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World AIDS Day December 1st 2004

World AIDS Day is commemorated around the globe on 1 December. Throughout the world, people celebrate the progress made in the battle against the epidemic while focusing on the challenges ahead. World AIDS Day 2004 focuses on women, girls, and HIV and AIDS, which is the theme for the World AIDS Campaign 2004. All over the world women do not enjoy the same rights and access to employment, property and education as men. Women and girls are also more likely to face sexual violence. This makes them more vulnerable to HIV and, as the primary care givers, to the impact of AIDS. Further information on World AIDS Day 2004 can be accessed on the UNAIDS website.¹

Globally, it is estimated that there are 38 million people living with HIV and AIDS, with only a fraction of these people able to access treatment and care. During 2003, an estimated 4.8 million people became newly infected with the HIV virus, which is the largest number infected in a single year since the epidemic began. As of December 2003, women accounted for nearly 50% of all people living with HIV worldwide and for 57% in Sub-Saharan Africa.² Sub-Saharan Africa continues to bear the brunt of the epidemic with an estimated 3 million people newly infected in 2003. In other regions of the world, most notably Eastern Europe and Asia, the HIV epidemic is expanding rapidly. Experts meeting at the 15th International AIDS conference in Bangkok in July 2004 agreed that while much of the world's attention has been focused on finding ways to make anti-HIV drug treatment accessible to the millions worldwide, preventing new infections is crucial to keep treatment needs from continuing to outstrip treatment efforts.³ Dr Peter Piot, Head of UNAIDS said, "without a greatly expanded prevention effort, treatment is simply not sustainable". A comprehensive report on the global HIV/AIDS epidemic published by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and WHO provides the most up to date information on the state of the global pandemic.²

HIV Infections in Ireland

There have been increasing numbers of people diagnosed as HIV positive in Ireland in recent years. There were 399 newly diagnosed HIV infections in Ireland in 2003. This compares to 364 cases diagnosed in 2002, and represents a 10% increase. The rate of newly diagnosed HIV infection in Ireland in 2003 was 101.9 per million population. The total number of AIDS cases reported to the end of 2002 is 731 and the total number of AIDS-related deaths reported to the end of 2002 is 369.

Of the 399 HIV infections newly diagnosed in 2003, 202 (51%) were male and 196 (49%) were female. Information on gender was unavailable for one of the newly diagnosed cases. The probable route of transmission for the majority of female cases (75%) diagnosed in 2003 was heterosexual contact. Among males, the most frequent route of transmission was reported as heterosexual contact (37%) and sex between men (37%). Among females newly diagnosed in 2003, 71% were born in Sub-Saharan Africa and 13% were born in Ireland. Among males newly diagnosed in 2003, 53% were born in Ireland and 29% were born in Sub-Saharan Africa.

Among the newly diagnosed cases in 2003, there was a notable difference in age distribution between the sexes and females were younger at HIV diagnosis than males. The mean age at HIV diagnosis was 27.7 years in females and 33.4 years in males, a difference of 5.7 years. This may reflect the availability of routine antenatal screening in Ireland, and differences in health seeking behaviours between men and women.

In 1999, the Department of Health and Children officially launched a policy of voluntary antenatal HIV testing in Ireland. As part of this programme, HIV testing is offered to all women who attend for antenatal services. Data in relation to the programme are collected by the National Disease Surveillance Centre (NDSC). During 2002, 156 women were diagnosed as HIV positive during routine antenatal screening. Of these women, 113 were new diagnoses, that is, they had not been previously aware of their HIV status. Once diagnosed, these women have the opportunity to avail of treatment, which can dramatically reduce the risk of transmission of HIV to their babies.

Further information on HIV and AIDS in Ireland and antenatal HIV screening can be found on the NDSC website (www.ndsc.ie).

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TB in Ireland, 2002

Introduction

In 2002, there were 8.8 million new cases of tuberculosis (TB) globally, of which 3.3 million were smear positive.¹ Furthermore, over 400,000 cases of TB were notified in the 52 countries in the WHO European region in 2002.^{2,3} The overall notification rate was 14 per 100,000 population in Western Europe. In the Central European region, TB notification rates were 20 – 62 per 100,000 with the exception of Romania where rates were 153 per 100,000.² Notification rates were highest in Eastern Europe at 97 per 100,000 population.²

A review of the epidemiology of tuberculosis cases notified to NDSC by each of the health boards in Ireland during 2002 is presented. Data presented for 2002 have been validated and updated to include information relating to treatment outcome.

Materials and Methods

An enhanced tuberculosis notification form was completed by public health doctors for each case of TB notified in 2002. These forms summarise all available clinical, microbiological, histological and epidemiological data. Forms were then collated in the regional Departments of Public Health, where data were also entered onto an Epi Info 2000 database. An anonymised dataset from the Epi info database was submitted electronically to NDSC on a quarterly basis. All cases of tuberculosis notified to NDSC were collated at a national level on a single Epi Info 2000 database for detailed analysis. Reports summarising results were produced on a quarterly basis by NDSC. Information on all cases was updated in late 2003/early 2004 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.

As in previous years, the case definitions used were as recommended by the National Tuberculosis (TB) Working Group.⁴

A **notified case** of TB refers to clinically active disease due to infection with organisms of the *Mycobacterium tuberculosis* complex (*M. tuberculosis*, *M. bovis*, *M. africanum*). Active disease is presumed if the patient is commenced on a full curative course of anti-tuberculosis chemotherapy. Persons placed on chemoprophylaxis for preventive treatment or infected by mycobacteria other than *M. tuberculosis* complex are not included as cases.

Pulmonary TB is defined as a laboratory-confirmed case – either a positive smear, histology or culture of a respiratory sample – with or without radiological abnormalities consistent with active pulmonary TB or a case where the physician takes the decision that the patient's clinical symptoms and/or radiological signs are compatible with pulmonary TB.

Extrapulmonary TB is defined as a patient with a smear, culture or histological specimen from an extrapulmonary site that is positive for *M. tuberculosis* complex or a case with clinical signs of active extrapulmonary disease in conjunction with a decision taken by the attending physician to treat the patient with a full curative course of anti-tuberculosis chemotherapy.

Results

Four hundred and eight cases of TB were notified in 2002 in Ireland, giving a notification rate of 10.4/100,000 population. This represents a 7.1% increase on the corresponding figure in 2001 (381 cases: 9.7/100,000) (table 1).

The highest age standardised TB incidence rate was reported in the Southern Health Board (SHB), at 13.1 per 100,000 population

Table 1. Notified TB cases in Ireland, 1991 – 2002, with 3-year moving averages, 1992 - 2001

Year	Number of cases	Crude rate per 100,000 population	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	

(table 2). The North Western Health Board (NWHB) had the lowest age standardised rate at 5.1/100,000. In addition, the rate in the NWHB was significantly lower than the national age standardised incidence rate (10.4 per 100,000).

Age and sex distribution of cases

Two hundred and fifty nine cases were male (63.5%) and 148 were female (36.3%), giving a male:female ratio of 1.8:1. The gender of one case was not recorded (0.2%). The mean age of those

Table 2: Number of cases of TB in Ireland and age standardised incidence rates with 95% confidence intervals (CI) by health board, 2002

Health Board	Number of cases	Age standardised incidence rates	95% CI
ERHA	162	11.5	9.7-13.3
MHB	19	8.8	4.8-12.8
MWHB	32	9.4	6.2-12.7
NEHB	24	7.1	4.3-9.9
NWHB	12	5.1	2.2-8.0
SEHB	49	11.7	8.4-14.9
SHB	77	13.1	10.2-16.1
WHB	33	8.6	5.6-11.5
Ireland	408	10.4	9.4-11.4

diagnosed with TB was 44.6 years with a range from less than one year of age to 94 years (age was not recorded in one case). Almost a quarter (22.8%) of cases occurred in those aged 65 and over (n=93). The highest age-specific incidence rates were observed in those over 65 years (at 21.3/100,000 population). The age- and sex-specific incidence rates per 100,000 population in Ireland, in 2002 are illustrated in figure 1, while figure 2 presents the age-standardised incidence rates (per 100,000 population) in Ireland by health board in 2002.

Geographic origin

One hundred and twenty three (30.1%) of the patients diagnosed with TB in 2002 were born outside Ireland. Forty nine cases were born in Africa, 44 in Asia, 25 in Europe, three in South America and one in North America. The country of origin was unknown in one case. The crude incidence rate among the indigenous population was 7.8/100,000 population in 2002.

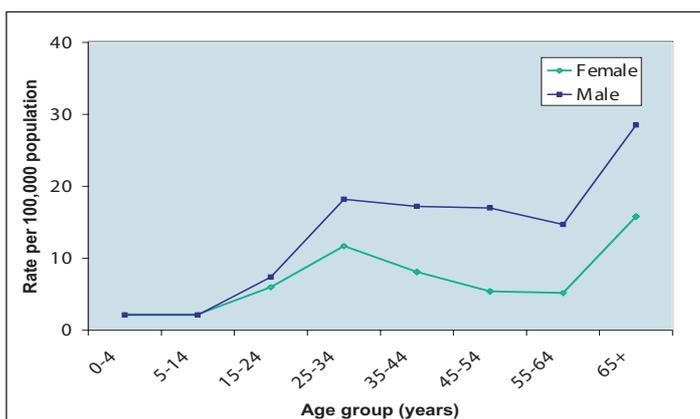


Figure 1: Age- and sex-specific TB incidence rates in Ireland, 2002

Table 3: Diagnostic categories of TB cases notified in 2002, by health board

Health Board	Pulmonary	Extrapulmonary	Pulmonary + extrapulmonary	Unknown	Total
ERHA	109	36	17	0	162
MHB	12	4	0	3	19
MWLB	15	12	4	1	32
NEHB	11	5	4	4	24
NWHB	10	1	1	0	12
SEHB	33	10	6	0	49
SHB	54	20	3	0	77
WLB	24	7	2	0	33
TOTAL	268	95	37	8	408

Diagnostic details

Of the 408 TB notifications, 249 (61%) were definite cases which were culture confirmed. Of the 249 culture-confirmed cases, 234 (97.9%) of the isolates were *M. tuberculosis* and five (2.1%) were *M. bovis*. The isolate was not specified in 10 culture positive cases.

Two hundred and sixty eight cases were pulmonary (65.7%), 95 cases were extrapulmonary (23.3%) and 37 cases were pulmonary and extrapulmonary TB (9.0%). In eight cases, the TB site was unspecified (2%). Of the 305 TB cases with a pulmonary disease component, 122 (40%) were sputum positive by microscopy. The diagnostic breakdown in each health board is shown in table 3.

There were six cases of TB meningitis reported in 2002 giving an incidence rate of 1.5 cases per million. There were two cases reported in 2001, six cases in 2000, seven cases in 1999 and six cases in 1998. The cumulative crude incidence rate of TB meningitis in Ireland from 1998-2002 was 6.9/100,000 (based on 2002 census of population).

Resistance

Resistance was documented in ten cases out of a total of 234 *M. tuberculosis* isolates (4.3% of *M. tuberculosis* isolates). Mono-resistance to isoniazid was recorded in eight cases and mono-resistance to streptomycin in one case. One further case was resistant to both isoniazid and streptomycin. Seven of the drug-resistant cases were born outside Ireland. In 2002, no multi-drug resistant TB cases (defined as resistance to at least isoniazid and rifampicin) were notified.

Outcome

Of the 408 cases notified in 2002, the outcome was recorded in 315 cases (77.2%). Two hundred and fifty nine of the 315 cases (82.2%) completed treatment. Sixteen patients (5.1%) were recorded as being lost to follow up. There were 30 deaths (9.5%) recorded, of which five (1.6% of cases with outcome data recorded) were attributed to tuberculosis. Treatment was interrupted in five cases (1.6%) and five cases were continuing to receive treatment at the time of reporting (1.6%). Of the 117 smear positive cases of pulmonary TB notified in 2002, 91 completed treatment, seven died, four were lost to follow up and one was still on treatment at time of reporting. The outcome was unknown in 14 cases.

A summary profile of the epidemiology of TB in Ireland from 2000 to 2002 is shown in table 4.

Discussion

Four hundred and eight cases of tuberculosis were notified in

Table 4. Summary of epidemiology of TB in Ireland, 2000 – 2002

	2000	2001	2002
Total number of cases	395	381	408
Notification rate per 100,000 population	10.1	9.7	10.4
% foreign born TB patients	11.1% (n=44)	16.5% (n=63)	30.1% (n=123)
% culture positive patients	58	58.8	61
<i>M. tuberculosis</i>	222	204	234
<i>M. bovis</i>	2	7	5
<i>M. africanum</i>	3	1	0
% smear positive pulmonary cases	47.2	44.4	38.4
Mono-resistance to isoniazid	2	4	8
Mono-resistance to streptomycin	1	3	1
Mono-resistance to pyrazinamide	1	1	0
Multi-drug resistant cases	2	2	0
Deaths attributed to TB	6	5	5

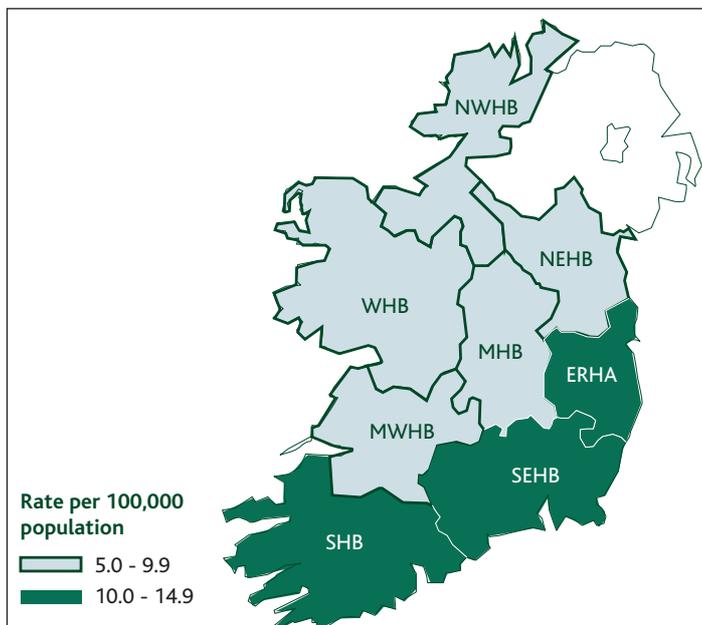


Figure 2: Age standardised incidence rates (per 100,000 population) in Ireland by health board, 2002

2002 giving a national crude incidence rate of 10.4/100,000 population. When compared with 2001 figures, there was a 7.1% increase in the TB notifications in 2002. Despite this increase, the three year moving average continues to show a general downward trend over the past number of years (table 1).

Differences in age standardised TB incidence rates persist between health board areas (figure 2). In 2002, the SHB had the highest rates of TB (13.1/100,000) followed by SEHB (11.7/100,000) and ERHA (11.5/100,000). In 2001, the highest rates were seen in the SHB and ERHA while in 2000, rates were highest in the MWLB and the SHB. In 2002, rates were below the national average in the NWHB (5.1/100,000).

When compared with previous years, 2002 saw an increase in the percentage of cases born outside Ireland. One hundred and twenty three cases (30.1%) were born outside Ireland in 2002, compared to 63 cases (16.5%) in 2001, 45 cases (11.1%) in 2000 and 65 cases (13.9%) in 1999. However, the percentage of foreign born cases reported in Ireland in 2002 remains lower than other Western European countries. For example, in 2002, in Belgium, France, Germany and the United Kingdom where crude incidence rates (9.3-12.6 per 100,000 population) are similar to those reported in Ireland (10.4/100,000) the percentage of cases of foreign origin ranged from 38.1% to 55.3%.²

Over the past number of years, the quality of data in Ireland has improved steadily. The percentage of cases reported with outcome data included was 77.2% in 2002. This represents an increase of approximately 17% on percentage of outcome data available in 2001 and 2000. This has facilitated more accurate analyses of TB data. It is of critical importance to TB control in Ireland that surveillance of TB be maintained at a high level, in view of the increased incidence of tuberculosis, and in particular, multi-drug resistant forms, worldwide.

Micheal Carton, Lorraine Hickey and Joan O' Donnell, NDSC

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Mumps Outbreak

Mumps is an acute systemic viral illness characterised by parotitis and is caused by paramyxovirus. It is a notifiable disease and is vaccine preventable by MMR. Complications such as meningitis and orchitis are common. In the pre-vaccine era there were frequent outbreaks of mumps among soldiers.

Mumps became a notifiable disease in 1988, the same year that the measles-mumps-rubella vaccine (MMR) was introduced into the Irish childhood immunisation programme. Since 1988, two major outbreaks have occurred, one in 1989 and the other in 1996-1997. The inter-epidemic incidence rate was low (approximately 40 cases being reported annually). However, in the first weeks of November 2004 there was an increase in the number of mumps cases notified, with 53 cases reported in week 44 and 41 cases in week 45. To date, for weeks 1-45, 2004 a total of 153 mumps cases have been reported to NDSC.

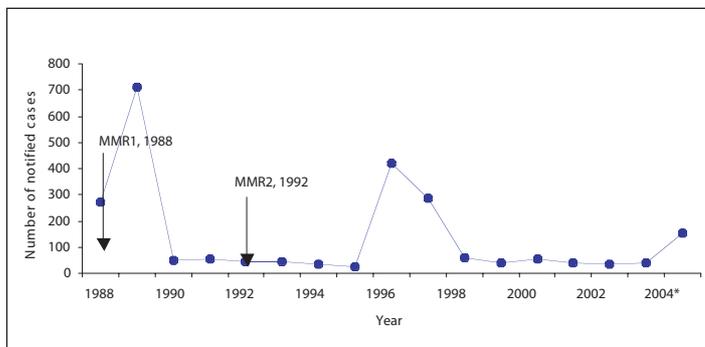


Figure 1. Mumps notifications in Ireland, 1988- week 45, 2004

Three major outbreaks, located in the North Western Health Board, Midland Health Board and Eastern Regional Health Authority regions, have contributed to the initial increase in incidence. Two of these outbreaks (MHB and ERHA) predominantly involve students attending third level educational colleges. The outbreak in the NWHB reflects both college and community transmission. Additional cases have been recognised in other educational colleges with increased surveillance.

Epidemiology

In the current outbreak (weeks 44-45) the median age of cases was 20 years (range 2-54 years); 56 were male (60%); approximately 70% of cases appear to have links with a number of colleges. Vaccination status was not known for most cases.

Discussion

The current outbreak is affecting predominantly teenagers and young adults. Because of their age, this group are likely to have received either none, or only one MMR vaccine. In the past decade there has been increasing recognition of the need for two doses of MMR vaccine to prevent outbreaks. MMR vaccine is approximately 95% effective in preventing mumps infections. Two doses of MMR vaccine

are routinely recommended for all children.

In 1988, MMR vaccine was recommended as part of the early childhood vaccination schedule. In 1992, MMR vaccine was recommended to school children aged 11-12 years of age. In 1999, the age for school based MMR was dropped to 4-5 years of age.

As most students in 3rd level colleges are between the ages of 16-24 years of age, many of these students are likely to have had only one MMR vaccine or none at all (if they missed or declined vaccination when offered in school). The fact that this outbreak is currently occurring among those too old to have availed of at least two doses of vaccine reflects the importance of the two-dose recommendation.

Because of the decrease in MMR uptake in recent years it is likely that there is a large proportion of young children/school children who have not received at least two doses of MMR vaccine. Parents should be encouraged to ensure that their children are fully vaccinated.

Actions

The following actions are being undertaken to control the outbreak:

- A national outbreak control team was convened.
- In institutions where outbreaks are occurring MMR is being recommended to students without a history of two MMR vaccines.
- A number of health boards are prioritising enhanced reporting of mumps cases to identify risk factors for infection, vaccination status, and morbidity associated with infection. This will allow an accurate epidemiological analysis of the current outbreak and direct future recommendations.
- Parents of all children are encouraged to ensure that their children are up to date on their vaccinations (two doses of MMR vaccine).
- To prevent transmission and protect workers in health care settings, health care workers born after 1978 who have not got evidence of immunity to the viruses measles, mumps, rubella should be given two doses of MMR, separated by at least one month.¹

Acknowledgements

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