4.1 Malaria

Summary

Number of cases malaria, 2013: 71
Crude incidence rate malaria 2013: 1.55/100,000
Number of cases malaria, 2012: 65

Summary:
In 2013, 71 malaria cases were notified in Ireland, an increase of 9% compared to 65 cases in 2012 (Figure 1). The incidence rate now stands at 1.55 per 100,000 population. Among European Union (EU) member states reporting malaria data to the European Centre for Disease Control, Ireland had the third highest incidence rate for imported malaria in 2010 (the latest year for which comparative data are available); only the United Kingdom and Luxembourg had higher reported incidence rates.[1]

In common with the rest of the EU, males predominated (male: female ratio 2.1:1), with the highest numbers of cases among males aged between 35 and 54. The number of paediatric cases reported was 12, an increase compared to eight cases reported during 2012 (Figure 1).

Six of the paediatric cases reported 'visiting family in country of origin' as their reason for travel while one case was a visitor from outside Ireland who became ill during their stay in Ireland. There was no information on reason for travel for the remaining five paediatric cases. Of the six paediatric cases that travelled to visit family, all visited sub-Saharan Africa, staying for between 1 to 9 months duration. Six of the paediatric cases were reported not taking any prophylaxis for their travel while the remaining six did not have prophylaxis reported.

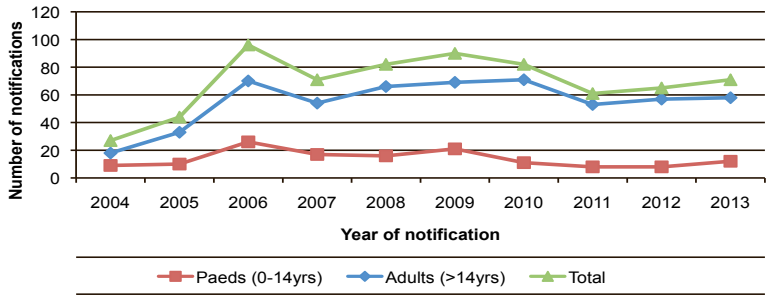

Figure 1: Annual number of malaria notifications by age, Ireland 2004-2013

Table 1: Number of malaria notifications by reason for travel and country of birth, Ireland 2013

Reason for travel	Country of Birth					
	Nigeria	Ireland	Other Africa	Oceania	Not reported	Total
Visit family country origin	23	5	7	0	1	**35**
Foreign visitor ill in Ireland	3	0	0	0	0	**3**
Business/Professional travel	0	2	0	1	0	**3**
Holiday travel	0	2	0	0	1	**3**
Irish citizen living abroad	0	2	0	0	0	**2**
Other	1	1	0	0	0	**2**
New entrant to Ireland	0	0	1	0	1	**1**
Child visiting parents	0	1	0	0	0	**1**
Reason for travel not reported	1	0	1	0	22	**21**
Total	28	13	9	1	25	71

Among all age groups, the category of traveller most affected in Ireland continued to be African immigrants and their families who were exposed while returning to 'visit family in country of origin' (table 1). This almost certainly reflects the greater frequency with which this group travels to malarious areas, but also reflects Ireland's importance as a destination for those emigrating from English speaking West Africa. Where the reason for travel was reported in 2013, 70.0% cited 'visiting family in country of origin', all of whom travelled to Africa (table 1).

The second most commonly cited reasons for travel this year were 'Business/professional travel' (n=3), 'Holiday travel' (n=3) and 'Foreign visitor ill Ireland' (n=3), each making up 6% of cases with known reason for travel in 2013.

Figure 2 shows the distribution of cases by reason for travel 2006-2013. During that time period 'visiting family in country of origin' remained the most common reason for travel, with new entrant and holidaymaker case numbers declining. The numbers of cases in persons exposed during business/professional travel has increased.

Nigeria remained the country most frequently visited, accounting for 52.1% of total cases and 64.9% of cases where country of infection was reported (table 2). The remaining cases were exposed in other countries within Africa. The majority of cases who reported travel to Nigeria were 'visiting family in country of origin' (29/35 with known reason for travel).

Plasmodium falciparum accounted for 88.7% of infections in 2013, reflecting the dominance of exposure in Africa as the source of the majority of notifications. One case each of *P. ovale* and *P vivax* were also reported which remains stable in comparison to previous years. The remaining six cases did not have *Plasmodium* species specified.

While this report has highlighted the high incidence among persons travelling to 'visit family in their country of origin', malaria prevention messages should also be targeted at tourists, business travellers and other travellers with little previous exposure to malaria.

Children can also be particularly at risk. It is important that persons born in Western and Central Africa who take up residence in Ireland and who return to their country of origin with their Irish-born children are made aware of the fact that their children have no innate immunity to malaria (and their own immunity will likely have waned considerably), and must complete their full course of advised chemoprophylaxis while taking steps to ensure they avoid mosquito bites.

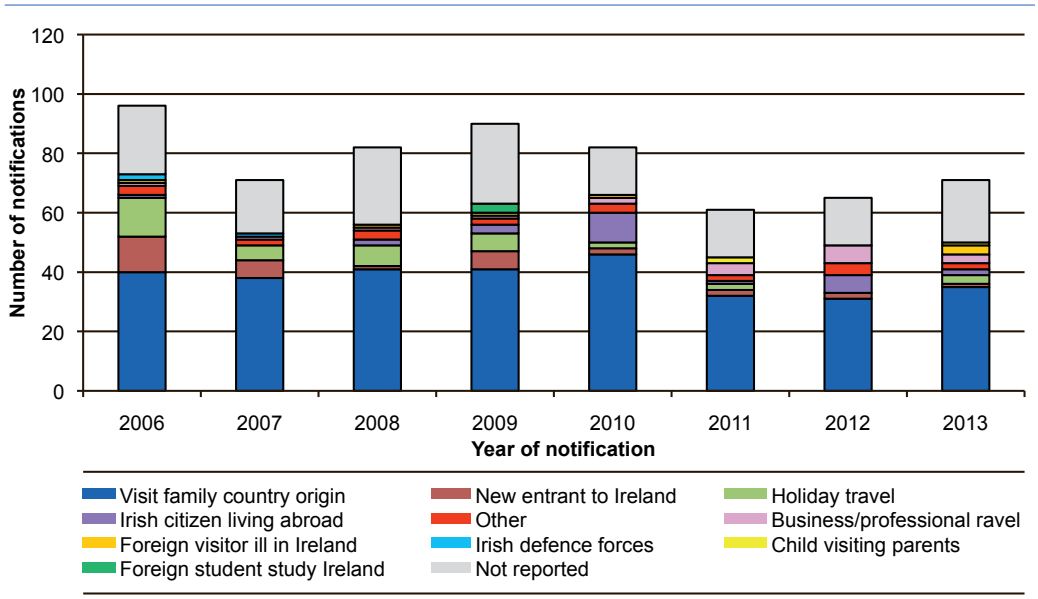

Figure 2: Annual number of notifications malaria by reason for travel, Ireland 2006-2013

Table 2: Number of cases malaria by infecting species and country of infection

Organism	Nigeria	Other African country[1]	Not reported	Total
Plasmodium falciparum	33	18	12	**63**
Plasmodium ovale	0	1	0	**1**
Plasmodium vivax	1	0	0	**1**
Plasmodium	3	0	2	**5**
Malarial parasites	0	1	0	**1**
Total	37	20	14	71

n=1 each from Angola, Congo DR, Egypt, Ivory Coast, Mozambique, Papua New Guinea, Sierra Leone, South Africa, Sudan and Tanzania n=2 each from Cameroon, Ghana and Uganda.

HPSC resources for health professional include a poster which can be downloaded from the HPSC website for display in GP surgeries, maternity hospitals, paediatric hospitals and emergency departments, advising immigrant families travelling to Africa to consult their doctor about malaria before travelling. A leaflet for intending travellers, available in English and French, highlights the value of antimalarial prophylaxis and protection against mosquito bites. The poster and leaflet are available here.

Recent developments of note include a case of autochthonous falciparum malaria was reported in a patient in France during February 2013. The case reported no recent travel to malaria-endemic countries and it was hypothesised that transmission was likely due to an infective *Anopheles* mosquito carried in the luggage of a close contact recently arrived from a malaria-endemic area. [2]

During 2013, a case of a *Plasmodium knowlesi* infection was reported as imported to Germany from Thailand. *P. knowlesi* was known as a plasmodium of macaques until transmission to humans was recognised in Borneo and later throughout South-East Asia. The retrospective analysis of blood samples from Thailand suggests that the prevalence of *P. knowlesi* infections remained stable from 1996 to 2008 so it is likely that the increasing number of cases recognised is due to raised awareness of the possibility of human *P. knowlesi* malaria and to the application of diagnostic molecular biology techniques to differentiate this parasite from other malaria parasites. However, due to of the possibility of a severe course of *P. knowlesi* infections, physicians must be increasingly aware of this as a human pathogen. [3]

Also of note is the recent re-emergence of indigenous malaria due to *P. vivax* in Greece, with continued transmission during 2013.[4,5,6,7] However, case numbers are very low and have been identified in areas not usually associated with tourism. In a European Centre for Disease Control and Prevention Risk Assessment of the situation, the risk to travellers to the country was deemed limited, with general advice for travellers to take prophylaxis not recommended, although travellers to Greece should take standard measures against mosquito bites to protect against this and other mosquito-borne diseases.[7] Moreover, health professionals who see cases of febrile illness returning from the affected parts of Greece should be alert to the possibility of malaria.

References

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7. European Centre for Disease Prevention and Control (ECDC). Rapid risk assessment: Update on autochthonous *Plasmodium vivax* malaria in Greece. October 2011