlikely, hence the infrequent speciation of infection indentified in Scotland. Serological tests such as those available at the Scottish Parasite Diagnostic and Reference Laboratory (SPDRL) constitute the basis of diagnosis.\textsuperscript{36} In 2014, \textit{Schistosoma}
haematobium was identified in French and German holidaymakers in Corsica, where the parasite was previously unrecorded. This unusual occurrence is a reminder that unexpected infections may occur in travellers returning from destinations not commonly associated with health risks.

**Conclusion**

Up-to-date, expert advice on travel health and country-by-country disease risks is available to healthcare professionals on TRAVAX (http://www.travax.nhs.uk). Travellers are strongly advised to consult the fitfortravel website (http://www.fitfortravel.nhs.uk) in advance of their travel for information on how to stay healthy abroad. The website includes country-specific advice on recommended vaccines and antimalarial chemoprophylaxis, and details on safe food and water, accident avoidance, sun exposure and insect bites. TRAVAX recommends that travellers consult a GP, practice nurse or travel health clinic at least six weeks before travel.

Food and water hygiene remain the most effective methods for reducing the risk of diarrhoea. Some other food and waterborne diseases i.e. hepatitis A, typhoid and poliomyelitis are also preventable through vaccination. As in previous years, organisms associated with traveller’s diarrhoea were most frequently reported. Vector-borne infections were less frequently reported but continue to highlight the need for bite avoidance and vaccination where possible and appropriate.

Many travel-related infections will manifest either during or very soon after travel, but some may present months or years later, depending on incubation period. Any traveller becoming unwell, even months after arrival in Scotland, should seek medical advice and report their travel history to their health care provider. It is recommended that anyone who may have been exposed to Schistosoma cercariae during travel is tested on their return, even if asymptomatic. HPS would encourage all clinicians requesting laboratory testing to routinely take a travel history to their return, even if asymptomatic.

Respiratory infection is outside the scope of this report but is a matter of continuing concern and uncertainty, given the potential for global occurrence of highly pathogenic avian influenza viruses and the persistence of Middle East respiratory syndrome coronavirus (MERS-CoV) in the Arabian Peninsula. Media interest in MERS-CoV has declined in recent months but merits ongoing vigilance, given the substantial numbers of pilgrims travelling to the Arabian peninsula for pilgrimage, business and leisure. HPS will continue to provide information to travellers via health professionals and the fitfortravel website.
### TABLE 1: Travel-related pathogens reported to HPS in 2014

<table>
<thead>
<tr>
<th>Organism</th>
<th>2014</th>
<th>% Change since 2013</th>
<th>2013</th>
<th>% Importation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong>*</td>
<td>90</td>
<td>22</td>
<td>85</td>
<td>29</td>
</tr>
<tr>
<td><strong>Shigella</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shigella boydii</td>
<td>4</td>
<td>2</td>
<td>100%</td>
<td>2</td>
</tr>
<tr>
<td>Shigella dysenteriae</td>
<td>1</td>
<td>0</td>
<td>0%</td>
<td>NA</td>
</tr>
<tr>
<td>Shigella flexneri</td>
<td>34</td>
<td>7</td>
<td>21%</td>
<td>20</td>
</tr>
<tr>
<td>Shigella sonnei</td>
<td>47</td>
<td>13</td>
<td>28%</td>
<td>-24%</td>
</tr>
<tr>
<td>Shigella sp.</td>
<td>4</td>
<td>0</td>
<td>0%</td>
<td>300%</td>
</tr>
<tr>
<td><strong>Total Shigella</strong></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gastrointestinal protozoa</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cryptosporidium felis</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>-100%</td>
</tr>
<tr>
<td>Cryptosporidium hominis</td>
<td>29</td>
<td>3</td>
<td>10%</td>
<td>-50%</td>
</tr>
<tr>
<td>Cryptosporidium meleagridis</td>
<td>2</td>
<td>0</td>
<td>0%</td>
<td>NA</td>
</tr>
<tr>
<td>Cryptosporidium parvum</td>
<td>46</td>
<td>0</td>
<td>0%</td>
<td>-53%</td>
</tr>
<tr>
<td>Cryptosporidium ubiquitum</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>-100%</td>
</tr>
<tr>
<td>Cryptosporidium sp.</td>
<td>354</td>
<td>28</td>
<td>8%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total Cryptosporidium</strong></td>
<td>431</td>
<td>31</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Entamoeba histolytica</td>
<td>11</td>
<td>11</td>
<td>100%</td>
<td>267%</td>
</tr>
<tr>
<td>Giardia duodenalis</td>
<td>19</td>
<td>3</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>Giardia intestinalis</td>
<td>8</td>
<td>2</td>
<td>25%</td>
<td>-11%</td>
</tr>
<tr>
<td>Giardia lamblia</td>
<td>121</td>
<td>31</td>
<td>26%</td>
<td>-7%</td>
</tr>
<tr>
<td>Giardia sp.</td>
<td>19</td>
<td>0</td>
<td>0%</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Total Giardia</strong></td>
<td>167</td>
<td>36</td>
<td>22%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Enteric fever (typhoid and paratyphoid)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salmonella paratyphi A</td>
<td>10</td>
<td>10</td>
<td>100%</td>
<td>150%</td>
</tr>
<tr>
<td>Salmonella paratyphi B</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>-100%</td>
</tr>
<tr>
<td>Salmonella typhi</td>
<td>7</td>
<td>3</td>
<td>43%</td>
<td>-30%</td>
</tr>
<tr>
<td><strong>Total enteric fever</strong></td>
<td>17</td>
<td>13</td>
<td>76%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Viral hepatitis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>32</td>
<td>3</td>
<td>9%</td>
<td>45%</td>
</tr>
<tr>
<td>Hepatitis E</td>
<td>157</td>
<td>5</td>
<td>3%</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Vibrio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibrio cholera O1/0139</td>
<td>0</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Vibrio cholera non-01/0139</td>
<td>3</td>
<td>3</td>
<td>100%</td>
<td>NA</td>
</tr>
<tr>
<td>Vibrio cholera untyped</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>NA</td>
</tr>
<tr>
<td>Vibrio parahaemolyticus</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>-75%</td>
</tr>
<tr>
<td><strong>Total Vibrio</strong></td>
<td>5</td>
<td>5</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Vector-borne viruses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chikungunya virus</td>
<td>6</td>
<td>6</td>
<td>100%</td>
<td>200%</td>
</tr>
<tr>
<td>Dengue virus</td>
<td>28</td>
<td>28</td>
<td>100%</td>
<td>-13%</td>
</tr>
<tr>
<td>Sandfly fever virus</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Tick-borne encephalitis virus</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>West Nile virus</td>
<td>3</td>
<td>3</td>
<td>100%</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Viral haemorrhagic fever</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crimean Congo haemorrhagic fever</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Ebola virus</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>NA</td>
</tr>
<tr>
<td>Rickettsia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rickettsia sp.</td>
<td>6</td>
<td>6</td>
<td>100%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Schistosoma</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. haematobium</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>-100%</td>
</tr>
<tr>
<td>S. mansoni</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Schistosoma sp.</td>
<td>202</td>
<td>202</td>
<td>100%</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Total Schistosoma</strong></td>
<td>203</td>
<td>203</td>
<td>100%</td>
<td>28%</td>
</tr>
<tr>
<td><strong>Vector-borne protozoa</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leishmania sp.</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>-100%</td>
</tr>
<tr>
<td>Trypanosoma cruzi</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Total organisms</strong></td>
<td>2070</td>
<td>683</td>
<td>1885</td>
<td>588</td>
</tr>
</tbody>
</table>

*Laboratory coding of schistosomiasis reporting in Scotland has changed in 2014, which may have influenced the increase in numbers published here.*
References


The last Travel health Surveillance Report was in Issue 14/46
The next Travel health Surveillance Report will be in Issue 15/15