

Rapid communications

FOREIGN TRAVEL-ASSOCIATED INFECTIONS, NORWAY 2007

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Travelling abroad is increasingly popular among the 4.5 million Norwegians. In 2007, Norwegians made a total of 5.8 million holiday trips defined as stays away from all-year residences with a duration of at least four nights. In about half of these trips (3.4 million trips), the destination was outside Norway. The favourite destination in 2007 was Spain, which was chosen for more than 650,000 holiday trips, followed by Denmark, Sweden and Greece [1].

The Norwegian surveillance system for communicable diseases (Meldingssystem for smittsomme sykdommer; MSIS) requires a reporting clinician to record whether an infection was acquired in Norway or abroad, and the patient's country of origin. In 2007, MSIS received information on the place of infection in 95% of the notifications. If the infection is acquired abroad, the clinician is in addition required to record the date on which the patient returned to Norway and reason for the travel (e.g. holiday travel, visiting family in country of origin, business trip etc). In 2007, MSIS received information on reason for travel in 87% of the reported foreign travel-associated infections. Based on these data, the Norwegian Institute of Public Health is able to give an annual overview of the incidence of foreign travel-associated notifiable infections.

In 2007, MSIS received reports for 15,026 cases of notifiable diseases. These diseases are reported with full patient identification or, in the case of sexually transmitted infections, reported anonymously using a non-unique identifier. Twenty-two percent of the cases (3,356/15,026) were foreign travel-associated infections defined as a patient with residence in Norway who is diagnosed with an infection after returning from a journey abroad. Migrants diagnosed with a notifiable disease and believed to have acquired their infection in their former countries of residence before entering Norway are not included. In 2007, this group of migrants constituted 6% (883/15,026) of all infections notified in 2007.

The Norwegian Institute of Public Health received in 2007 a total of 22,847 notifications of genital chlamydial infections that were reported to MSIS in 2007. Since place of infection is not recorded for chlamydial infections, they are not included in this overview of foreign travel-associated infections.

In patients with notifiable diseases, holidays remain the most important reason for travel abroad. With an increasing number of migrants in Norway, trips to visit friends and family in the country of origin are also an important factor regarding foreign travel-associated infections. The stated reason for travelling abroad among the patients notified in the period 2005-2007 is shown in the Table.

Holiday travel

Gastro-intestinal infections are the most frequently reported foreign travel-associated infections among holiday travellers. In 2007, these infections constituted 80% of all reported notifiable diseases in Norwegian holiday travellers. Infections with *Campylobacter* spp. were the most commonly reported notifiable gastrointestinal illness associated with recent travel abroad (1,109 cases), followed by *Salmonella* spp infections (880 cases). Fifty-four percent of the holiday travellers diagnosed with campylobacter and salmonella acquired their infection in other European countries reflecting the most popular travel destinations.

Four percent (95/2,395) of the notified cases in holiday travellers were sexually transmitted infections (STIs). Of these 95 patients, 17 were diagnosed with human immunodeficiency virus (HIV) infection and 65 with gonorrhoea. Nine cases of syphilis and four cases of sexually transmitted hepatitis B were reported. Thailand dominates as the place of infection, with 39% (37/95) of all reported foreign travel-associated STIs; all cases occurred in males. Only three of the patients sexually infected in Thailand were men who have sex with men. In contrast, 19 of the 30 patients who acquired their STIs in European countries were homosexuals. The majority of those infections were acquired in Western European countries.

In 2007, only three holiday travellers returned to Norway with malaria (11% of the total number of notified malaria cases). Based on informal reporting from laboratories, dengue fever seems to be a much more frequently diagnosed illness in holiday

TABLE

Number of notifications of foreign travel-associated infections*, Norway 2005-2007 by reason for travel

	2005	2006	2007
Holiday travel	2,105	2,359	2,395
Visiting family in country of origin	179	192	173
Business/professional travel	116	149	145
Norwegian citizens living abroad	161	177	169
Others	70	55	45
Not stated/ unknown	552	397	429
Total	3,183	3,329	3,356

Source: The Norwegian surveillance system for communicable diseases (MSIS)

* infections diagnosed in a patient with residence in Norway after returning from a journey abroad.

travellers. At present, dengue fever is not a notifiable disease in the Norwegian surveillance.

Eighteen cases of travel related legionellosis were reported among holiday travellers in 2007. The majority of patients diagnosed with legionellosis were infected in Italy and Spain.

In 2007, 6% (146/2,395) of the holiday travellers returning with a notifiable infection were children under the age of 10 years, and 4% (96/2,395) were older than 70 years at the time of diagnosis. There were no significant differences in gender with regards to the number of notifiable infections acquired on holiday travel.

Visiting family or friends in country of origin

In general, travellers visiting family and friends in their country of origin acquire the same infections as holiday travellers. However, surveillance data from MSIS has shown that ethnic minority groups in Norway visiting family or friends in their country of origin are more likely to contract typhoid or paratyphoid fever, malaria, hepatitis A, and shigellosis than ordinary holiday travellers [2,3].

In 2007, 173 cases of foreign travel-associated infections among immigrants visiting family or friends in their country of origin were reported. In 58 % (101/173) of the cases the infection had been acquired in Asia, the largest group being people originating from Pakistan who constitute the largest immigrant population in Norway [3]. In 2007, 44% (20/46) of the total number of typhoid/paratyphoid notifications, 21% (6/29) of all hepatitis A notifications, 18% (5/28) of all malaria notifications and 10% (14/148) of all shigellosis notifications occurred in people visiting family and friends in their country of origin. A large number of the patients in this group are children. In 2007, 38% of the notifiable infections in this group occurred in children under 10 years of age. MSIS data have shown an increasing number of HIV infections acquired during travel to a former country of residence. However, only one such case of HIV infection was reported to MSIS in 2007.

Business/professional travel

The majority of the 145 cases of foreign travel-associated infections in business/professional travellers reported in 2007 were gastrointestinal infections acquired in European countries. In addition, five cases of gonorrhoea, two cases of HIV infection, and two cases of malaria were in 2007 reported in this group.

Norwegian citizens living abroad

Of the 169 cases of foreign travel-associated infections occurring in Norwegian citizens staying abroad for longer periods in connection with work or studies, gastrointestinal infections were the most common reported infections. A relative large number of HIV infections (13 cases), gonorrhoea (9 cases) and malaria (10 cases) were reported in this group in 2007. Six of the 13 HIV infections were acquired in Thailand, and nine of the 13 occurred in heterosexuals. Most of the malaria patients acquired the disease in East Africa. In addition, two people with tuberculosis were notified in 2007.

Recommendations for prevention

Taking into account the large number of people travelling abroad every year, the risk of acquiring a notifiable infection on such trips can be considered low. Foreign travel-associated infections rarely cause secondary transmission or outbreaks in Norway. Travel medicine and public health professionals providing advice

to travellers should in their consultation include information on prevention measures to reduce the risk of food- and water-borne infections. In addition, travel health professionals should also actively promote sexual health in their consultations. In Norway, this is of particular importance for travellers going to Thailand. Special attention should be given to groups who may not perceive their health is at risk from travel to countries familiar to them or their families, such as immigrants visiting family and friends in their country of origin.

Note: This report is based on data published in Norwegian in MSIS-rapport 2008;(36):12 (available from: http://www.fhi.no/eway/default.aspx?pid=233&trg=Area_5626&MainArea_5661=5618;0:15,1327:1:0:0::0:0&MainLeft_5618=5626;69731::1:5624:3::0:0&Area_5626=5544;69733::1:5628:1::0:0)

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