



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

**SURVEILLANCE REPORT ON TUBERCULOSIS  
IN THE  
HSE WEST (CLARE, LIMERICK, TIPPERARY NORTH) IN 2007**

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The data used in this report were collected by Area Medical Officers (AMOs) in the three Community Care Areas (CCAs), now re-aligned as Local Health Offices of Primary Continuing & Community Care (PCCC) of the Health Service Executive West (Clare, Limerick, Tipperary North). Reports were collated at the Department of Public Health using the EPI-INFO NTBSS 2000 system. The area referred to as the Health Service Executive (HSE) West (Clare, Limerick, Tipperary North) is the Mid-West Area (MWA) previously known as the Mid-Western Health Board.

The completed and finalised dataset was referred to the Health Protection Surveillance Centre in February 2009.

Analysis was performed in MS Access and Excel and EPI-INFO 2000. Denominator data for population rates (2004-7) used data from the 2006 Census of Ireland (unless specified otherwise). Census data from 2002 was applied to TB data for years 2000-2003. Census data from 1996 was applied to TB data for years 1994-1999. Census data from 1991 was applied to TB data for years 1991-1993.

#### **Census Population 2006:**

Ireland	4,239,848
<b>HSE West (Clare, Limerick, Tipperary North):</b>	<b>361,028</b>
Co Clare	110,950
Co Limerick	184,055
Tipperary North	66,023

#### **Note on rates and Census**

Data on rates should be interpreted with caution. Where small numbers are quoted variances can be large and not statistically significant.

**The population rates published in previous TB surveillance reports (2000-2005) have been amended in this report to reflect the rates based on the national and HSE West (Clare Limerick Tipperary North) specified population census data.**

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The staff of the Health Protection Surveillance Centre (HPSC) are acknowledged for the provision of national surveillance data and the distribution of regular bulletins concerning infectious disease in Ireland.

## 1. Summary data:

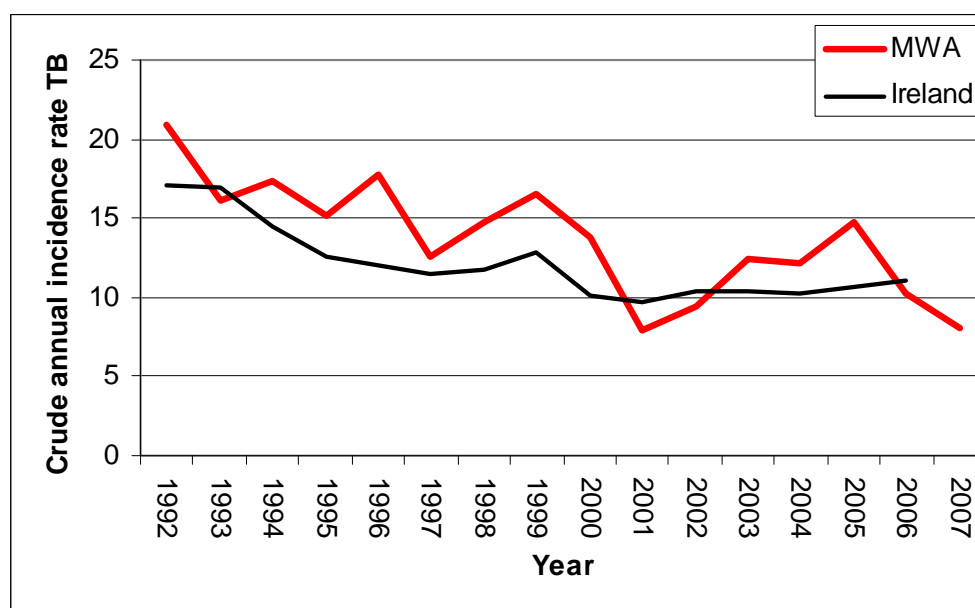
In 2007, there were 35 suspected cases of tuberculosis (TB) in the HSE West (Clare, Limerick, Tipperary North). After validation, six cases were denotified (either MOTT-"mycobacteria other than tuberculosis"; not cases or diagnosis changed as confirmed with AMO or respiratory physician).

In total, there were 29 confirmed cases of TB in the Area in 2007. This corresponds to a crude annual incidence rate of 8.0/100,000 population (95% Confidence Interval: 5.1-11.0).

The trend in the crude annual incidence of TB in the HSE West (Clare, Limerick, Tipperary North) is shown in Table 1 and Figure 1.

*Table 1: Annual crude incidence rate of TB in HSE West (Clare, Limerick, Tipperary North) 1992 – 2007.*

Year	Cases	Crude annual incidence rate/100,000
1992		20.9
1993		18.0
1994		17.7
1995		15.4
1996		17.7
1997		15.1
1998	47	14.8
1999	56	16.5
2000	47	13.8
2001	27	7.9
2002	32	9.4
2003	42	12.4
2004	44	12.2
2005	53	14.7
2006	37	10.2
2007	29	8.0



*Figure 1: Crude annual incidence of TB in HSE West (Clare, Limerick, Tipperary North) and Ireland, 1992 – 2007.*

(rates used 1991, 1996, 2002, 2006 Census data where appropriate)

The change in the trend in the rate of TB in the region needs to be monitored closely over time. The recent resurgence in the TB rate appears to have fallen again. Nationally, the decline in TB has halted. It is unclear whether this trend is temporary or evidence of a changing pattern in terms of demography or diagnosis. Preliminary data for 2008 indicates a similar TB rate to 2007 in the HSE West (Clare, Limerick, Tipperary North).

Very often, outbreaks can affect the crude annual rate, leading to spikes from year to year. Looking at the “smoothed” three year moving average of the crude rate, we can see that the national downward trend in TB has entered a plateau and this is the case also in the HSE West (Clare, Limerick, Tipperary North), Table 2.

*Table 2: Three-year moving average incidence rate of TB in HSE West (Clare, Limerick, Tipperary North) 1992 – 2006*

<b>Year</b>	<b>3-yr moving average incidence rate/100,000</b>
1992	20.0
1993	18.7
1994	17.2
1995	17.2
1996	16.5
1997	15.7
1998	15.4
1999	16.2
2000	13.0
2001	9.8
2002	9.8
2003	11.8
2004	12.7
2005	12.9
2006	10.8

While the downward trend in TB nationally has stopped, in the HSE (Clare, Limerick, Tipperary North) the trend may be decreasing but it is too early to tell if this is sustained, Figure 2.

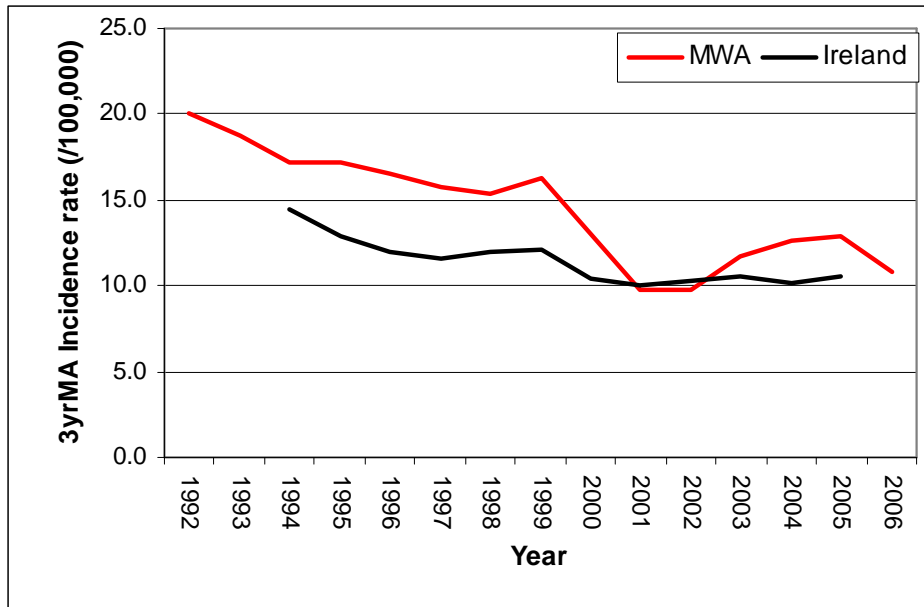


Figure 2: Three-year moving average incidence rate of TB in HSE West (Clare, Limerick, Tipperary North) and Ireland, 1992 – 2006.

Notifications occurred throughout 2007 with May having a large number of notifications as seen in Figure 3.

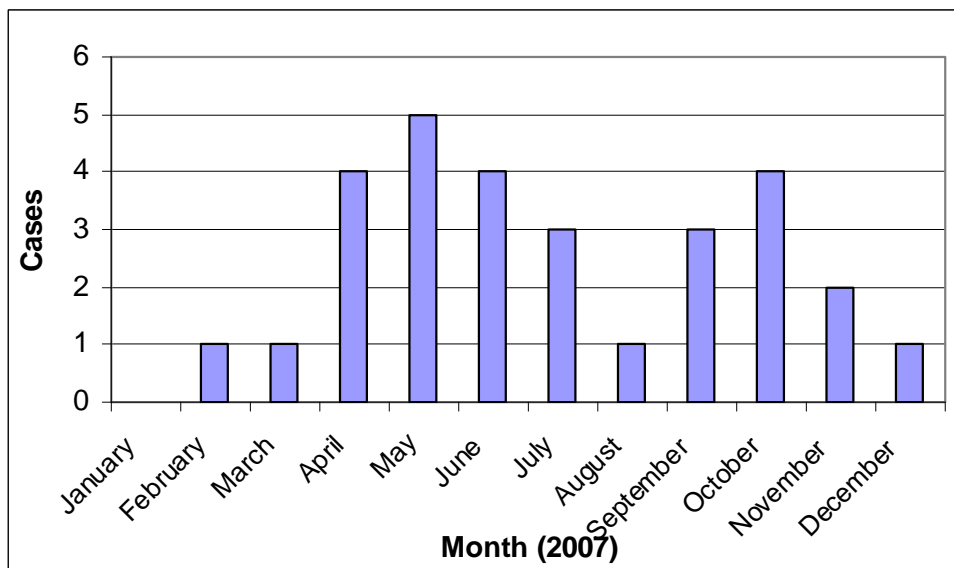


Figure 3: Cases of TB in 2007 in HSE West (Clare, Limerick, Tipperary North) by month of notification.

Compared to 2006, there was disimprovement on average delay from diagnosis to notification. Excluding one outlier, average delay in 2007 was 25 days compared to 5 days in 2006, 9.2 days in 2005 and 15.6 days in 2004. The range in 2007 was 0-275 days (Median; 1 day).

Efforts to address delays in notification to the Department of Public Health are continually made. Prompt public health action is essential to prevent possible outbreaks. The concern is that contacts

who are infectious may have an opportunity to infect others before being assessed and offered appropriate intervention.

Public Health staff ensure that contacts of infectious tuberculosis cases are identified and offered appropriate testing and follow-up. Full operational responsibility for this function rests with the Department of Public Health. This includes responsibility for the chest clinics, which are held in the Out Patients Department, Mid-Western Regional Hospital, Limerick on Thursday and Friday mornings. Clinics are held in Nenagh, Co. Tipperary on Wednesday afternoons as required and the County Clinic, Ennis, Co. Clare on Monday afternoons as required. All clinical notifications of infectious diseases should be forwarded to the Department of Public Health as well as queries regarding the follow-up of contacts.

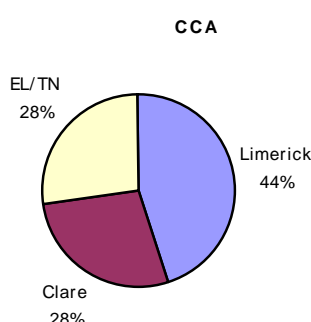
### Geographical distribution:

The percentage of cases seen in the Clare CCA in 2007 (28%) was similar to 2006 (24%), the percentage in the Limerick CCA was similar in both years also. The percentage of cases seen in the E. Limerick/North Tipperary CCA (28%) is lower than that seen in 2006 (35%) (Table 3).

*Table 3: Cases of TB by Community Care Area (CCA) in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29).*

CCA	Cases	%
Clare	8	28
Limerick	13	44
North Tipperary/E. Limerick	8	28

The percentages are represented in Figure 4.



*Figure 4: Pie chart of percentage of cases in each HSE West (Clare, Limerick, Tipperary North) CCA, 2007.*

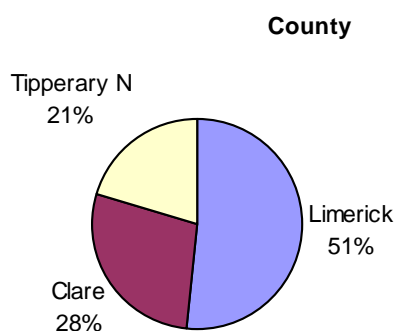
The population estimates for CCA are not as reliable as county estimates so further rates are based on county population. Future LHO areas will be more explicitly defined regarding population. As of January 2009, these LHO populations have not yet been agreed in the Mid-West.

*Table 4: Cases of TB by county in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29):*

County	Population	Cases	CAIR	95% CI
Clare	110,950	8	7.2	2.2 – 12.2
Limerick	184,055	15	8.1	4.0 – 12.3
N Tipperary	66,023	6	9.1	1.8 – 16.4

CAIR = crude annual incidence rate per 100,000. CI = Confidence Interval

Table 4 shows the annual TB incidence rate in 2007 in Limerick (8.1) decreased compared to 2003-6 (Figure 7). The rate in 2007 in Clare was similar to 2006. Six cases were reported from North Tipperary much like the last two years. There is no significant statistical difference between the areas in 2007 and no significant difference between the rates in 2007 compared to 2006.



*Figure 5: Pie chart of percentage of cases in each HSE West (Clare, Limerick, Tipperary North) county, 2007.*

The proportion of cases of TB in Limerick decreased in 2007 (51%), compared to 2006 (60%) and is similar to the

proportion in 2004-5. TB incidence in Limerick in 2007 is significantly lower than in 2003.

Figures 6-8 show the crude incidence (with 95% confidence intervals) of the crude TB rate in Clare, Limerick and North Tipperary.

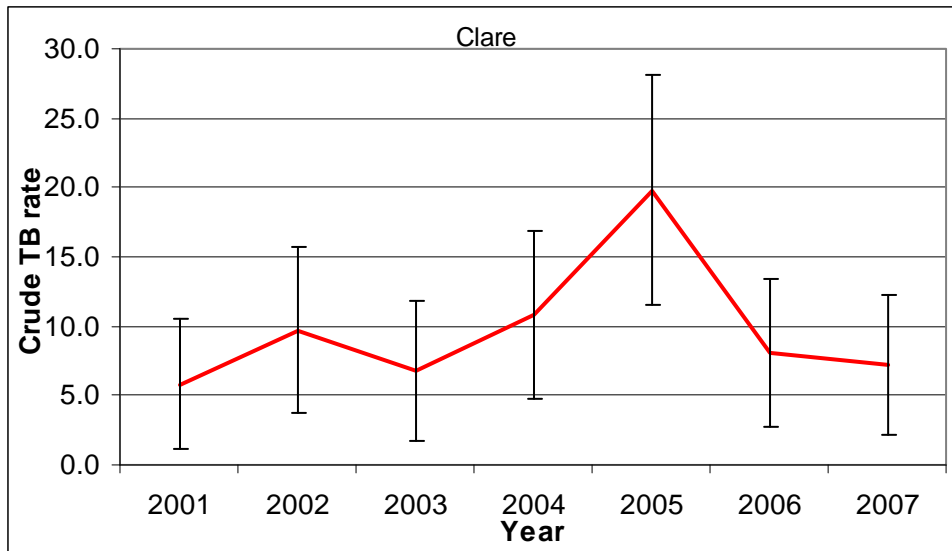


Figure 6: Crude incidence rate of TB, Clare, 2001-7 (with 95% CI).

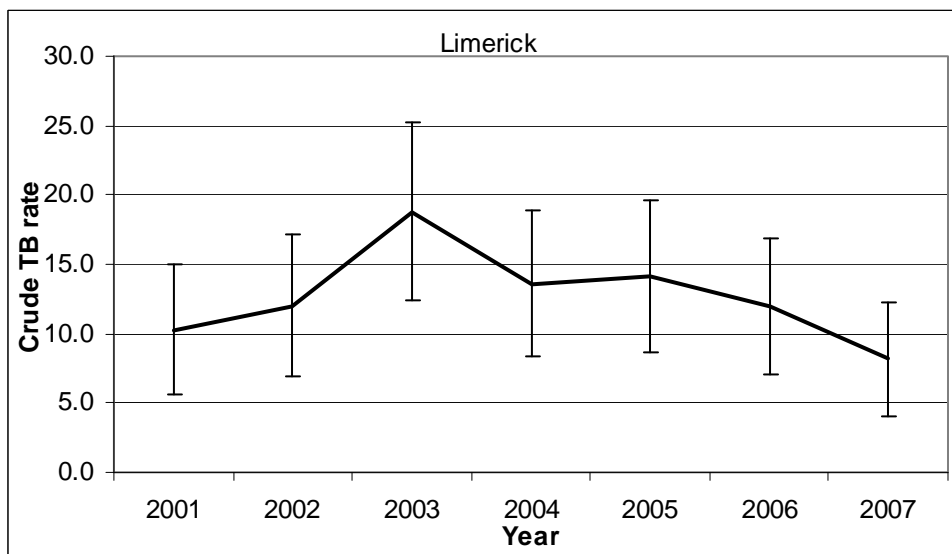


Figure 7: Crude incidence rate of TB, Limerick, 2001-7 (with 95% CI).



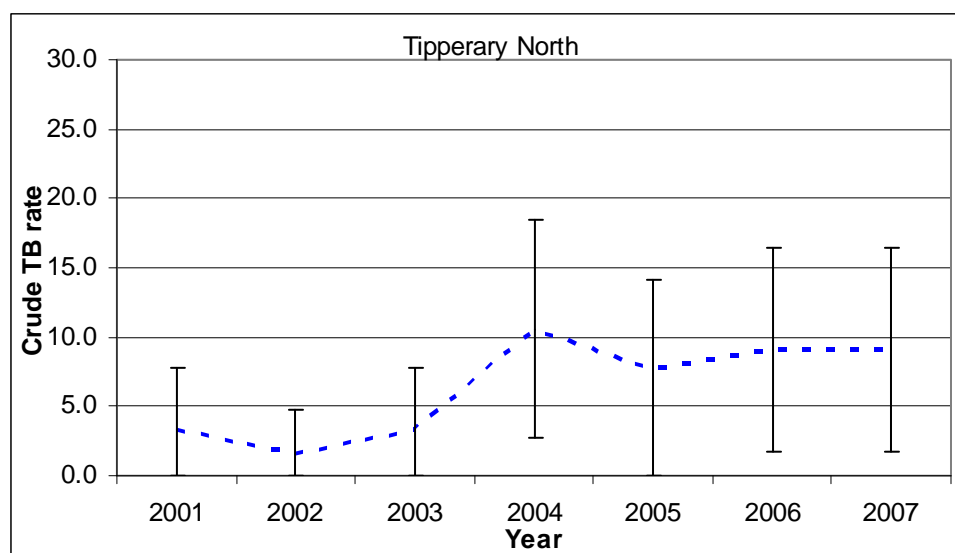


Figure 8: Crude incidence rate of TB, Tipperary North, 2001-7 (with 95% CI).

Like 2005-6, 69% of cases reported were Irish-born persons (20/29) in 2007. There were nine cases of TB reported in foreign-born persons. The countries of origin of the cases are shown in Table 5. Three of these cases were reported from Limerick, four were reported from Clare and two from North Tipperary.

Table 5: Country of origin of foreign-born TB cases, 2007

Country	Cases
India	3
Pakistan	2
Sudan	1
China	1
Germany	1
Malaysia	1
<b>Total</b>	<b>9</b>

Two cases were detected in the asylum seeker population. Data excluding nine foreign-born national cases can be presented to show the incidence in the indigenous population alone, by county (Table 6). There is no statistically significant difference in CAIR between the counties.

Table 6: Cases of TB by county in HSE West (Clare, Limerick, Tipperary North) 2007 (indigenous population only n=20):

County	Population	Cases	CAIR	95% CI
Clare	92,658	4	4.3	0.9 – 8.6
Limerick	158,953	12	7.5	3.3 – 11.8
N Tipperary	58,106	4	6.9	0.1 – 13.6
All	309,717	20	6.5	3.6 – 9.3

CAIR – crude annual incidence rate per 100,000. CI = Confidence Interval

#### Accommodation:

Of all TB cases in 2007, 25 cases were reported as living at home. Four cases lived in other accommodation – institutions or long-term care facilities.

## 2. Sex distribution:

Of the 29 cases confirmed in the HSE West (Clare, Limerick, Tipperary North), 19 were male (66%) and 10 were female (34%), Figure 6. The male to female ratio was 1.9:1, similar to 2006.

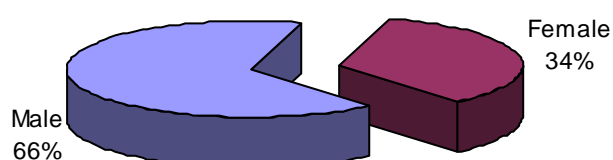


Figure 9: Pie chart illustrating sex distribution of TB cases in HSE West (Clare, Limerick, Tipperary North), 2007.

Despite TB incidence being twice the rate in males compared to females, there is no statistically significant difference in the incidence of TB in males and females at the 95% significance level. The crude annual incidence rate in males is 10.4 (95% Confidence Interval; 5.7 – 15.1) and in females 5.6 (95% Confidence Interval; 2.1 – 9.1).

Table 7 shows the cases in each county by sex.

Table 7: Distribution of TB cases by sex in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29)

	Clare	Limerick	N Tipperary
Cases	8 (4)	15 (12)	6 (4)
Males	5 (3)	12 (11)	2 (1)
Female	3 (1)	3 (1)	4 (3)

() = Irish-born cases.

Due to small numbers, the confidence intervals are large and overlap.

Figure 10 shows the crude TB rate by sex for recent years. Men have a consistently higher rate of TB than women from 2000-2007.

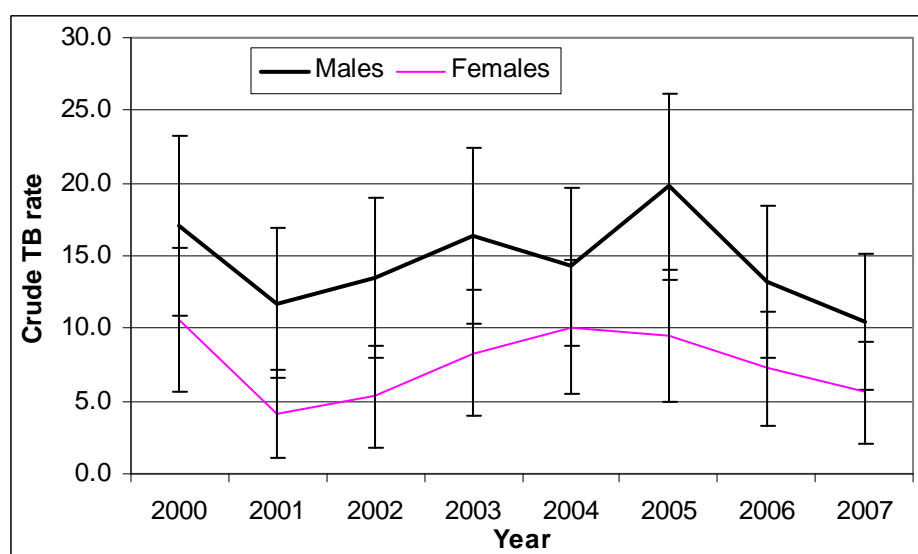


Figure 10: Crude TB rate (with 95% CI) in males and females in HSE West (Clare, Limerick, Tipperary North), 2000-2007.

### 3. Age Distribution:

The distribution of cases of TB in different age groups was analysed. Direct methods of standardisation were used to compare the data from the region with the Irish population. The age range of cases in HSE West (Clare, Limerick, Tipperary North), in 2007 was 14 years to 88 years (Mean age 48.7yrs). In 2007 the mean age was older compared to 2006 (46.7); 2005 (45.7 yrs); 2004 (44.5 yrs); 2003 (46.5 years), 2002 (44.8 years), 2001 (56.8 years), and 2000 (45.5 years).

*Table 8: Mean age of TB cases in HSE West (Clare, Limerick, Tipperary North) counties, 2007.*

<b>County Mean age in years (2006, 2005 for comparison)</b>		<b>n</b>
Clare	50.0 (54.1, 48.3)	8
Limerick	51.3 (44.4, 43.3)	15
Tipperary N	40.8 (43.7, 46.6)	6

The mean age of cases in Limerick increased in 2007, Table 8. Any increase in active disease in the younger population is cause for concern but where numbers are small, a few cases can skew data.

Table 9 shows the number of TB cases by age group for sex and county.

*Table 9: Distribution of TB by age in HSE West (Clare, Limerick, Tipperary North) and counties, 2007.*

<b>Age group</b>	<b>All</b>	<b>Males</b>	<b>Females</b>	<b>Limerick</b>	<b>Clare</b>	<b>N Tipperary</b>
0 – 4y	0	0	0	0	0	0
5 – 14y	1	0	1	0	1	0
15 – 24y	1	0	1	0	0	1
25 – 34y	10	8	2	8	2	0
35 – 44y	4	1	3	0	1	3
45 – 54y	2	1	1	0	0	2
55 – 64y	1	0	1	1	0	0
65+y	10	9	1	6	4	0

The age standardised incidence rate of TB in the HSE West (Clare, Limerick, Tipperary North) was calculated to be 8.15 (95% CI: 5.2 – 11.1). For the counties, the age standardised rates were calculated as:

Clare	7.2 (95% CI: 2.2 – 12.2)
Limerick	8.3 (95% CI: 4.1 – 12.5)
North Tipperary	9.1 (95% CI: 1.8 – 16.4)

In 2007, the rate of TB in the older groups (over 65 years) was unchanged compared to the rate in 2006 and 2005. There was a welcome fall in the rate of TB in the younger age groups (45-44 years) in the HSE West (Clare, Limerick, Tipperary North) in 2007 (Figure 11).

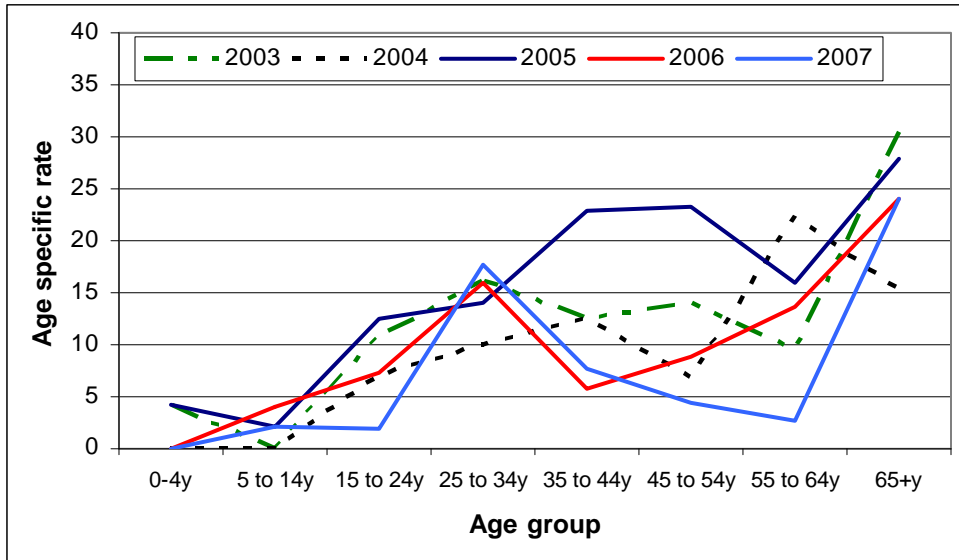


Figure 11: Age distribution of TB cases in HSE West (Clare, Limerick, Tipperary North), 2007 (2003, 2004, 2005 and 2006 for comparison).

Age and sex specific TB rates were calculated in Table 10.

Table 10: Age and sex specific incidence rates of TB in HSE West (Clare, Limerick, Tipperary North), 2007.

Age group	All	Males	Females
0 – 4y	0.0	0.0	0.0
5 – 14y	2.0	0.0	4.2
15 – 24y	1.8	0.0	3.8
25 – 34y	17.7	27.5	7.3
35 – 44y	7.7	3.7	11.8
45 – 54y	4.4	4.3	4.5
55 – 64y	2.7	0.0	5.5
65+y	24.0	48.0	4.4

The difference between the male and female rates in each age group is shown graphically in Figure 12. The 2007 pattern is very similar to 2006.

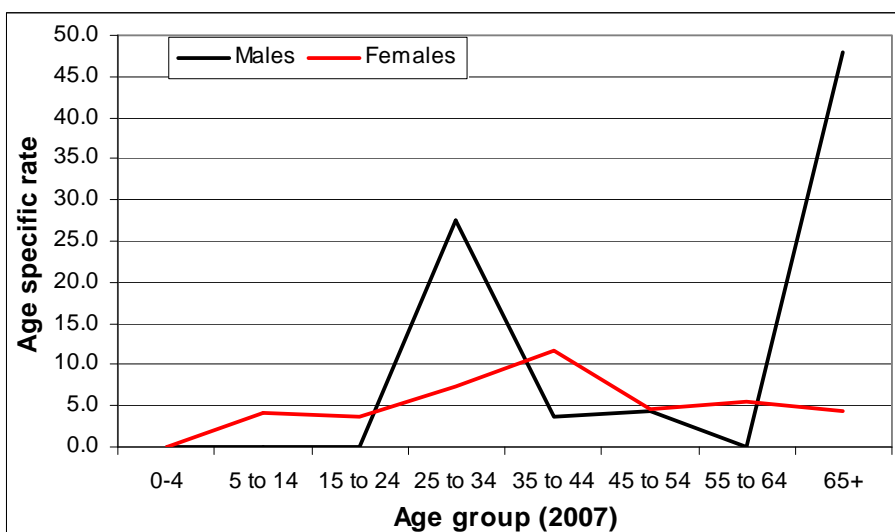


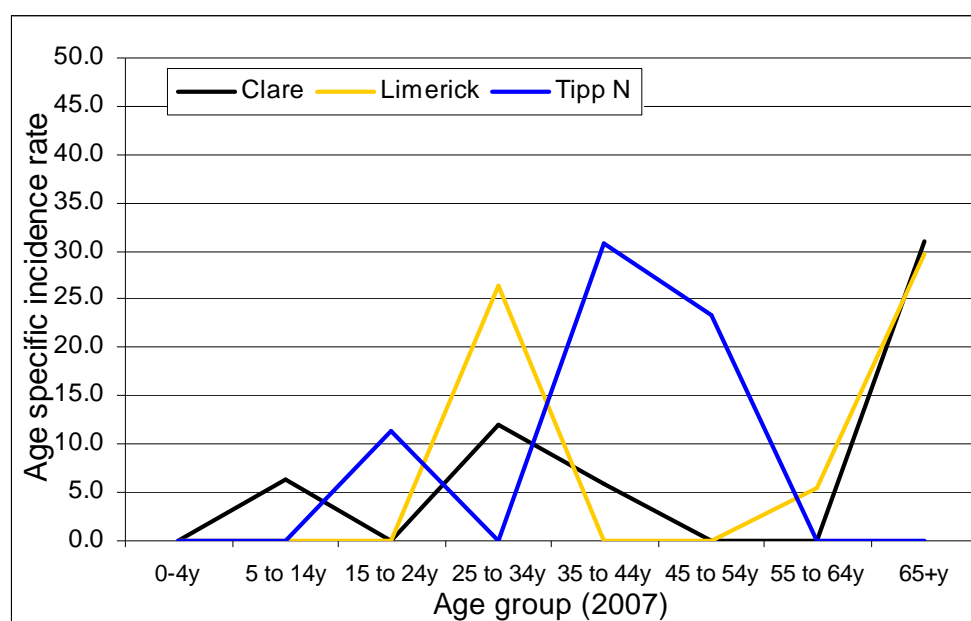
Figure 12: Age and sex specific incidence rates of TB in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29).

A fall in the number of cases in the younger age groups is evident in Clare and Limerick in 2007, compared to previous years, Figure 13. There is a noticeable absence of cases in older people in North Tipperary.

*Table 11: Age specific incidence rates of TB in HSE West (Clare, Limerick, Tipperary North) counties in 2007.*

Age group	Limerick	Clare	N Tipperary
0 – 4y	0.0	0.0	0.0
5 – 14y	0.0	6.3	0.0
15 – 24y	0.0	0.0	11.4
25 – 34y	26.5	12.1	0.0
35 – 44y	0.0	5.9	30.9
45 – 54y	0.0	0.0	23.3
55 – 64y	5.5	0.0	0.0
65+y	29.6	31.0	0.0

To assess the effect of the percentage of foreign-born TB cases (31%), rates were calculated based on indigenous cases only (figures 14 and 15). These must be interpreted with caution as data up to 2001 did not take account of foreign-born TB cases.



*Figure 13: Age specific incidence rate of TB in counties Clare, Limerick and North Tipperary, 2007.*

Figure 14 shows the age and sex specific incidence rate for the Irish-born cases only. This assumes TB infection was acquired in Ireland in each Irish-born case and that the excluded foreign-born cases all acquired TB infection outside Ireland, which is not always the case.

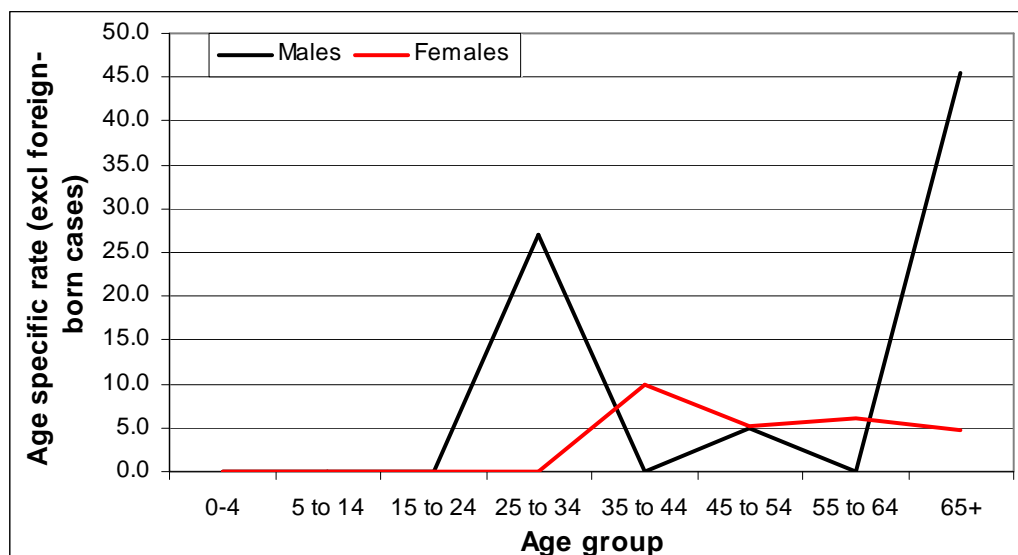


Figure 14: Age and sex specific rates of TB (**excluding** nine foreign-born cases) in HSE West (Clare, Limerick, Tipperary North), 2007.

Confining the examination of data to Irish born persons results in a lower rate of disease in the younger (<55 years) age groups in the region. This is perhaps a fairer reflection of the trend in the Irish-born population in the region, Figure 15. Figures and rates broken down by age and sex and county become small and may show marked variation year on year.

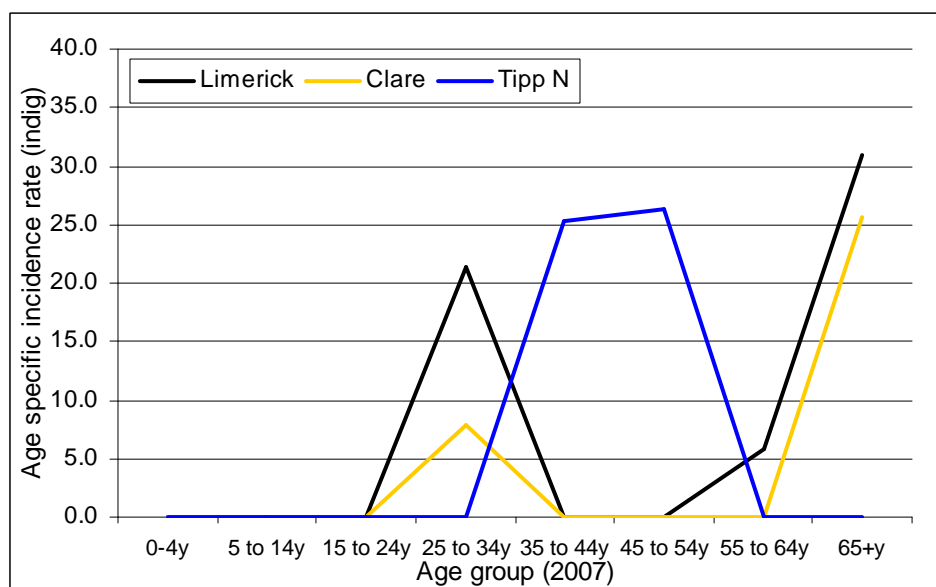


Figure 15: Age specific incidence rate of TB by county in HSE West (Clare, Limerick, Tipperary North), 2007 (**excluding** nine foreign-born cases).

Excluding nine foreign-born cases, the mean age of the cases of TB is higher in all three areas of the

Mid-West.	HSE West (Clare, Limerick, Tipperary North)	55.0 years
	Clare	59.6 years
	Limerick	57.0 years
	Tipperary North	44.5 years

As with all summary indicators based on small numbers, variations should be interpreted with caution as changes from year to year may not be statistically significant.

The trend in average age of all Mid-West TB cases has been relatively stable in recent years. In contrast, average age of males is rising, as are all Irish-born cases of TB in the region. The decrease in average age of females will be monitored as variations occur when numbers are small.

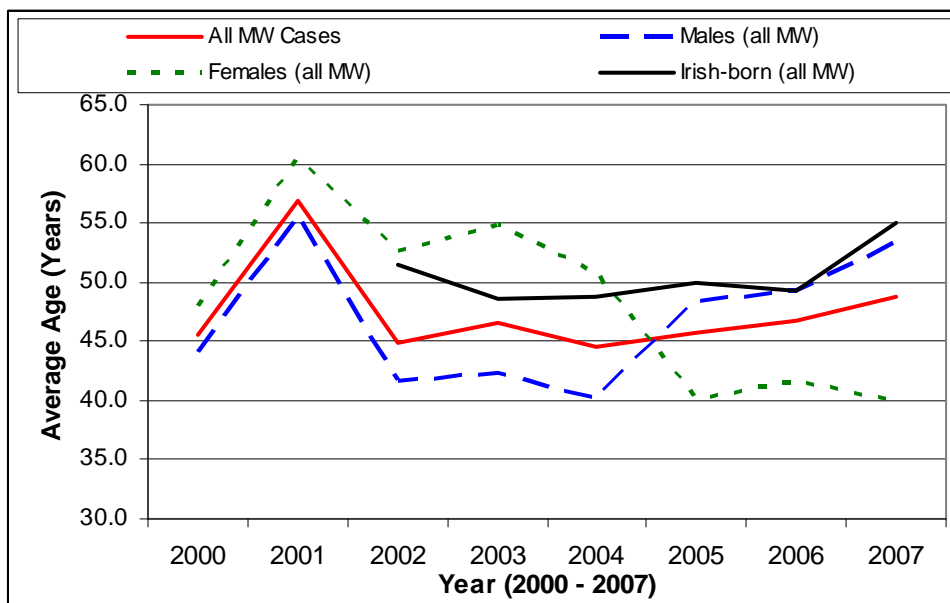


Figure 16: Average ages of male, female, all and Irish-born TB cases HSE West (Clare, Limerick, Tipperary North), 2000-2007.

**Diagnostic classification:**

Criteria to define classifications are based on national and international standards (see Appendix 1).

As in 2004, 2005 and 2006, there was one clinically diagnosed case of TB meningitis in an adult female in 2007.

Diagnostic classification was recorded in 100% of cases in the region, Table 12.

*Table 12: Diagnostic classification of TB in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29)*

<b>Area</b>	<b>P (%)</b>	<b>E (%)</b>	<b>P+E (%)</b>	<b>Pri (%)</b>	<b>Total (%)</b>
HSE M-W	20 (69)	9 (31)	0 (0)	0 (0)	29 (100)
Clare	6	2	0	0	8
Limerick	12	3	0	0	15
N Tipperary	2	4	0	0	6

P=Pulmonary E=Extrapulmonary Pri=Primary

The percentage of cases with a pulmonary (P or P&E) component (69%) was lower than 2006 (81%), 2005 (77%) and 2003-4 (71%). While the percentage of cases that were extrapulmonary only was higher compared to 2006 (19%), the number of cases in 2007 was only two greater (9).

Extrapulmonary sites (9) involved were reported as:

<b>Site</b>	<b>Cases</b>
Bone	1
Genitourinary	1
Lymph (extra-thoracic)	3
Meningeal	1
Other (rectal biopsy)	1
Pleural	1
Unknown	1
Total	9



#### 4. Laboratory Investigation:

Table 13 shows the number of TB cases with sputum or bronchial washings positive “direct AFB”.

Cases with a pulmonary component and “direct AFB” positive are more infectious.

Table 13: Cases investigated by direct smear examination, HSE West (Clare, Limerick, Tipperary North) 2007.

Direct AFB Stain	All cases (n=29)	Pulmonary TB (n=20)
Positive	9	9
Negative	9	7
Not done	9	3
Unspecified	2	1

(9 cases extrapulmonary).

Twenty TB cases had a pulmonary component (all pulmonary only) to the disease classification. Of these cases, 14 (70%) were culture positive and 9 (45%) were positive on direct AFB smear. Four isolates of *M. tuberculosis* and one isolate of *M. bovis* were detected in ten specimen cultures (nine sputum or bronchial washings) where direct AFB was **not** positive.

Nine AFB smear positive cases of pulmonary TB corresponds to a direct smear positive rate of 2.5 /100,000 population (95% CI: 0.9 – 4.1), one of the lowest rates in the region since TB surveillance began.

Of the 20 pulmonary TB cases detected, 14 were culture positive (eleven isolates were *M. tuberculosis*, two were *M. bovis* and one was *M. africanum*). *M. africanum* is a relatively rare isolate but is one of the isolates in the “MTB complex” that causes active disease in humans. The isolate was related to a case who was born on the Indian Subcontinent.

Of the nine pulmonary TB smear positive cases detected, all were culture positive (seven isolates were *M. tuberculosis*, one was *M. bovis* and one was *M. africanum*).

Two isolates of *M. tuberculosis* were detected in cases classified extrapulmonary TB, (incl. one from lymph node pus and another from a neck swab). Culture result on one case of extrapulmonary TB failed to grow for identification.

Susceptibility patterns on all 13 isolates of *M. tuberculosis*, two isolates of *M. bovis* and one *M. africanum* were provided. All *M. tuberculosis* isolates were found susceptible to rifampicin, pyrazinamide, isoniazid and ethambutol. No multi-drug resistant isolates were detected. One case of tuberculosis caused by *M. tuberculosis* was diagnosed in an individual who had previously spent some years on the African continent and this isolate was fully sensitive to anti-TB antimicrobials.

The isolates of *M. bovis* were detected in a male and female with pulmonary TB in Limerick and Tipperary North and were susceptible to rifampicin, isoniazid and ethambutol. Unusually, these cases occurred in relatively young individuals.

Active TB was diagnosed on chest X-ray in 14 cases (14 recorded a pulmonary component). In four other pulmonary cases, X-ray detailed radiological evidence of TB in one case; pneumonia in another; was inconclusive with respect to active or old disease in a third; and in a fourth no information was available. X-ray findings showed a further extrapulmonary case with pleural effusion.

Histological results confirmed four cases of extrapulmonary TB, one of which grew *M. tuberculosis*. Microbiological culture was the sole positive finding in three cases.

Overall, five cases were diagnosed on a clinical basis (three extrapulmonary, two pulmonary).

## 5. Risk Factors:

Risk factors were reported in five cases. One case reported diabetes mellitus; another reported prior exposure to a family TB case; another reported steroid use; a fourth reported working on the African continent and no risk was specified in a fifth case. Seventeen cases reported no risk factors while in five case risk factors were unknown. In two cases no data was provided.

Four cases (all Irish-born) reported a previous history of TB (one case in 1967; two in 2001; one unknown). One of these cases was previously recorded as a case of TB in the Mid-West and diagnosis of this relapse was on X-ray evidence only. Twenty cases reported no history of TB – two cases had no data and three recorded history of TB as unknown.

Three cases reported a history of BCG (nine reported no history of BCG, 14 history unknown and three cases no data given). Six cases had a “scar present” and half had reported a history of BCG, half reported no history of BCG. No scar was seen in six cases. However, data on many cases was unknown or incomplete for this question – seventeen unknown or no data given.

In 2007, 25 cases presented as a case of TB, two were detected by other means.

## 6. Outcome data:

Outcome data was acquired for 29 cases notified (100%), Table 14.

*Table 14: Category of outcome for TB cases in HSE West (Clare, Limerick, Tipperary North), 2007 (n=29).*

Outcome	Cases
Completed therapy	25 (86%)
Died	2
Lost to follow-up	1
Treatment interrupted (>2mth)	1

Two elderly Irish-born males with pulmonary TB died. TB was not specified as cause of death in either case.

The percentage of those who had therapy completion verified is higher compared to 2006.

## 7. Comment:

Overall, the completeness and timeliness of the data collection and reporting of the enhanced TB surveillance system in 2007 was good but some cases took a long period of time between onset, diagnosis and notification.

Outbreaks of TB will cause some areas to experience an increase in rates for periods of time.

Increased awareness and complete reporting can cause variations in the TB notification rates.

Lately, the capture of molecular typing of TB isolates is allowing greater assessment of linkages between cases in the Mid-West. While some TB cases occurred in proximity to other cases, no link was evident.

In recent years, the incidence of TB is consistently highest in Cork Dublin and Waterford but the reduction in the number of cases in Limerick is welcome. Further work is needed to elucidate the epidemiology of the disease in urban and rural areas.

Data collection on BCG must improve and considerable effort and determination will be needed to achieve this and maintain complete outcome surveillance in future.

Greater vigilance and a timely reference laboratory facility in Ireland are needed to guard against the threat of antimicrobial resistance. There is increasing public health concern about multi-drug resistant tuberculosis (MDR-TB) in Ireland, more cases are reported annually.

General practitioners in all the areas of the Mid-West should continue to be alert for further TB cases. It is very important that when samples are sent to the Microbiology Laboratory for testing that investigation for TB is specifically requested if suspected.

Preliminary results for 2008 show a similar incidence of tuberculosis disease in the Mid-West in comparison to 2007.

Worldwide, the incidence of tuberculosis is increasing. Further information on the epidemiology of tuberculosis and antimicrobial resistance is available at <http://www.eurotb.org/>

Many more people are infected with TB than show disease. The threat from multi-drug resistant TB (MDR-TB) is still present within Europe.

A recent paper demonstrates the concern about MDR-TB in Europe: Falzon D, Infuso A <sup>±</sup>, Aït-Belghiti F. **In the European Union, TB patients from former Soviet countries have a high risk of multidrug resistance** Int J Tuberc Lung Dis 2006 ; 10: 954-958

Internationally, in recent months, there has been concern about the rise in XDR-TB – extensively drug resistant *M. tuberculosis*.

This disease has caused outbreaks in specific areas of South Africa. Special measures are taking place with respect to surveillance to boost European alertness in case the disease is detected here.

**March 24<sup>th</sup> 2009 is International World TB Day. The theme is “I am stopping TB”.**

## Appendix 1:

### Case Definitions

The case definitions used were those recommended by the National TB Working Group (1996).

- **A notified case** of TB referred to clinically active disease due to infection with organisms of the *Mycobacterium tuberculosis* complex. Active disease was presumed if the patient was commenced on a full curative course of anti-tuberculosis chemotherapy. Persons placed on chemoprophylaxis for preventive treatment or infected by mycobacterium other than *M. tuberculosis* complex were not included as cases.
- **A definite case** of tuberculosis was a case with culture confirmed disease due to *M. tuberculosis* complex.
- **An other than definite case** met both of the following conditions: (1) It was the clinician's judgement that the patient's clinical and/or radiological signs and/or symptoms were compatible with tuberculosis and (2) The physician took the decision to treat the patient with a full course of anti-tuberculosis therapy.
- **Pulmonary TB** was defined as a laboratory confirmed case-either a positive smear, histology or culture-with or without radiological abnormalities consistent with active pulmonary TB or a case where the physician took the decision that the patient's clinical symptoms and/or radiological signs were compatible with pulmonary TB.
- **Extra-pulmonary TB** was defined as a patient with a smear, culture or histology specimen, from an extra-pulmonary site, that was positive for *M. tuberculosis* complex or a case with clinical signs of active extra-pulmonary disease in conjunction with a decision taken by the attending physician to treat the patient with a full curative course of anti-tuberculosis chemotherapy.
- **Pulmonary and Extra-pulmonary TB** was a case of tuberculosis that met the previous two definitions.
- **Primary TB** was defined as a patient with a negative smear, culture or histology specimen but which had radiological signs of hilar lymphadenopathy on chest x-ray and a positive tuberculin skin test or there was clinical evidence that led the physician to treat the patient with a curative course of antituberculosis chemotherapy.
- **A Recurrent Case** was defined as a patient with a documented history of TB prior to their 2000 notification.
- **Indigenous Population** was defined as those who were born in Ireland