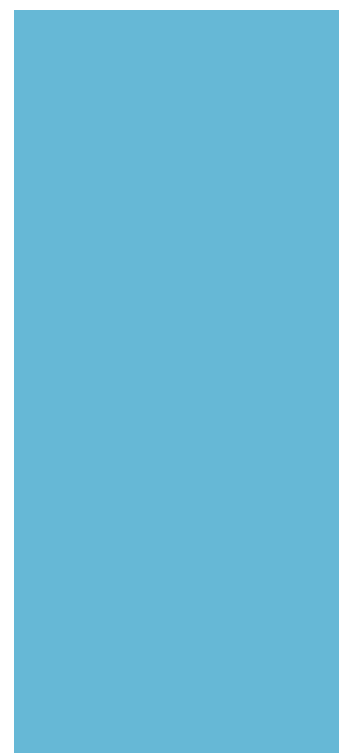
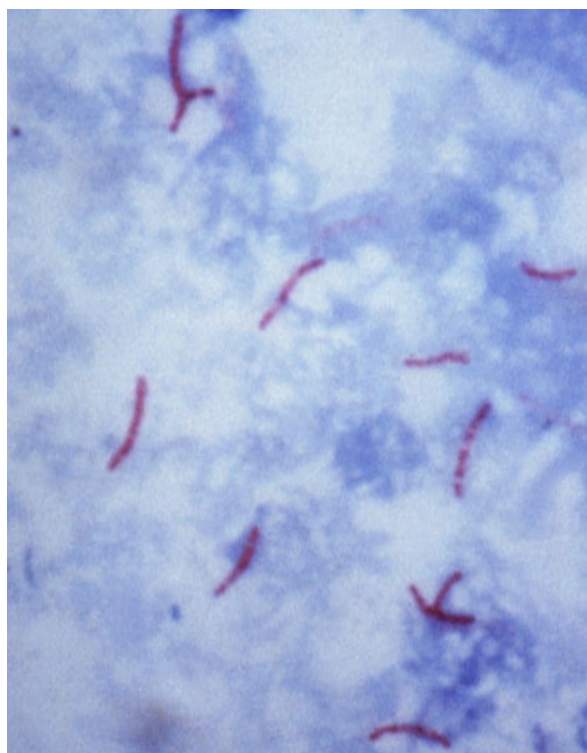
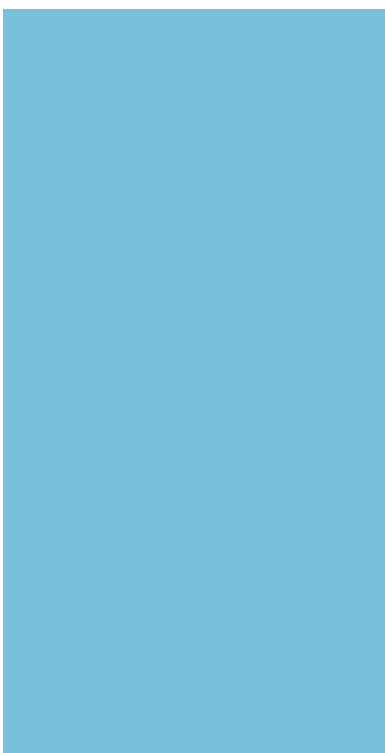
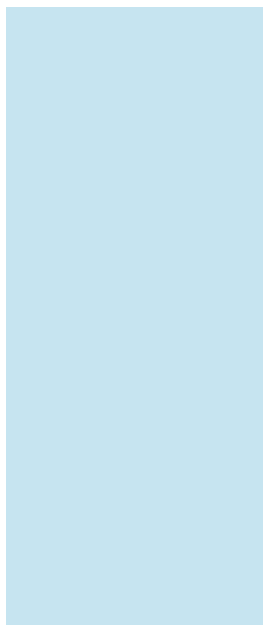
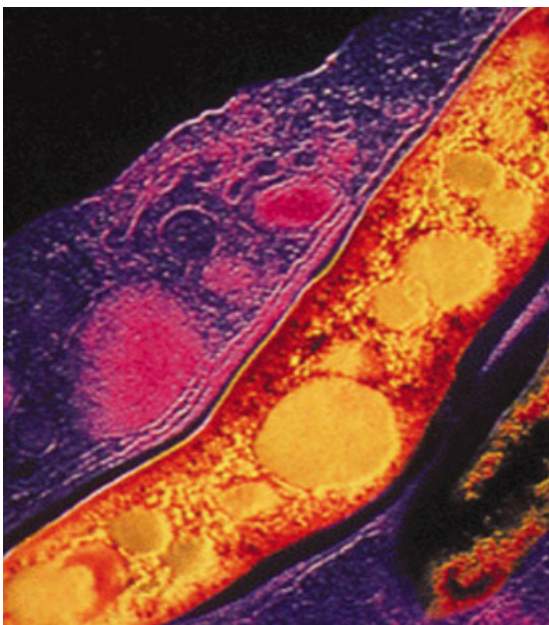


Epidemiology of Tuberculosis In Northern Ireland

Annual surveillance report 2006



Surveillance of Tuberculosis in Northern Ireland

2006

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Summary

- There were 61 tuberculosis cases notified in 2006, giving a Northern Ireland rate of 3.5/100,000 population. This contrasts with 75 notifications in 2005 (4.4/100,000).
- Rates of TB in Northern Ireland remain approximately three times lower than for England and Wales.
- The Southern Health and Social Services Board (SHSSB) had the highest rates of TB IN 2006.
- Forty-three (70%) cases had pulmonary TB of which 16 were smear positive.
- There were no notified cases of tuberculosis in children under 15 years in 2006.
- The proportion of cases diagnosed with TB during 2006 born outside the UK/Ireland was 38% - an increase from 2005 (26% born abroad).
- Of 45 isolates of *M. tuberculosis*, two were resistant to at least rifampicin and isoniazid (Multi-drug resistance) and one was resistant to isoniazid only.
- Six healthcare workers were notified with tuberculosis.
- There were three culture confirmed cases of *M. bovis*, all of whom had no obvious risk factors.

Introduction

In the United Kingdom, clinicians and public health staff collectively work together at local level to collect detailed clinical and demographic information on tuberculosis cases, which is reported to the enhanced surveillance scheme. Clinicians in Northern Ireland, similar to those throughout the UK, are required to notify all cases of tuberculosis to the Director of Public Health of the Health and Social Services Board (HSSB) of residence.

Notification forms (TBS1) are completed by clinicians, recording all available demographic, clinical, microbiological, histological and epidemiological details. In order to facilitate the export and central collation of data for England, Wales and Northern Ireland, outcome data is collected across all three regions of the UK on a standardised 'Tuberculosis Treatment Outcome Surveillance Form' (TBS2). This form has been customised for Northern Ireland use to facilitate collection of drug treatment and outcome data - together with any additional clinical and/or microbiological information not available at the time of initial notification.

If *M. bovis* infection is identified in a notified patient, an additional questionnaire is forwarded to the Consultant in Communicable Disease Centre (CCDC) in the patient's Board of residence. Once completed, the form is returned to CDSC (NI). This questionnaire collects data on: case background information, travel history, un-pasteurised milk/milk product consumption and occupational details (including animal contact).

This report presents the epidemiological data for tuberculosis cases reported in Northern Ireland (NI) from 1st January 2006 to 31st December 2006. As the data collection process can only be completed 12 months after the initial notification, an annual epidemiological report does not normally become available until 18 months after the end of the reporting period. The data provides information for inclusion in national, European and WHO reports, as well as for disease surveillance at a local level. Provisional data for 2007 is included where relevant.

Definitions

Notified case: Refers to clinically active disease, caused by or thought to be caused by, infection with organisms of the *Mycobacterium tuberculosis* complex (*M. tuberculosis*, *M. bovis*, *M. africanum*).

Culture confirmed cases: Where the diagnosis has been confirmed by culture as *M. tuberculosis*, *M. bovis* or *M. africanum*.

Other than culture confirmed cases: In the absence of culture confirmation, a case that meets the following criteria: “A clinician’s judgement that the patient’s clinical and/or radiological signs and/or symptoms are compatible with tuberculosis *and* a clinician’s decision to treat the patient with a full course of anti-tuberculosis treatment”.

Pulmonary tuberculosis: Defined as a disease involving the lung parenchyma and/or tracheo-bronchial tree, but **excludes** pleural and intra-thoracic lymph node disease unless lung parenchyma and/or bronchial tree are also involved.

Sputum smear result: Sputum smear positive tuberculosis is defined as a positive microscopy result on spontaneously produced or induced sputum.

Multi-drug resistance (MDR): is defined as resistance to at least isoniazid and rifampicin.

Methods

Data collection

Completed TB notification forms are forwarded to CDSC (NI) where the information is entered onto a secure database. Treatment outcome forms are generated and forwarded, approximately nine months after initial notification, to the CCDC of the relevant HSSB for completion by the patients' clinician, who then return it to CDSC(NI).

Information on *Mycobacterium tuberculosis* complex isolates are obtained from local hospital diagnostic laboratories and the mycobacterial reference laboratory. Collected data include species (*Mycobacterium tuberculosis*, *M. bovis* and *M. africanum*) and drug susceptibility.

Data on cause of death, including tuberculosis, is also collected from the Northern Ireland Statistics and Research Agency (NISRA) as a completion for outcome.

Datasets are validated (using laboratory reports and anti-microbial susceptibility information), updated and analysed.

Data Analysis

Data are entered and analysed using the HPA Regional Module for Enhanced TB Surveillance database (version 3.0). Tuberculosis rates per 100,000 population stratified by age, sex and HSSB were calculated using the mid-year estimates from Northern Ireland Statistics and Research Agency (NISRA).

Results

Overall number of cases and rates.

A total of 66 cases were reported through the surveillance scheme in Northern Ireland during 2006. Of these 66 cases; four were laboratory confirmed as an infection with a mycobacterium other than tuberculosis (MOTT), and one other case was diagnosed as having an illness other than tuberculosis. These five patients, were de-notified but remained recorded in the dataset and were excluded from the main analysis, giving a total of 61 cases of tuberculosis notified in 2006 for Northern Ireland. This represents a rate of 3.5/100,000 population, which is slightly lower than 2005 (4.4/ 100,000).

Follow-up information (Treatment Outcome forms and/or death certificates) was provided for 58 (95%) cases (Table 1).

TABLE 1: Enhanced TB surveillance notification forms submitted in Northern Ireland, 2006			
HSSB	TBS1	Follow-up	Follow-up/TBS1 (%)
EHSSB	27	24	89
NHSSB	11	11	100
SHSSB	15	14	93
WHSSB	8	8	100
Total	61	57	93

Of the 61 notified cases of tuberculosis, 48 (79%) were culture confirmed. Forty-five of the isolates were identified as *M. tuberculosis* and three as *M. bovis*. Thirteen cases were notified on the basis of clinical or non-culture diagnosis and response to anti-tuberculosis therapy. Of these thirteen cases, seven were confirmed by histological examination of lymph node, lung tissue or peritoneal fluid.

Table 2: Tuberculosis cases Northern Ireland 2006				
HSSB	Confirmed (all notified)	Non-culture confirmed (all notified)	Total (all notified)	Rate per 100,000
EHSSB	21	6	27	4.2
NHSSB	7	4	11	2.5
SHSSB	14	1	15	4.5
WHSSB	6	2	8	2.7
Total	48	13	61	3.5

Of the 61 tuberculosis cases, 36 were male and 29 were female, giving a sex ratio M/F of 1.2 (a slight decrease in the ratio of 1.3 recorded in 2005). The ages ranged from 17 to 96 years with a median of 54 years and a mean of 53 years. The age-sex distribution is shown in Figure 1. While the EHSSB has the highest proportion of cases, the SHSSB continues to have the highest incidence rate of tuberculosis (Table 2).

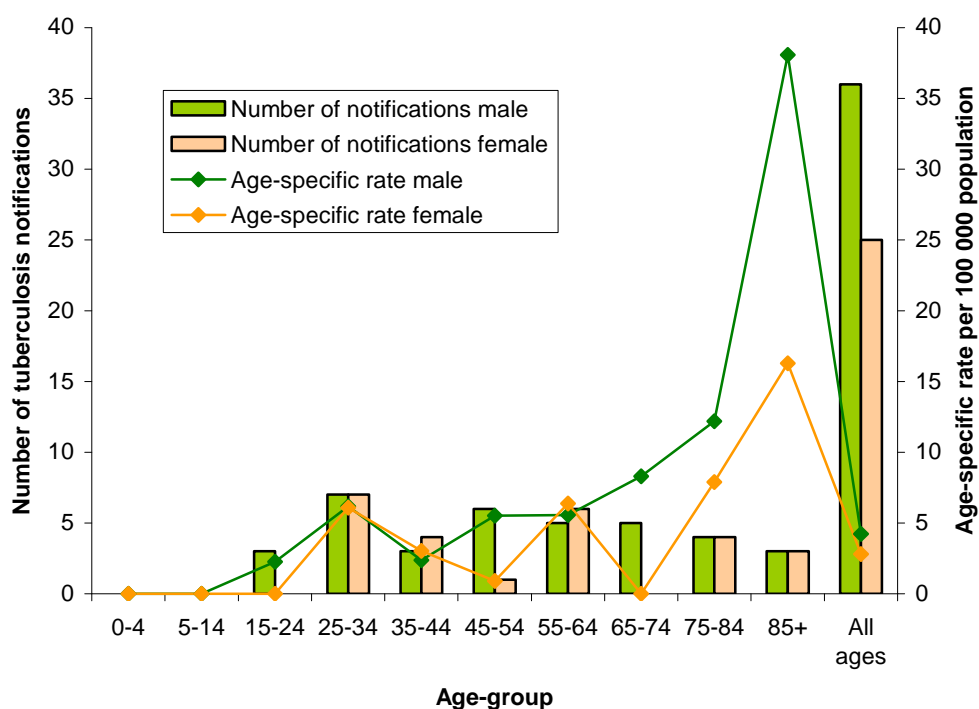


Figure 1: Notified cases of tuberculosis by age and sex, and age-specific rates per 100,000 population, Northern Ireland, 2006.

The highest proportion of cases for both males and females were recorded in the 25-34 year age-group. Similar to 2005, the highest age-specific rate for both male and female patients occurred in those aged over 75 years. However, unlike previous years there were no notified cases of tuberculosis in children under 15 years in 2006 (Table 3a and 3b).

Table 3a: Rates of notification of tuberculosis per 100,000 population in Northern Ireland by age and sex, 2006			
Age-Group	Male	Female	Total
0-4	0.0	0.0	0.0
5-14	0.0	0.0	0.0
15-24	2.3	0.0	1.2
25-34	6.2	6.1	6.1
35-44	2.4	3.0	2.7
45-54	5.5	0.9	3.2
55-64	5.6	6.4	6.0
65-74	8.3	0.0	3.9
75-84	12.2	7.9	9.6
85+	38.1	16.3	22.8
Total	4.2	2.8	3.5

Table 3b: Tuberculosis notifications in Northern Ireland by age and sex 2006		
Age-Group	Male	Female
0-4	0	0
5-14	0	0
15-24	3	0
25-34	7	7
35-44	3	4
45-54	6	1
55-64	5	6
65-74	5	0
75-84	4	4
85+	3	3
Total	36	25

In 2006, the country of birth was recorded for all but one of the 61 notified cases. Thirty-seven (62%) were known to have been born in the United Kingdom/ Ireland and the remaining 23 (38%) cases known to have been born elsewhere. Of these twenty-three cases; nine were born in the

Indian sub continent, seven in SE Asia, three from Africa and the remainder were born in Europe. In the ten years between 1992 and 2002, an average of 10% of all notified individuals were known to be born outside the UK/ Ireland. This proportion has been steadily increasing, accounting for 26% in 2005 and 38% in 2006.

Information regarding previous tuberculosis infection was recorded for all the 61 notified cases during 2006. Seven (11%) individuals ranging in age between 26-80 years, with a mean age of 59 and median of 62, were reported to have a previous history of tuberculosis. Of these seven cases, time interval data from the current date of onset and the previous tuberculosis infection episode was available for five of the individuals. The time period ranged from 2-60 years, with an estimated mean of 38 years and a median time interval of 50 years.

Site of the disease:

Pulmonary tuberculosis cases

Of the 61 notified cases, 43 (70%) were diagnosed with pulmonary tuberculosis and 36 (84%) of the 43 cases were confirmed by culture (32 *M. tuberculosis* and two *M.bovis*). Sixteen (37%) of the 43 pulmonary tuberculosis cases notified during 2006 were found to be sputum smear positive at the time of notification and all were, subsequently, confirmed by culture as being *M.tuberculosis* (Table 4). This is similar to 2005 when 39% of pulmonary tuberculosis cases notified were found to be sputum smear positive.

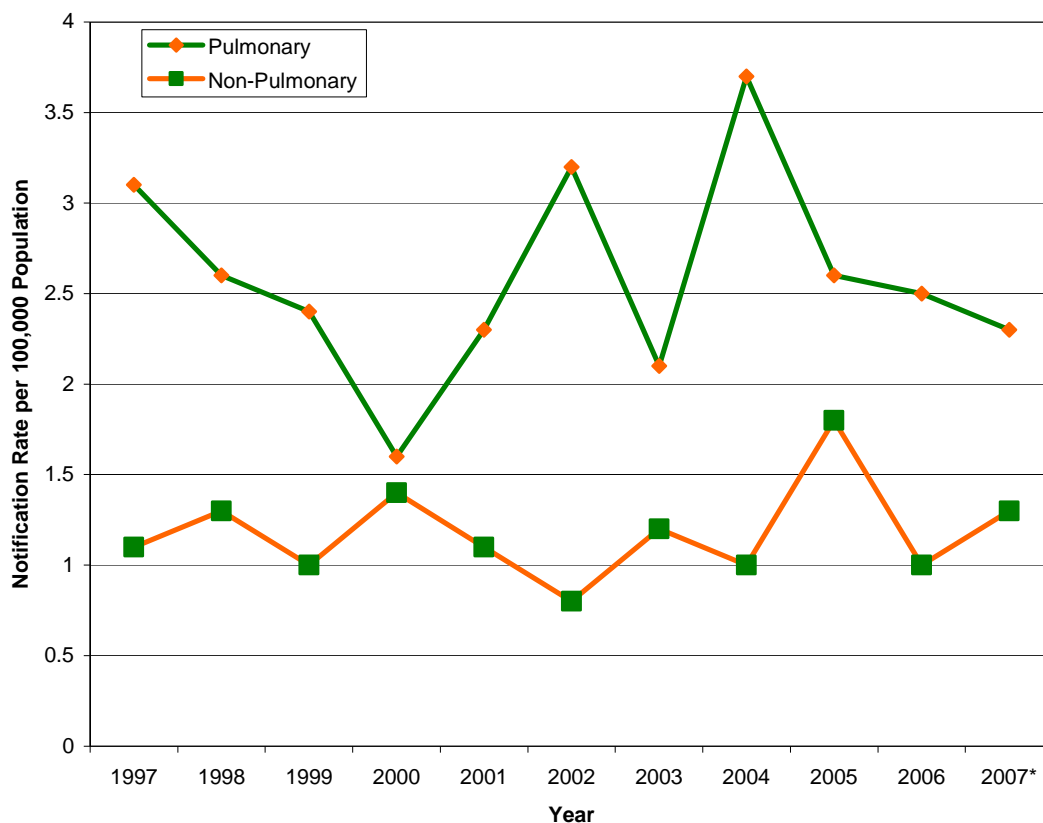
Provisional data for 2007 indicates that of 40 pulmonary cases, 34 (85%) were culture positive and 21 (53%) were smear positive.

Table 4: Pulmonary tuberculosis notifications in Northern Ireland by HSSB, 2006				
HSSB	Confirmed	Non-culture confirmed	Total	Rate per 100,000
EHSSB	16	4	20	3.0
NHSSB	6	1	7	1.6
SHSSB	9	1	10	3.0
WHSSB	5	1	6	2.0
Total	36	7	43	2.5

Eighteen pulmonary tuberculosis cases in 2006 were sputum smear negative at the time of notification. Thirteen were subsequently confirmed by culture (11 *M. tuberculosis* and 2 *M.bovis*). The outcome of sputum smear testing was not recorded for the remaining nine pulmonary tuberculosis cases. However, alternative samples (bronchoscopy or bronchial tree tissue) were obtained from seven of these nine cases, all of which were found to be culture positive for *M. tuberculosis*.

Outcome information was available for 39 (91%) of pulmonary tuberculosis notifications. Twenty-five (58%) of the 43 pulmonary tuberculosis cases notified during 2006 successfully completed a full course of anti-tuberculosis treatment. One patient was still on treatment at the time of completion of the outcome form and was intolerant to drugs. Two patients were lost to follow up and 11 patients were diagnosed at post mortem or died soon after treatment commenced. Tuberculosis was cited as the primary cause of death in one of these 11 patients and as a contributing factor in the death of two further patients. Treatment outcome forms were not completed for a further four patients.

The annual notification rate for pulmonary tuberculosis in Northern Ireland during 2006 was similar to 2005 (2.6 / 100,000) at 2.5 cases per 100,000 population (Table 4, Figure 2). The provisional rate for 2007 is 2.3/100,000.



**2007 data provisional*

Figure 2: Rates of pulmonary and non-pulmonary tuberculosis per 100,000 population, Northern Ireland by year

Of the 43 pulmonary tuberculosis notified cases; 31 (72%) were male, of which 27 were culture confirmed cases. The remaining 12 (28%) cases were female of which nine were culture confirmed cases. The incidence of pulmonary tuberculosis was spread over a wide age range, for both men and women, with over half (53%) of all pulmonary cases occurring in those over 55 years of age. (Figure 3). Similar to previous years the age-sex distribution shows that the highest age-specific rates for pulmonary tuberculosis continues to be recorded in older age-groups. During 2006, the highest age-specific rates occurred in the 85+ age-group for both men and women (Table 5 and Figure 3).

Table 5: Rates of notification of pulmonary tuberculosis per 100,000 population by age and sex, Northern Ireland, 2006			
Age-group	Male	Female	Total
0-4	0.0	0.0	0.0
5-14	0.0	0.0	0.0
15-24	2.3	0.0	1.2
25-34	3.5	3.5	3.5
35-44	2.4	0.8	1.5
45-54	4.6	0.0	2.3
55-64	5.6	4.3	4.9
65-74	6.6	0.0	3.1
75-84	12.2	3.9	7.2
85+	38.1	5.4	15.2
Total	3.6	1.4	2.5

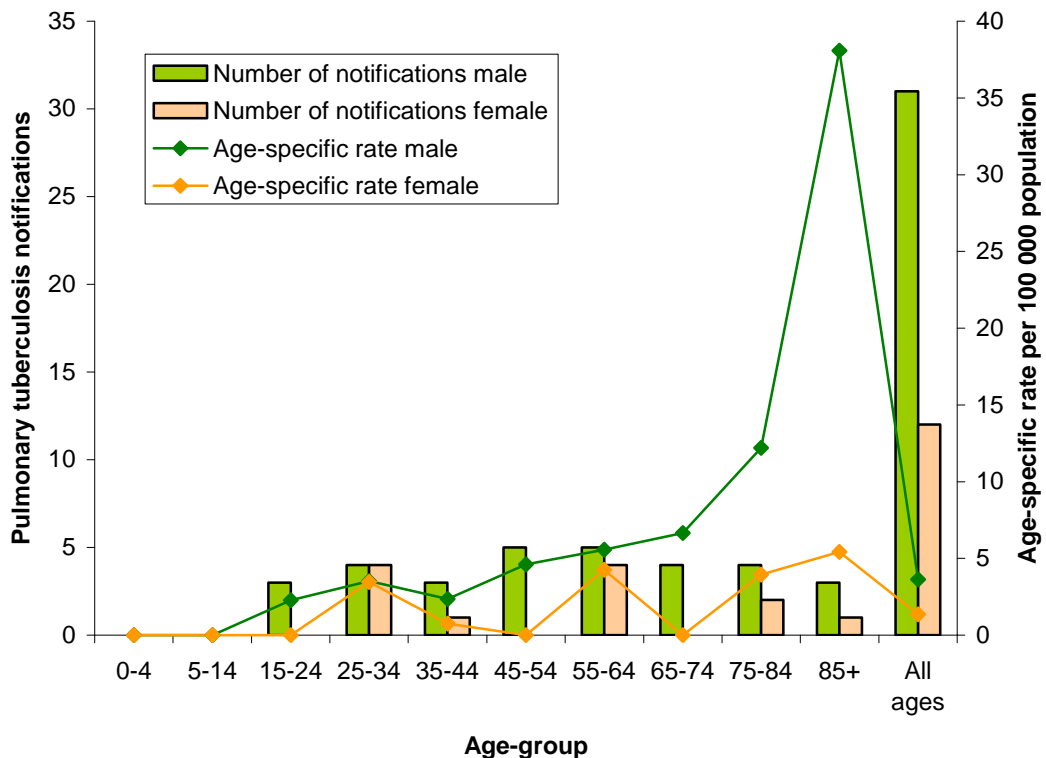


Figure 3: Notified cases of pulmonary tuberculosis by age and sex, and age-specific rates per 100,000 population in Northern Ireland, 2006

Non-pulmonary tuberculosis cases

Eighteen notifications of non-pulmonary tuberculosis were received during 2006. Twelve (67%) of these cases were culture confirmed: eleven with *M. tuberculosis* and one with *M.bovis* infection. The annual notification rate for non-pulmonary tuberculosis in 2006 was 1.0 case per 100,000 population, with the SHSSB having the highest incidence rate at 1.5 per 100,000 population (Table 6). This is a slight decrease from the figure recorded in 2005, when the annual rate for the SHSSB was 1.8 per 100,000 population.

HSSB	Confirmed	Non-culture confirmed	Total	Rate per 100,000
EHSSB	5	2	7	1.0
NHSSB	1	3	4	0.9
SHSSB	5	0	5	1.5
WHSSB	1	1	2	0.7
Total	12	6	18	1.0

Of the 18 non-pulmonary tuberculosis cases notified during 2006; five were male and thirteen were female, giving a M/F ratio of 1:2.6, compared with a M/F ratio of 1:1.2 in 2005. The ages ranged from 25 to 86 years with a median of 44 years and a mean of 50 years. The highest age-specific rate for non-pulmonary tuberculosis among males occurred in the 25-34 age group, and in women over 85 years (Table 7).

Table 7: Rates of notification of non-pulmonary tuberculosis in Northern Ireland per 100,000 population by age and sex, 2006			
	Male	Female	Total
0-4	0.0	0.0	0.0
5-14	0.0	0.0	0.0
15-24	0.0	0.0	0.0
25-34	2.6	2.6	2.6
35-44	0.0	2.3	1.2
45-54	0.9	0.9	0.9
55-64	0.0	2.1	1.1
65-74	1.7	0.0	0.8
75-84	0.0	3.9	2.4
85+	0.0	10.9	7.6
Total	0.6	1.5	1.0

The number of notified cases for both pulmonary and non-pulmonary tuberculosis, stratified by age-group can be seen in Figure 4.

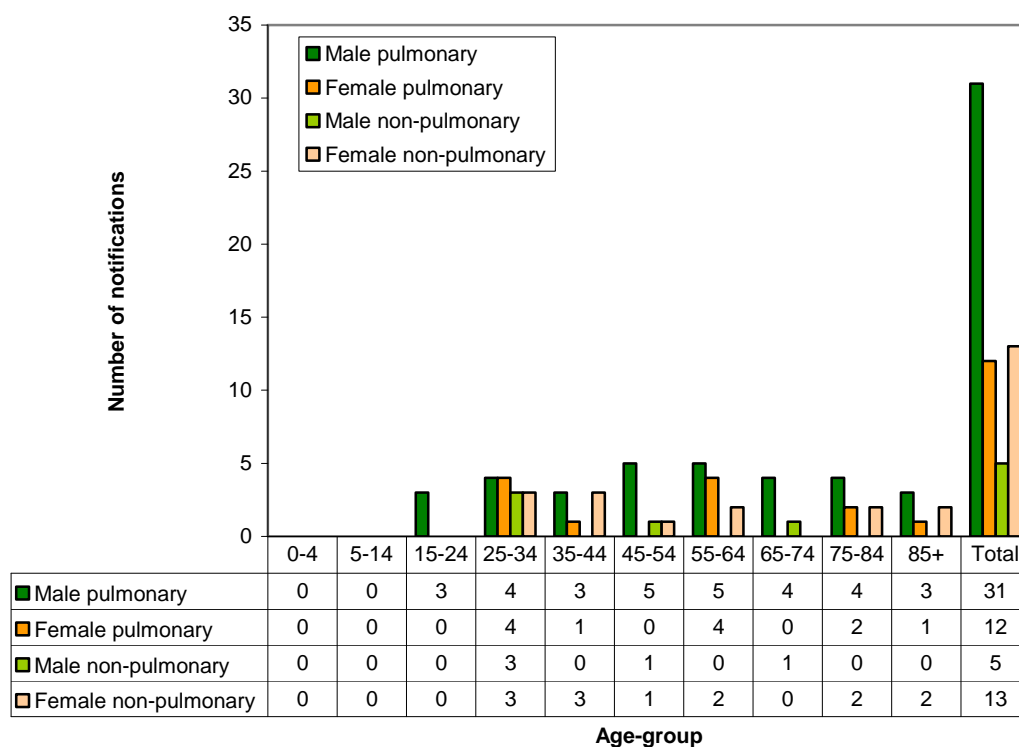


Figure 4: Notified cases of pulmonary and non-pulmonary tuberculosis by age and sex, in Northern Ireland, 2006

Anti-tuberculosis treatment:

Initial therapy

Initial therapy was recorded for 44 (72%) of the 61 tuberculosis patients notified in 2006. As in previous years the most commonly reported treatment regimen was the concurrent use of the four drugs; rifampicin, isoniazid, pyrazinamide and ethambutol (Table 8A).

TABLE 8A: Initial therapies employed for the treatment of tuberculosis in Northern Ireland, 2006	
Initial Therapy*	Number of cases
Rifampicin/Isoniazid/Pyrazinamide/Ethambutol	33
Rifampicin/Isoniazid/Ethambutol	3
Rifampicin/Isoniazid/Pyrazinamide	7
Isoniazid/Pyrazinamide**	1

* No details of drug therapy were recorded for 13 individuals notified with tuberculosis during 2006. Of these: seven were diagnosed at post mortem or died before their initial phase of therapy was complete
** this case also received Ofloxacin with the drugs above

Continuation therapy

In 2006, continuation therapy was recorded for 39 (64%) of tuberculosis cases. In all but one of these cases the treatment regimen was a combination of rifampicin and isoniazid (Table 8B)

TABLE 8B: Continuation therapies employed for the treatment of tuberculosis in Northern Ireland, 2006

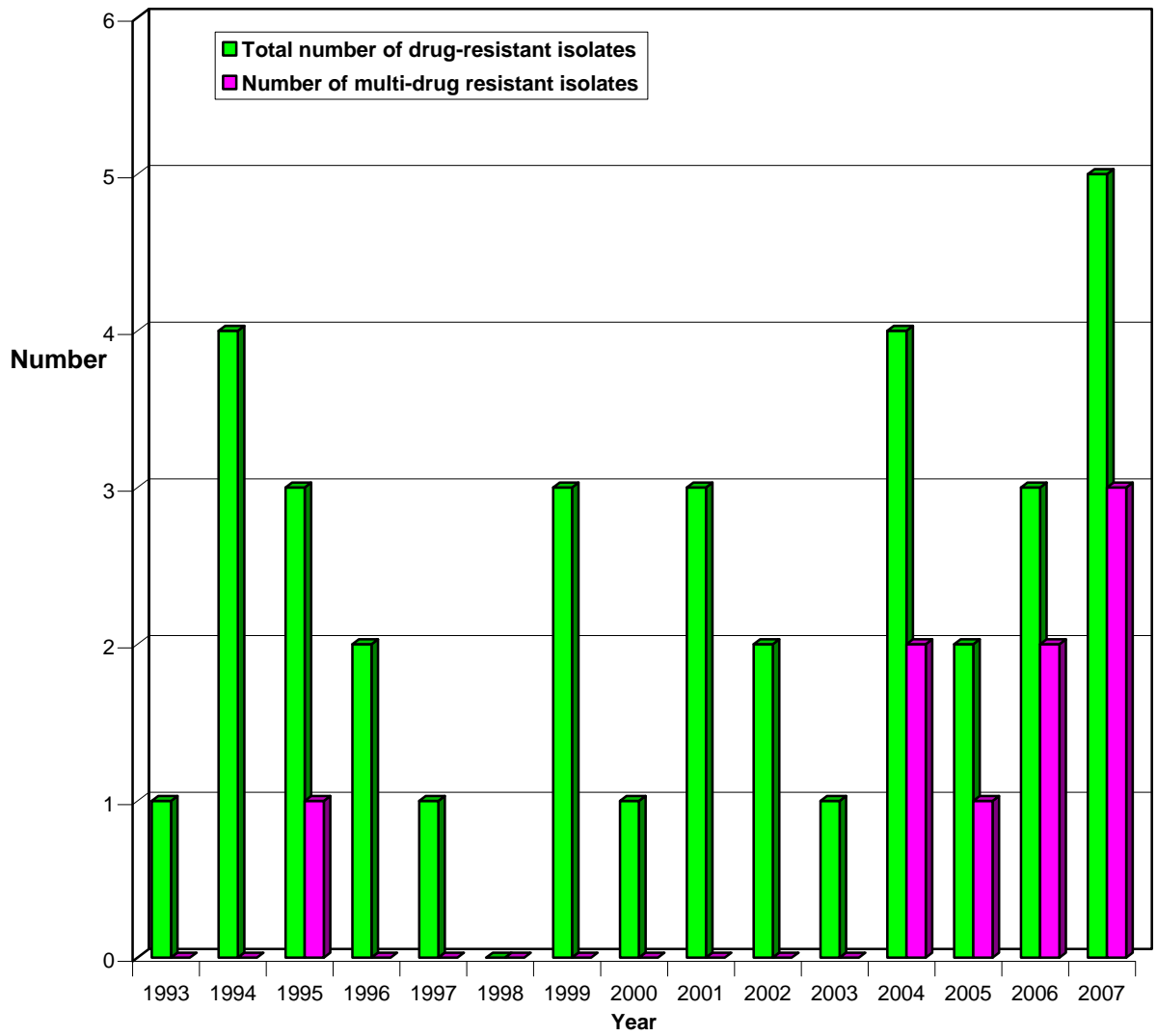
Continuation Therapy	Number of cases
Rifampicin/Isoniazid	37
Rifampicin/Isoniazid/Ethambutol	1
Rifampicin/Pyrazinamide/Ethambutol	1

Surveillance of mycobacterial isolates susceptibility to anti-tuberculosis drugs in 2006

Antimicrobial susceptibility information was received on 44 of the 45 *M. tuberculosis* isolates, 34 of which were pulmonary. Antimicrobial susceptibility data was available on one *M. bovis* (pulmonary) isolate.

Two *M. tuberculosis* pulmonary isolates were found to be resistant to both isoniazid & rifampicin (MDR). Both patients were born outside the UK. One *M. tuberculosis* pulmonary isolate was found resistant to isoniazid only and as expected the *M. bovis* isolate was found to be pyrazinamide resistant.

The number of *M. tuberculosis* drug resistant isolates during 2006 has increased marginally compared with 2005 (Figure 5). Provisional data for 2007, indicates one case having resistance to isoniazid and three MDR. MDR isolates have been reported for each of the years 2005-2007.



* 2007 data is provisional

Figure 5: Incidence of drug resistance in isolates of *M. tuberculosis* Northern Ireland, 1995-2007

Incidence of *M. bovis* infection in Northern Ireland:

There were three culture confirmed cases of *M. bovis* in 2006, of which two were pulmonary. All three cases were aged over 50 years. None were sputum smear positive at the time of notification. In the absence of reported risk factors it is assumed these cases are the result of reactivation which would be consistent with the age profile. With the exception of 2005 when there were five cases, the number of *M. bovis* cases in Northern Ireland has remained fairly constant.

Tuberculosis in Healthcare Workers:

In 2006 there were six healthcare workers notified with tuberculosis, approximately 10% of all notified cases: one case was pulmonary and five cases were non-pulmonary. Provisional data for 2007 indicates eight healthcare worker notifications: of which seven are culture confirmed and two are pulmonary. The proportion of notified cases for tuberculosis in healthcare workers in Northern Ireland has been increasing from 1997 (Table 9).

Table 9: Number of tuberculosis notifications and proportion (%) among Health Care Workers, 1997-2008			
Year	Total number cases	Number of HCW cases	%
1997	70	1	1
1998	66	0	0
1999	57	1	2
2000	51	1	2
2001	55	2	4
2002	67	6	9
2003	57	2	4
2004	81	1	1
2005	75	8	11
2006	63	6	10
2007(provisional)	65	8	12

Of the six healthcare workers notified in 2006; four were born outside the UK/RoI. From 1997 to date the highest proportion (49%) of notified cases for tuberculosis in healthcare workers were born in India.

Discussion

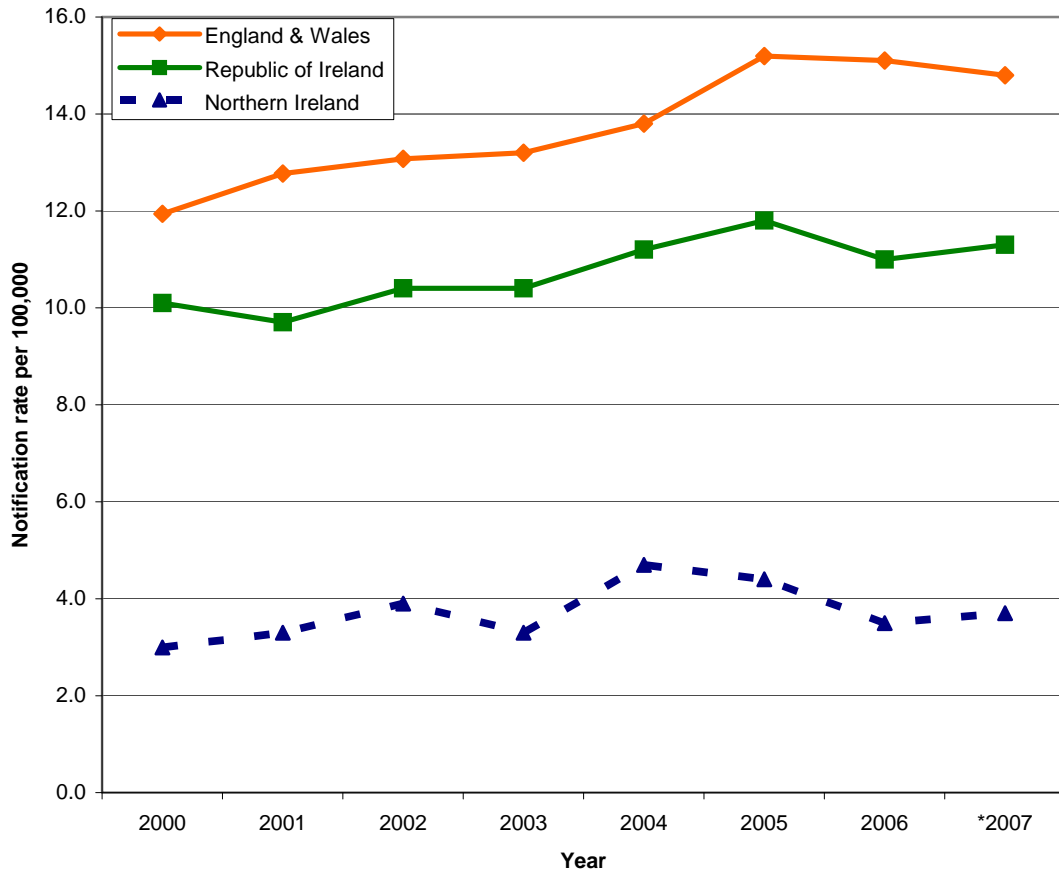
Enhanced surveillance of tuberculosis in England, Wales and Northern Ireland:

The overall notification rate for the Enhanced Surveillance of Tuberculosis in England, Wales and Northern Ireland has been steadily rising from the late 1980s. In 2000, the rate was 11.0 per 100,000 population, rising to 14.7 / 100,000 in 2005 and 14.6 / 100,000 in 2006 (Figure 6)

The 2006 notification rate in Northern Ireland (3.5/100,000) still remains at approximately one third of that recorded for the UK.

London still accounts for the highest rate (44.8/100,000) and proportion of cases accounting for 41% of all cases reported across England, Wales and Northern Ireland.

Provisional data from the Republic of Ireland for 2006 indicates a crude notification rate of 10.8/100,000 which is similar to the rate for 2005 (10.6/100,000). The highest crude incidence rates were in the Health Service Executive (HSE) southern region, with a rate of 16.3/100,000. The HSE regions bordering Northern Ireland had lower crude incidence rates (NW – 3.8/100,000 and NE – 8.1/100,000).



**2007 data provisional*

Figure 6 : Rate of tuberculosis per 100,000 population in England & Wales, Republic of Ireland and Northern Ireland 2000- 2007*

The number of notifications in Northern Ireland for 2006 is lower than the previous two years. From 1992, when enhanced surveillance of tuberculosis began in Northern Ireland, the notification rate was at its highest in 1994 at 5.3 per 100,000 population, conversely the lowest rate was in 2000 at 3.0 per 100,000 population (Table 10). Provisional analysis for 2007 indicates that the number and rate of notification has risen to 65 (3.7/100,000). From 2004, when the data was stratified by HSSB, the SHSSB continually has had the highest notification rates per 100,000 population of the four health boards.

Table 10: Number of tuberculosis notifications and rates per 100,000 population, Northern Ireland, 1992-2006		
Year	Number of cases	Rate
1992	71	4.4
1993	77	4.7
1994	87	5.3
1995	84	5.1
1996	78	4.7
1997	70	4.2
1998	66	3.9
1999	57	3.4
2000	51	3.0
2001	55	3.3
2002	67	3.9
2003	57	3.3
2004	81	4.7
2005	75	4.4
2006	61	3.5
2007 (provisional)	65	3.7

Incidence of tuberculosis in Northern Ireland by age:

In 2000, 53 % of tuberculosis notifications were in those aged over 65 years. However, from 2000 to 2005 the proportion of those that are 65+ years of age at the time of notification has been falling; by 2002 the figure was 42 % and, by 2005, it had fallen further to 28 %. The figures for 2006 are indicating a slight rise, with 31 % of notifications, in the over 65 age groups (Table 11a). The number of cases imported into Northern Ireland in 2006 has increased compared to previous years, with an estimated 38 % of total cases notified in this year, born outside of the UK or Ireland (Table 11b).

Table 11a: Mean and median ages of all tuberculosis cases notified, Northern Ireland, 2000-2006				
Year	Total number of cases notified	Age range	Mean age	Median age
2000	51	2-99	61.0	68.0
2001	55	3-92	55.0	58.0
2002	67	2-94	53.8	56.0
2003	57	1-89	52.8	53.0
2004	81	0-90	45.8	51.0
2005	75	0-87	48.5	49.0
2006	61	17-96	53.0	53.5
2007 (provisional)	65	19-88	45.4	39

Table 11b: Mean and median ages of tuberculosis cases known <i>not</i> to be born in UK or Ireland, Northern Ireland 2000-2006						
Year	Total number of notified cases	Known <i>not</i> to be born in UK/Ireland				
		Number of cases	Percentage of total cases (%)	Age Range	Mean age	Median age
2000	51	4	7.8%	32-43	39	41
2001	55	7	12.7%	27-85	41.7	34
2002	67	9	13.4%	24-49	37.6	38
2003	57	12	21.1%	21-44	34.1	35
2004	81	25	30.9%	19-73	34.1	28
2005	75	19	25.3%	13-65	30.9	27
2006	61	23	37.7%	17-73	33.7	33
2007 (provisional)	65	34	54.8%*	19-46	31	30

* In 2007 the country of birth was not known for 2 cases, % figures based on 62 cases

The average age at time of notification, of cases known to have been born in the UK or Ireland, between 2000 and 2003 fell by 7 years between these years and by a further 6 years between 2003 and 2004. However, this trend appears to be changing as evidenced by data from 2005 / 2006. Interestingly, the age range for both 2006 and 2007 to date is narrower than in previous years, with no individuals notified under the age of 20 years (Table 11c). The number of cases of TB from within the UK/Ireland fell to its lowest level since 2001. The ages of those notified born outside the UK/Ireland are significantly lower (approximately 20 years), than those born within UK/Ireland. This continues the trend from previous years.

Table 11c: Mean and median ages of tuberculosis cases known to be born in UK or Ireland, Northern Ireland 2000-2006						
Year	Total number of notified cases	Known to be born in UK/Ireland				
		Number of cases	Percentage of total cases (%)	Age Range	Mean age	Median age
2000	51	43	84.3	2-99	64.6	70
2001	55	36	65.5	3-85	57.8	64
2002	67	58	86.6	2-94	56.4	62
2003	57	45	78.9	1-89	57.8	66
2004	81	55	67.9	0-90	51.6	56
2005	75	55	73.3	0-87	54.9	58
2006	61	38	62.3	21-96	64.7	62
2007 (provisional)	65	29	46.8%*	39-88	63.03	65

* In 2007 the country of birth was not known for 2 cases, % figures based on 62 cases

Pulmonary TB cases in Northern Ireland

The rate of pulmonary TB notifications in 2006 remained similar to that recorded in 2005 (2.5/100,000 and 2.6/100,000, respectively). Similar to previous years both the SHSSB and EHSSB had the highest rate at 3.0/100,000. However, since 2004 the rates of pulmonary TB have been declining in three of the four health boards in Northern Ireland with the exception of the WHSSB where the rate has fluctuated. The WHSSB rate was 2.1/100,000 population in 2004, decreasing to 1.0/100,000 population in 2005 and subsequently increasing to 2.0/100,000 in 2006.

The proportion of males with pulmonary TB in 2006 was higher than previous years at 72% compared with 66% and 69% in 2005 and 2004, respectively.

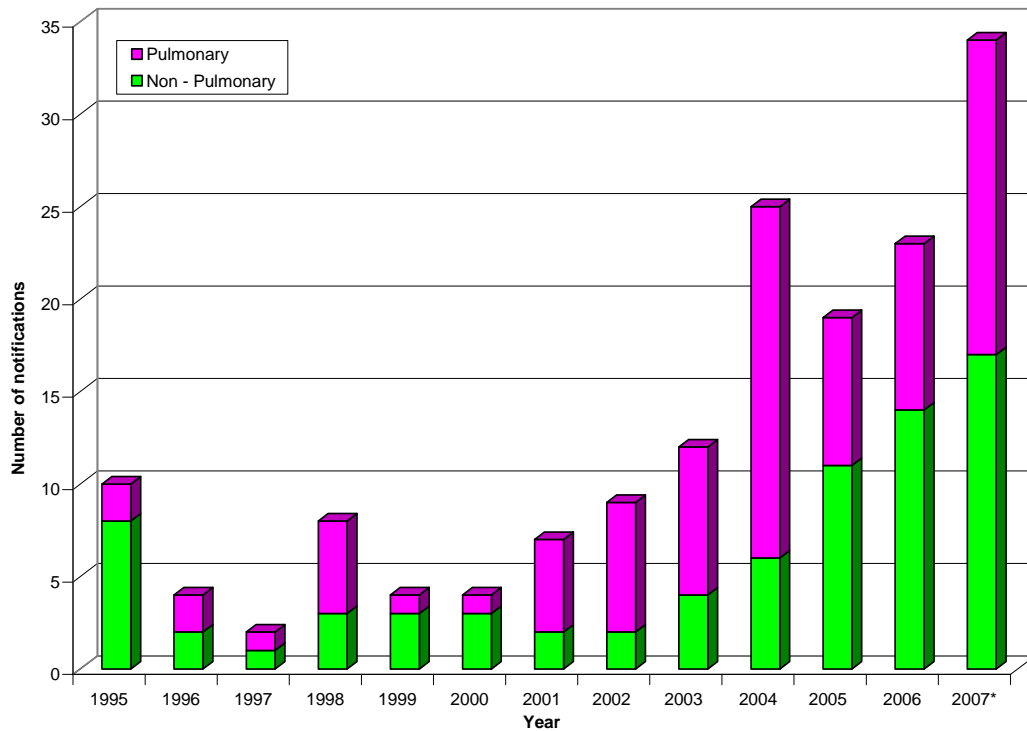
Tuberculosis in Northern Ireland by place of birth:

Although the proportion of cases in Northern Ireland known to have been born outside the UK remains very much lower than in England & Wales, the numbers are increasing annually, with 2006 figures almost double that of 2003 and a 5-fold increase since 2000 (Table 12b).

In Northern Ireland during 2006, 23 cases (38 % of all cases) occurred in individuals born abroad. Fourteen of the 23 cases were notified with pulmonary disease, of which five were both sputum smear and culture positive for *M. tuberculosis*.

The year of first entry into the UK was recorded for 18 of the 23 cases who were born over seas. Seven (39%) developed the disease within one year or less of entry to the UK. The time interval from entry to onset of

symptoms ranged from < 1 year – 20 years, with the mean time period of 4.3 years (median 2 years).



* 2007 data provisional

Figure 7: Site of disease in notified tuberculosis cases born outside UK, Ireland & Northern Ireland, 1995-2007

Conclusion:

The rate of tuberculosis in Northern Ireland remains significantly less than that in the Republic of Ireland, England and Wales. There has been a recent reduction in tuberculosis notifications in Northern Ireland from those born in the UK / Republic of Ireland. However, this reduction has been offset by a rising number of notifications from those born outside the UK/ Republic of Ireland. The latter group are much younger than the former and some are likely to have come to Northern Ireland for economic reasons. This trend may therefore be influenced by global economic trends.

While the number of isolates exhibiting multi drug resistance remains low, they are becoming more frequent. This poses difficult clinical

management challenges, coupled with availability requirements for negative pressure isolation rooms. A heightened vigilance is required to ensure prompt identification, isolation and treatment of such individuals.

References:

- ❖ **Focus on Tuberculosis:**. Annual surveillance report 2006- England, Wales and Northern Ireland. London: Health Protection Agency Centre for Infections, November 2006.
- ❖ **Tuberculosis in the UK.** Annual report on tuberculosis surveillance and control in the UK 2007. London: Health Protection Agency Centre for Infections, November 2007.
- ❖ **Tuberculosis in the UK.** Annual report on tuberculosis surveillance and control in the UK 2008. London: Health Protection Agency Centre for Infections, October 2008.
- ❖ Report on the Epidemiology of Tuberculosis in Ireland 2006.
<http://www.ndsc.ie/hpsc/AZ/VaccinePreventable/TuberculosisTB/Publications/AnnualReportsontheEpidemiologyofTBinIreland/>

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