Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

January 2006

Volume 7 Issue 1

hpsc EPI-Insight

Disease Surveillance Report of HPSC, Ireland

ISSN: 1393-9548

Contents

Malaria Alert in UK

The Health Protection Agency (HPA) in the UK has issued a warning about the importance of taking anti-malarial medication when travelling to areas where malaria is endemic. This follows two deaths and four other cases of falciparum malaria in travellers returning from The Gambia, West Africa, who did not take the appropriate anti-malarial medication.[1]

Malaria is a serious and potentially fatal illness, which is passed on to humans through mosquito bites. It can be effectively and easily avoided by taking anti-malarial medication and by taking other precautionary measures such as wearing insect repellent and 'cover-up' clothing, and sleeping under an insecticide-treated net. Anti-malarial medication must be taken prior to travelling, while abroad, and for a period after returning from a malarious area.

Table 1. The number of malaria cases and rate per 100,000 population in Ireland, 2000 to 30 November 2005.

Year	No. cases	Rate per 100,000 (95% CI)
2000	19	0.49 (0.27-0.71)
2001	11	0.28 (0.11-0.45)
2002	20	0.51 (0.29-0.73)
2003	21	0.54 (0.31-0.77)
2004	27	0.69 (0.43-0.95)
2005 *	43	1.10 (0.77-1.43)

* to 30 November 05

The symptoms include a flu-like illness, fever, shaking, headache, muscle aches and tiredness. Nausea, vomiting and diarrhoea may also occur. If travellers develop these symptoms whilst abroad or up to one year after returning, they should seek prompt medical advice and tell their doctor they have been in an area where malaria is a hazard.

In Ireland, 141 cases of malaria and one death were notified to HPSC during the period 2000 to 30 November 2005 (table 1). The largest number of cases (29.8%) occurred in the 25-34 year old age group. Of the 95 cases where the organism was specified, 73 (76.8%) were caused by *Plasmodium falciparum*.

The HPA has published guidelines on the prevention of malaria in travellers at http://www.hpa.org.uk/infections/topics_az/malaria/guidelines.htm. Guidance is also available at the WHO website at www.who.int/ith/en/.

Reference

1. HPA. Malaria deaths prompt health warning to 'Winter Sun' travellers. Press Release 9 December 2005.

Monkey Bite Incident in HSE Southern Area

In mid-summer 2005, an unusual incident involving a circus monkey occurred in the HSE Southern Area. While visiting a travelling circus a young child was attacked by a monkey. The child sustained a bite to a finger which bled, and scratches to the face and body. Wound cleaning and administration of broad-spectrum antibiotics were carried out at a local A&E department. Subsequently, advice regarding rabies was requested of the Department of Public Health. A full course of rabies vaccine was recommended as the animal had disappeared. The incident raised issues in relation to subsequent appropriate follow-up.

The animal was eventually located and placed in quarantine. A public health risk assessment was done. The risk assessment considered veterinary evaluation of the health/disease status of the monkey, the particular genus involved and those screening tests which might be of public health significance. Veterinarians were unable to confirm the monkey genus because of teeth filing and tail cropping; however, they considered it likely to be a macaque.

When evaluating macaque bites, the primary concerns are bacterial and herpes B-virus infections.[1] Herpes B-virus naturally infects macaque monkeys. It can cause fatal encephalomyelitis in humans.[2] Medical experts at the Health Protection Agency in the UK, in conjunction with HPSC, were consulted. The most relevant infections to test for were rabies and *Herpesvirus simiae* (B-virus). The primate was also checked for simian immunodeficiency virus (SIV) and hepatitis B. Rabies was ruled out clinically (there was a time lag between the incident and the eventual location of the monkey). All infections tested for were negative.

Although this type of incident is rare in Ireland, it highlights the need for vigilance in relation to exotic animal contact, awareness of potential risks, the importance of early access to expert advice and the absolute necessity for close professional collaboration between public health physicians and their veterinary colleagues.

Margaret B O' Sullivan, Helena Murray, Eileen O' Connell, Dept of Public Health HSE Southern Area

References

1. Ostrowski SR, Leslie MJ, Parrott T, Abelt S, Piercy PE. B-virus from pet macaque monkeys: an emerging threat in the United States? *Emerg Infect Dis* 1998; **4**(1). Available at **http://www.cdc.gov/ncidod/eid/vol4no1/ostrowsk.htm**
2. Cohen JI *et al*. Recommendations for prevention of and therapy for exposure to B virus (*Cercopithecine Herpesvirus* 1). *Clin Infect Dis* 2002; **35**: 1191-203.

hpsc
Health Protection Surveillance Centre
25-27 Middle Gardiner St
Dublin 1, Ireland
Ph +353 1 876 5300
Fx +353 1 856 1299
E info@mailx.hse.ie
www.hpsc.ie

Epidemiology of Tuberculosis in Ireland, 2003

The World Health Organisation (WHO) has estimated that globally there were 8.8 million new cases of tuberculosis (TB) in 2003, of which 3.9 million were smear positive. It is estimated that 1.75 million deaths resulted from TB in 2003.[1]

A review of the epidemiology of TB cases notified in Ireland during 2003 is presented. Data for 2003 have been validated and updated to include information relating to treatment outcome. Provisional data for 2004 are also included.

Materials and Methods

For each individual case of TB notified in 2003 an enhanced notification form was completed by public health doctors using the available clinical, microbiological, histological and epidemiological data. These forms were then collated in the regional departments of public health and an anonymised dataset was submitted to HPSC on a quarterly basis. National quarterly reports were produced by HPSC. Information on all 2003 cases was updated in early/mid 2005 by each health board to include outcome data.

Population figures, used as the denominator, were taken from the 2002 census of population. In order to compare rates between groups of interest, 95% confidence intervals were used. Direct methods of standardisation were used to allow comparison of rates between geographical areas using the Irish population as the standard population.

Table 1. Notified TB cases in Ireland, 1991 – 2003, with 3-year moving averages, 1992 - 2003

Year	Number	Crude rate per 100,000pop.	3 year moving average
1991	640	18.2	
1992	604	17.1	612
1993	598	17.0	581
1994	524	14.5	526
1995	458	12.6	469
1996	434	12.0	436
1997	416	11.5	423
1998	424	11.7	433
1999	469	12.9	439
2000	395	10.1	410
2001	381	9.7	391
2002	408	10.4	401
2003	407	10.4	

As in previous years, the case definitions used were as recommended in the report of the Working Party on Tuberculosis.[2]

Results

In 2003, 407 cases of TB were notified in Ireland, a rate of 10.4/100,000 population. This compares with 408 cases notified in 2002 (10.4/100,000) and 381 cases (9.7/100,000) notified in 2001. Annual TB notifications from 1991 to 2003 are provided in table 1 with three-year moving averages. The three-year moving average, which removes some of the fluctuation from year to year, showed a slight increase.

Table 2. Summary of epidemiology of TB in Ireland, 2000 – 2003

	2000	2001	2002	2003
Total number of cases	395	381	408	407
Notification rate per 100,000 population	10.1	9.7	10.4	10.4
Foreign born TB patients	44	63	123	89
% Culture positive patients	58	58.8	61.0	64.4
M. tuberculosis	222	204	234	250
M. bovis	2	7	5	5
M. africanum	3	1	0	0
% smear positive pulmonary cases	47.2	44.4	38.4	48.8
Monoresistance to isoniazid	2	4	8	8
Monoresistance to streptomycin	1	3	1	1
Monoresistance to pyrizinamide	1	1	0	0
Multi-drug resistant cases	2	2	0	1
Deaths attributed to TB	6	5	5	6

Table 3: Number of cases of TB in Ireland and age standardised incidence rates with 95% confidence intervals (CI) by health board , 2003

Health Board	TB cases	Age standardised incidence rate	95% CI
ERHA	167	11.8*	10.0-13.6
MHB	12	5.4	2.3-8.5
MWHB	42	12.4	8.6-16.1
NEHB	26	7.7	4.8-10.7
NWHB	9	3.8	1.3-6.4
SEHB	35	8.3	5.6-11.1
SHB	93	16.0	12.7-19.3
WHB	23	5.9*	3.4-8.3
Ireland	407	10.3*	9.3-11.4

*The age standardised rate for Ireland differed from the crude rate as age was unknown for one case in the WHB and one case in the ERHA

A summary profile of the epidemiology of TB in Ireland from 2000 to 2003 is shown in table 2.

Age standardised rates by health board are provided in table 3. The highest age standardised TB incidence rate was reported in the SHB at 16.0/100,000 population. This was significantly higher than the national age standardised incidence rate (10.3/100,000). The next highest rates were reported in the MWHB (12.4/100,000) and the ERHA (11.8/100,000). The NWHB had the lowest rate at 3.8 per 100,000 population. The rates in the NWHB, MHB and WHB were significantly lower than the national age standardised incidence rate.

Geographic origin

Of the 407 patients diagnosed with TB in 2003, 300 (73.7%) were born in Ireland, 89 (21.9%) were born outside Ireland and for the remaining 18 cases the country of birth was unknown. Of the 89 born outside Ireland, 38 cases were born in Asia, 22 in Africa, 21 in Europe, two in North America and one in South America. The

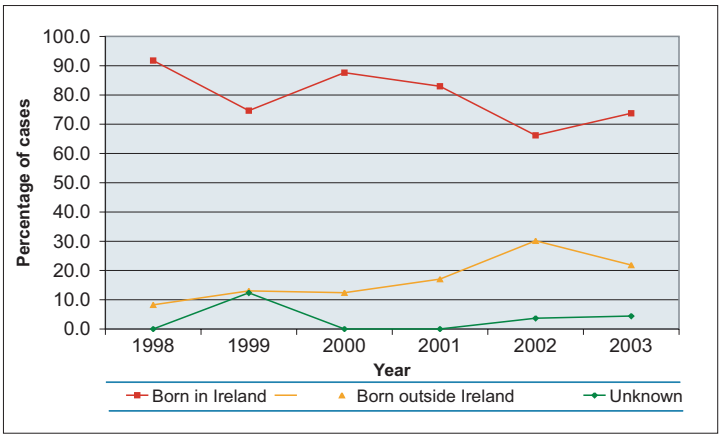

Figure 1: TB cases by geographic origin, 1998 to 2003

country of birth was unknown for five of the cases born outside Ireland. Figure 1 shows the percentage of cases of TB by geographic origin from 1998 to 2003.

Age and sex distribution

Two hundred and fifty two cases were male (61.9%) and 154 were female (37.8%), giving a male to female ratio of 1.6:1. Sex was not reported for one case. The median age of all cases in 2003 was 38 years (range 4 months to 98 years). Rates in males were higher than females for all age groups. For both males and females, the highest rates were observed in those aged 65 years and older and the lowest rates were in those aged less than 15 years.

Figure 2 shows the age distribution of cases notified in 2003 by geographic origin. The median age of cases born in Ireland was 47 years while the median age of those born outside Ireland was 27 years, a difference of 20 years

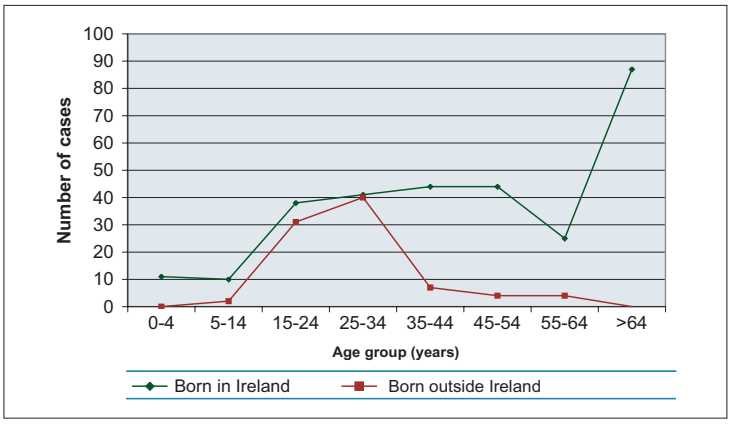

Figure 2: TB cases by age group and geographic origin, 2003

Diagnostic details

Of the 407 TB notifications, 262 (64.4%) were definite cases which were culture confirmed. Of the 262 culture-confirmed cases, 250 (95.4%) of the isolates were *M. tuberculosis* and five (1.9%) were *M. bovis*. The isolate was not specified in seven culture positive cases.

Two hundred and sixty five cases were pulmonary (65.1%), 105 cases were extrapulmonary (25.8%) and 34 cases were pulmonary and extrapulmonary (8.4%). In three cases, the TB site was unspecified (0.7%). Of the 299 TB cases with a pulmonary disease component, 211 (70.1%) were culture positive and 146 (48.8%) were smear positive.

TB meningitis

There were eight cases of TB meningitis reported in 2003, an incidence rate of 0.2 per 100,000 population. Between 1998 and 2003, 35 cases of TB meningitis were reported giving a cumulative incidence rate of 0.89 per 100,000 population. Four of the 35 TB meningitis cases reported between 1998 and 2003 were in children aged 0-4 years.

Resistance

Resistance was documented in 12 cases out of a total of 250 *M. tuberculosis* isolates (4.8% of *M. tuberculosis* isolates). Mono-resistance was recorded in nine cases (eight resistant to izoniazid and one to streptomycin). Two further cases were resistant to both isoniazid and streptomycin. There was one multi-drug resistant TB (MDR-TB) case, which was resistant to isoniazid, rifampicin, pyrazinamide, ethambutol and streptomycin. Five of the 12 (41.7%) drug-resistant cases were born outside Ireland.

Outcome

In 2003, treatment outcome was recorded for 345 cases (84.8%). Treatment was completed in 264 (64.9%) of cases. Thirty two cases died during this period and TB was the cause of death in six cases. Details on treatment outcome for all cases and for smear positive cases only are shown in table 4.

Table 4: Treatment outcome monitoring for all cases and smear positive cases, 2003

Treatment outcome	Total cases		Smear positive cases	
	Number	%	Number	%
Completed treatment	264	64.9	92	63.0
Lost to follow-up	30	7.4	7	4.8
Treatment interrupted	12	2.9	5	3.4
Still on treatment	7	1.7	2	1.4
Died (attributed to TB)	6	1.5	2	1.4
Died (not attributed to TB)	26	6.3	10	6.8
Outcome unknown	62	15.2	28	19.2
Total	**407**	**100.0**	**146**	**100.0**

Provisional 2004 data

There were 437 cases of TB provisionally notified in 2004. It is important to note that these data are provisional and **may change significantly following validation**.

- Pulmonary TB was diagnosed in 274 cases (62.7%), extrapulmonary TB in 117 cases (26.8%), and pulmonary and extrapulmonary TB in 26 cases (6.0%), site of disease was unspecified in 20 cases.

- Of the 300 cases with a pulmonary component, 165 (55.0%) were culture positive and 117 (39.0%) were smear positive.

- One hundred and twenty (27.5%) of the cases were born outside

Ireland, 282 cases (64.5%) were born in Ireland and country of birth was unavailable for 35 cases (8.0%).

- Of the 437 cases, 258 (59.0%) were male and 175 (40.0%) were female. The gender was unknown for four cases.

- One hundred and seventeen (26.8%) of the cases provisionally notified in 2004 were aged between 25 and 34 years and 101 (23.1%) were aged 65 years and older.

- There were six cases of TB meningitis provisionally notified in 2004

Discussion

1n 2003, 407 cases of TB were notified to HPSC giving a national crude incidence rate of 10.4 per 100,000 population. The overall notification rate in countries of the EU and Western Europe which reported to the EuroTB network (www.eurotb.org) was 13.6 per 100,000, being highest in the Baltic States (47-82 per 100,000).[3]

Differences in age standardised TB incidence rates persist between health board areas with the SHB having the highest rate in 2003, followed by the MWHB and the ERHA, while the NWHB reported the lowest age standardised incidence rate. In 2002, the highest rates were seen in the SHB, the SEHB and the ERHA.

The highest age-specific rate occurred among those aged 65 years and over (21.3/100,000 population). This was similar to the rate observed in this age group in 2002 (20.6/100,000). The male to female ratio (1.6:1) reported in 2003 was also comparable with the rate reported in 2002 (1.8:1). The age distribution differed significantly between those born in Ireland and those born outside Ireland.

In 2003, 21.9% of TB cases were born outside Ireland compared to 30.1% in 2002 and 16.5% in 2001. In 2003, among countries in the EU and Western Europe who reported data to the EuroTB network, 31% of notifications were in foreign born patients.[3] In the United Kingdom, France, Germany and Belgium, where crude incidence rates are similar to those reported in Ireland, the percentage of cases of foreign origin in 2003 ranged from 42-63%.[3]

There were eight cases of TB meningitis in 2003, a rate of 0.2 per 100,000 population. This is the highest rate recorded since enhanced surveillance began in 1998. Two of the four cases of TB meningitis in the 0-4 year age group, which have occurred since 1998, were reported in 2003.

In 2003, there was one case of MDR-TB reported in Ireland (0.3% of TB cases in 2003). Of the other countries in the EU and Western Europe who reported data to EuroTB, MDR-TB remained more frequent in the Baltic States, with a combined percentage of 19% (range 15-23%) compared to 2% (range 0-6%) in the 15 other countries in the EU and Western Europe which provided data.[3]

In recent years, the quality of the data, and in particular data on treatment outcome, has improved greatly. In 2003, information on treatment outcome was provided for 84.8% of cases as compared to 77.2% in 2002 and 59.8% in 2001. It is critical to TB control in Ireland that surveillance of TB and reporting of outcome data be maintained at a high level.

Kate O'Donnell, Joan O'Donnell, Lorraine Hickey, HPSC

Acknowledgements

We would like to thank all those who participated in the collection of information including the notifying physicians, public health doctors, surveillance scientists, microbiologists, nurses, laboratory and administrative staff.

References

1. World Health Organisation. Global tuberculosis control: surveillance, planning, financing. WHO Report 2005. Geneva, Switzerland.
2. Department of Health (Ireland). Report of the Working Party on Tuberculosis 1996: Government Publications.
3. EuroTB and the national coordinators for tuberculosis surveillance in the WHO European Region. Surveillance of tuberculosis in Europe. Report on tuberculosis cases notified in 2003. Institut de Veille Sanitaire, Saint Maurice, France, September 2005

EPIET Fellowships

The European Programme for Intervention Epidemiology Training invites applications for up to 16 fellowships for a 24-month training programme in communicable disease field epidemiology starting in September 2006. Applicants must be nationals of an EU member country, Switzerland or Norway and should have experience in public health, a keen interest in fieldwork and be pursuing a career involving public health infectious disease epidemiology. They should have a good knowledge of English and of at least one other EU language, and be prepared to live abroad for a period of 24 months. The aim of the training is to enable the fellow to assume service responsibilities in communicable disease epidemiology. The in-service training will focus on outbreak investigations, disease surveillance, applied research, and communications with decision makers, the media, the public and the scientific community.

Detailed information can be obtained from the EPIET programme website at www.epiet.org. Vacancy notice for application can be found on the ECDC website at www.ecdc.eu.int/recruitment.php. **Applications should be submitted electronically by 6 February 2006 to ecdc.epietfellow@ecdc.eu.int.**