4.1 Malaria

Summary

Number of cases 2011: 61
Crude incidence rate 2011: 1.3 per 100,000 population
Number of cases 2010: 82

In 2011, the number of malaria cases in Ireland declined by 25% to 61 cases, the lowest level since 2005 (Figure 1). The incidence rate now stands at 1.3 per 100,000 population. Among EU Member States reporting malaria data to the European Centre for Disease Control, Ireland had the second highest incidence rate for imported malaria in 2009 (the latest year for which comparative data are available) -only the United Kingdom had a higher reported incidence rate. Despite the decreased incidence in 2011, it is likely that Ireland will continue to have one of the highest reported incidence rates in the EU for 2011. [1]

Among the 61 cases, males predominated (n=41), with the highest numbers of cases among males aged between 35 and 55. The eight paediatric cases reported this year represent a 70% decrease on 2006 (n=26), the year in which notifications of paediatric malaria cases peaked (Figure 1). Six of these reported 'visiting family in country of origin' as their reason for travel, and one was a 'new entrant'; there was no information on reason for travel for the remaining paediatric case.

The group 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

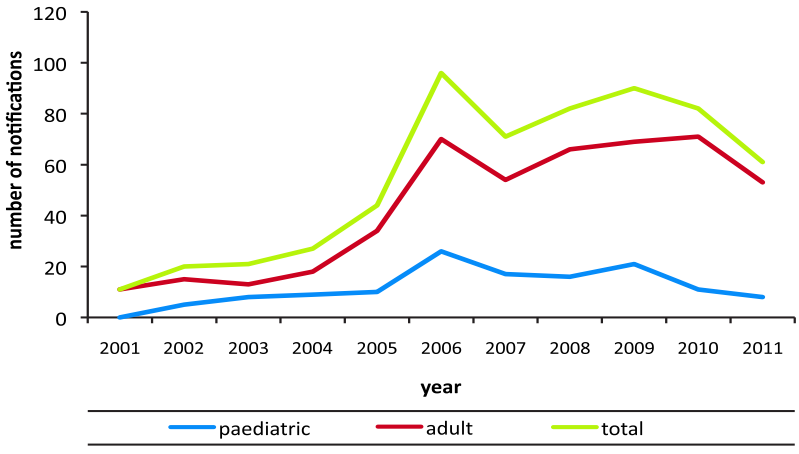

Figure 1. Annual number of notifications malaria by age, Ireland 2001-2011

Table 1. Number of cases malaria by reason for travel and country of birth, Ireland 2011

Reason for travel	Country of birth						
	Nigeria	Other Africa	Asia	Ireland	Other	Not specified	Total
Visit family country origin	15	7	6	3		1	32
Business/Professional Travel	1			3			4
Holiday travel				1			1
Irish citizen living abroad				1		1	2
New entrant to Ireland		2					2
Other				2	2		4
Not reported	1	1				14	16
Total	17	10	6	10	2	16	61

Other includes: aid/volunteer workers (n=2), and child visiting parents (n=2)

1). This almost certainly reflects the greater frequency with which this group travels to malarious areas; and also reflects Ireland's importance as a destination for those emigrating from English speaking West Africa. Seventy-one per cent of cases with a known reason for travel in 2011 cited 'visiting family in country of origin', with at least 69% of these being of African origin (Table 1).

The second most common reason for travel this year was 'Business/professional travel' (4 cases -9% of cases with known reason for travel). This compares with a total of 13 cases listing this as their reason for travel over the previous ten years. All four travelled to Africa for periods varying from 2 weeks to 12 months.

A welcome finding was that there was only one case associated with holiday travel in 2011, down from a high of thirteen holiday-related cases in 2006.

Nigeria remained the country most frequently visited -33% of all cases, or 43% of those with country of infection reported (Table 2). The second most common destination reported was Pakistan with eight reported cases (five were reported in one family group). This compares with a total of nine cases related to travel to Pakistan in the previous 10 years.

The majority of cases who reported travel to Nigeria and Pakistan were 'visiting family in country of origin' (25/28), whereas visitors to other parts of Africa reported a variety of reasons for travel.

P. falciparum cases numbers declined, making up 70% of cases in 2011, while *P. vivax* case numbers increased (10 cases versus 1-7 cases annually in the previous 10 years). This increase was strongly correlated with the increased number of cases reporting exposure in Pakistan. As expected, the median interval between arrival from a malarious country and onset of symptoms was lower for *P. falciparum* cases -9 days (n=20) -and *P. vivax* cases-8 days (n=8) - relative to the interval reported for the one *P. ovale* case with this information -251 days.

Several factors could have contributed to this decline in cases in 2011. It could reflect improved awareness of the risk of malaria, and better uptake of travel advice, but it is probably at least in part due to fewer journeys by Irish residents to Africa in recent years, following Ireland's economic contraction –data from the CSO quarterly household survey shows that travel to Africa by Irish residents peaked in 2007-2008, and declined in 2009, the latest complete year for which these data are available.[2]

It may also be due to global efforts to reduce the incidence of malaria across affected regions. The WHO report that '*in Africa, malaria deaths have been cut by one third within the last decade, and that outside of Africa, 35 out of the 53 countries, affected by malaria, have reduced cases by 50% in the same time period*'.[3] The measures taken to reduce incidence among residents of these countries are also likely to be effective for travellers, in particular those travelling to 'visit family in country of origin'.

While this report has highlighted the high incidence among immigrants travelling to 'visit family in their country of origin', malaria prevention messages should also be targeted at tourists and other travellers with little previous exposure to malaria. A recent study in the United Kingdom has shown that while the highest numbers of cases may be among those of African heritage visiting family and friends, that the highest risk of dying among those who acquired malaria was among the elderly, among tourists and among those presenting to health professionals in areas where malaria is uncommon, making these important groups to target in pre-travel advice.[4] Children can be particularly at risk; it is important that those 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.

References

1. ECDC. Annual epidemiological report 2011 - Reporting on 2009 surveillance data and 2010 epidemic intelligence data http://ecdc.europa.eu/en/publications/Publications/Forms/ECDC_DispForm.aspx?ID=767 access 30th March 2012
2. CSO. Household travel survey. Q1 2010. http://www.cso.ie/en/media/csoie/releasespublications/documents/tourismtravel/current/hotra.pdf accessed 4th April 2012
3. WHO. http://www.rbm.who.int/worldmalariaday/ accessed 30th March 2012
4. Anna M Checkley, Adrian Smith,Valerie Smith, ,Marie Blaze, David Bradley, Peter L Chiodini, Christopher J M Whitty, Risk factors for mortality from imported falciparum malaria in the United Kingdom over 20 years: an observational study BMJ 2012;344:e2116 http://www.bmj.com/content/344/bmj.e2116 Accessed 30th March 2012

Table 2. Number of cases malaria by infecting species and country of infection, Ireland 2011

Organism	Country of Infection				Total
	Nigeria	Pakistan	Other Africa[a]	Not specified	
P.falciparum	20		11	12	43
P.ovale			2	1	3
P.vivax		8	1	1	10
Not Specified			4	1	5
Total	20	8	18	15	61

[a]*Includes cases associated with Congo (n=5), Ghana (n=3), Uganda(n=3), Sudan (n=2), and one each with Benin, DRC, Kenya, Somalia, and Western sahara*