



## **National TB Surveillance**

**A report by the Health Protection Surveillance Centre**

### **Quarter 1 & 2 2015 TB Report**

Report produced 21<sup>st</sup> August 2015\*

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\* The data in this report are provisional and will not be regarded as final until all notification data on individual cases are complete and the data have been validated.  
Data extracted from CIDR 13/08/2015

## Introduction

This Quarter 1 and 2 2015 TB Report presents an epidemiological summary of the cases of tuberculosis (TB) notified to eight HSE areas in Ireland during January - June 2015.

HPSC produces a quarterly TB report using data submitted to it by HSE areas after the end of each quarter. Quarterly returns from the areas consist of disaggregate data on new TB notifications and some additional data on notified TB cases from previous years. **Data in quarterly reports should be regarded as provisional until a process of validation has been completed at the end of that notification year.** Quarterly reports will invariably have incomplete data on cases until this process of validation has occurred.

## Summary

During Quarter 1 and 2 2015:

- 147 TB cases<sup>†</sup> were notified to HPSC
- HSE East reported the highest number of cases at 60 (40.8% of total)
- The male to female ratio was 1.5:1.0
- The highest proportion of cases occurred in those aged 65 years and older (23.1%) and those aged 25-34 years (22.4%)
- 44.9% of all cases were foreign born
- No cases of TB meningitis were notified
- 96 cases (65.3%) were culture positive, 13 (8.8%) were culture negative and eight (5.4%) were reported as not having been culture tested (table 9). Culture result was not reported for the remaining 30 cases (20.4%).
- *M. tuberculosis* was isolated in 89 (92.7%) and *M. tuberculosis* complex<sup>‡</sup> in seven (7.3%).
- 92 (95.8%) culture positive cases had drug sensitivity details
- No cases of multidrug-resistant TB (MDR-TB) were notified for this period
- HIV status was reported for 31 (21.1%) TB cases
- Two outbreaks were reported during this period

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<sup>†</sup> Data in quarterly reports should be regarded as provisional until a process of validation has been completed at the end of that notification year.

<sup>‡</sup> Species of mycobacteria not specified

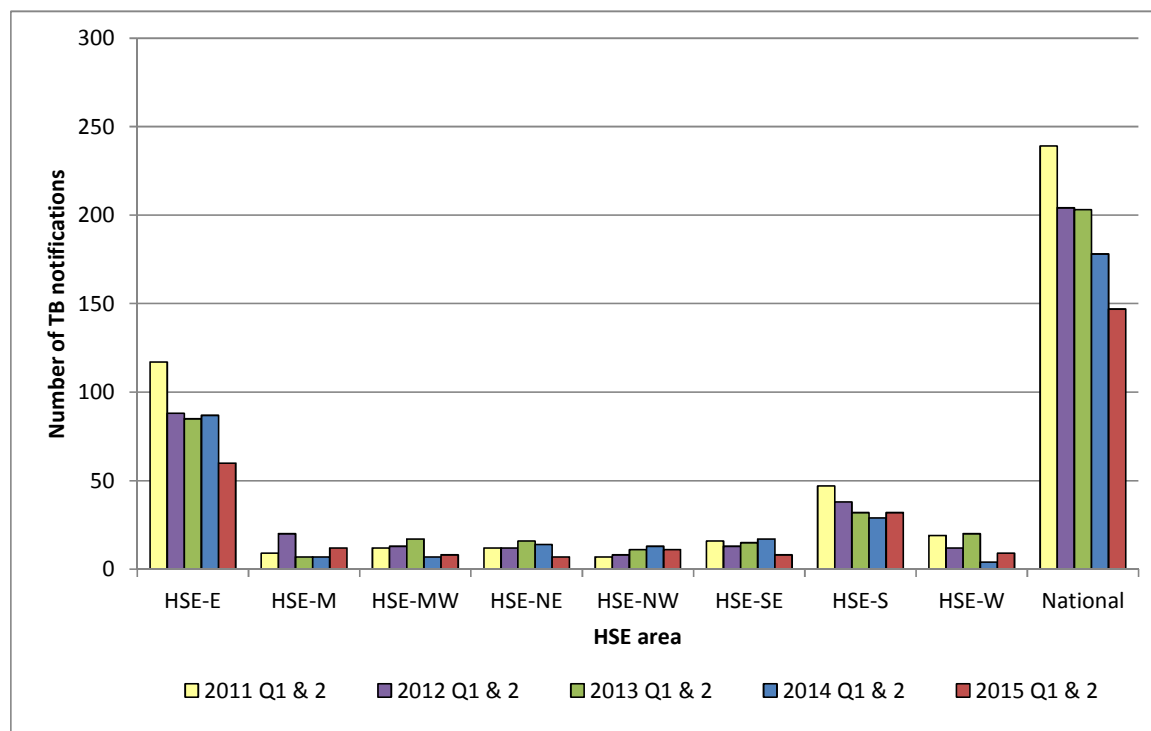
## Results

### Total cases of tuberculosis notified in Q1 and 2 2015

There were 147 cases of TB notified during the period 1<sup>st</sup> January to 30<sup>th</sup> June 2015. The number of cases notified in each HSE area is shown in table 1 and figure 1 and a breakdown of TB cases by county is shown in table 2. Table A1, appendix 1 displays the number of TB notifications, 3 year moving average and crude incidence rate by year.

**Table 1: Number and percentage of TB notifications by HSE area, Q1 & Q2 2015**

HSE Area	Quarter 1	Quarter 2	Total	% Total
East	34	26	<b>60</b>	<b>40.8</b>
Midland	6	6	<b>12</b>	<b>8.2</b>
Mid-West	3	5	<b>8</b>	<b>5.4</b>
North East	3	4	<b>7</b>	<b>4.8</b>
North West	4	7	<b>11</b>	<b>7.5</b>
South East	4	4	<b>8</b>	<b>5.4</b>
South	11	21	<b>32</b>	<b>21.8</b>
West	4	5	<b>9</b>	<b>6.1</b>
<b>Total</b>	<b>69</b>	<b>78</b>	<b>147</b>	<b>100.0</b>



**Figure 1: Number of TB notifications by HSE area, Q1 & Q2 2011-2015**

**Table 2: Number and percentage of TB notifications by county, Q1 & Q2 2015**

County	Number of TB Cases	% Total
Carlow	2	1.4
Cavan	1	0.7
Clare	2	1.4
Cork	29	19.7
Donegal	4	2.7
Dublin	51	34.7
Galway	5	3.4
Kerry	3	2.0
Kildare	6	4.1
Kilkenny	1	0.7
Laois	3	2.0
Limerick	6	4.1
Longford	2	1.4
Louth	1	0.7
Mayo	2	1.4
Meath	2	1.4
Monaghan	3	2.0
Offaly	3	2.0
Roscommon	2	1.4
Sligo	7	4.8
Tipperary	2	1.4
Waterford	1	0.7
Westmeath	4	2.7
Wexford	2	1.4
Wicklow	3	2.0
<b>Total</b>	<b>147</b>	<b>100.0</b>

A further breakdown of cases by community care area is shown in table 3.

Table 3: Number and percentage of TB notifications by LHO, Q1 &amp; Q2 2015

HSE Area	LHO	Number of TB Cases
East	CCA1	4
	CCA2	1
	CCA3	9
	CCA4	4
	CCA5	5
	CCA6	14
	CCA7	7
	CCA8	7
	CCA9	6
	CCA10	3
	<b>Total</b>	<b>60</b>
Midland	Longford/Westmeath	6
	Laois/Offaly	6
	<b>Total</b>	<b>12</b>
Mid-West	Clare	2
	Limerick	6
	Tipperary North/East Limerick	0
	<b>Total</b>	<b>8</b>
North East	Cavan	1
	Louth/South Monaghan	1
	Meath	2
	Monaghan	3
	<b>Total</b>	<b>7</b>
North West	Donegal	4
	Sligo/Leitrim	7
	<b>Total</b>	<b>11</b>
South East	Carlow/Kilkenny	3
	Tipperary South	2
	Waterford	1
	Wexford	2
	<b>Total</b>	<b>8</b>
South	Kerry	3
	North Cork	5
	North/South Lee	24
	West Cork	0
	<b>Total</b>	<b>32</b>
West	Galway	5
	Mayo	2
	Roscommon	2
	<b>Total</b>	<b>9</b>
<b>Ireland</b>		<b>147</b>

## Sex

There were 88 males (59.9%) and 58 females (39.5%) in Q1 and 2 2015. Sex was not reported for the remaining case.

## Age groups

A breakdown of cases by age group and HSE area is shown in table 4.

**Table 4: Number and percentage of TB notifications by age group and HSE area, Q1 & Q2 2015**

Age group (years)	HSE-E	HSE-M	HSE-MW	HSE-NE	HSE-NW	HSE-SE	HSE-S	HSE-W	Total	% Total
0-4	0	0	0	0	0	0	0	0	<b>0</b>	0.0
5-9	0	0	0	0	1	0	1	0	<b>2</b>	1.4
10-14	0	0	0	1	2	0	0	0	<b>3</b>	2.0
15-19	1	1	0	0	2	0	1	1	<b>6</b>	4.1
20-24	6	0	2	0	0	1	0	1	<b>10</b>	6.8
25-34	15	3	1	0	1	3	8	2	<b>33</b>	22.4
35-44	10	1	1	3	3	1	6	1	<b>26</b>	17.7
45-54	7	0	0	1	0	2	5	2	<b>17</b>	11.6
55-64	10	0	2	0	1	0	3	0	<b>16</b>	10.9
65+	11	7	2	2	1	1	8	2	<b>34</b>	23.1
Unknown	0	0	0	0	0	0	0	0	<b>0</b>	0.0
<b>Total</b>	<b>60</b>	<b>12</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>8</b>	<b>32</b>	<b>9</b>	<b>147</b>	100.0

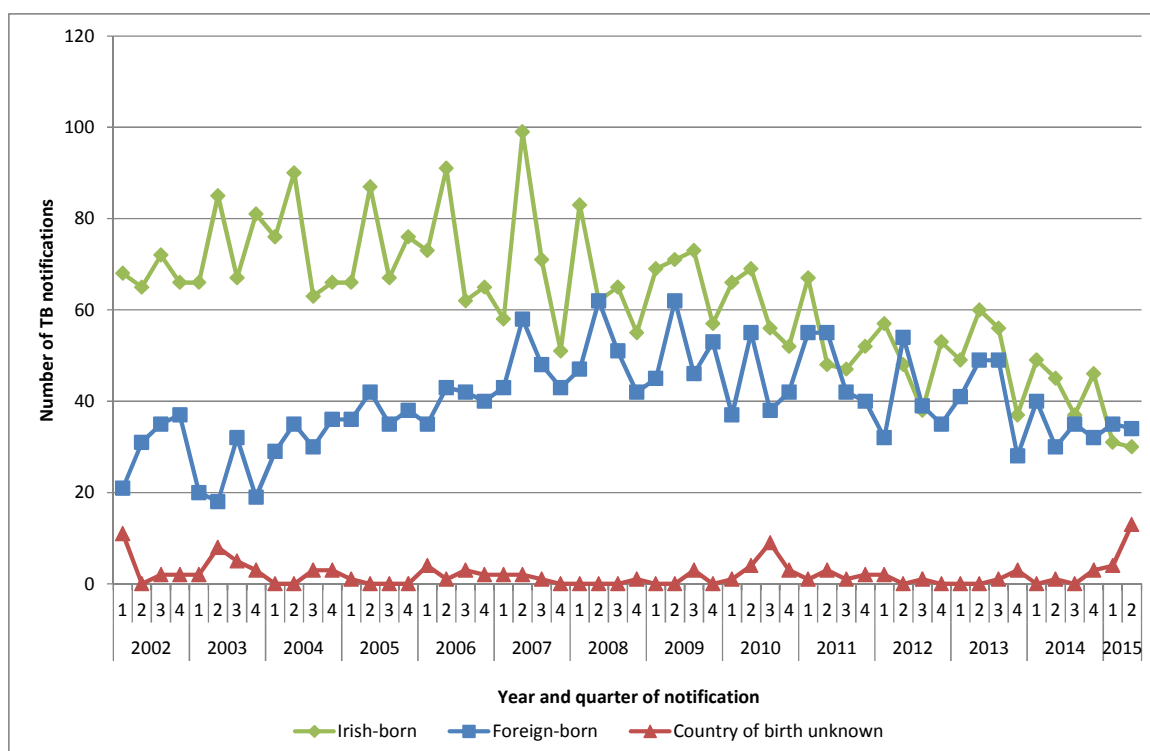
## Country of origin

During Q1 and Q2 2015, 61 (41.5%) TB cases were born in Ireland and 69 (46.9%) were born outside Ireland. Country of birth was not reported for 17 cases (11.6%) cases. Table 5 summarises the countries of birth of cases.

Of those 69 cases born outside Ireland, nine (13.0%) were reported as asylum seekers or refugees. Four were from HSE-NW, three from HSE-E and one each from HSE-M and -S. Figure 2 shows the annual number of TB cases by geographic origin from 2002 to Q2 2015.

**Table 5: Number and percentage of TB notifications by country of birth, Q1 & Q2 2015**

Country of Birth	Number of TB Cases	% Total
Ireland	61	38.5
Afghanistan	2	2.6
Algeria	1	1.3
Bangladesh	2	0.0
Brazil	2	2.6
China	1	0.0
Congo	1	0.0
Congo, The Democratic Republic of the	1	0.0
Eritrea	1	1.3
India	14	10.3
Latvia	1	0.0
Lesotho	1	0.0
Lithuania	1	0.0
Malawi	1	1.3
Nigeria	1	0.0
Pakistan	13	10.3
Philippines	5	3.8
Poland	2	2.6
Romania	6	1.3
Somalia	1	0.0
South Africa	4	1.3
Sri Lanka	1	1.3
Sudan	1	0.0
Syrian Arab Republic	1	1.3
United kingdom	1	0.0
Viet Nam	1	1.3
Zambia	1	1.3
Zimbabwe	2	1.3
Unknown	17	16.7
<b>Total</b>	<b>147</b>	<b>100.0</b>



**Figure 2: Number of TB notifications by year and quarter of notification and geographic origin, 2002-Q1&2 2015**

### Case ascertainment

Table 6 summarises the method by which reported cases were detected in Q1 and Q2 2015.

**Table 6: Number and percentage of TB notifications by method of case finding, Q1 & Q2 2015**

Found by	Number of TB Cases	% Total
Presenting as case	115	78.2
Contact tracing	8	5.4
Immigrant screening	0	0.0
Post-mortem diagnosis	0	0.0
Pre-employment screening	0	0.0
Other	7	4.8
Not reported	17	11.6
<b>Total</b>	<b>147</b>	<b>100.0</b>



### Diagnostic categories

Cases are classified into one of three diagnostic categories based on the site of disease. Table 7 summarises the available data for each HSE area.

**Table 7 Number and percentage of TB notifications by diagnostic type and HSE area, Q1 & Q2 2015**

HSE area	Pulmonary	Pulmonary & Extrapulmonary (P+E)	Extrapulmonary	Not reported	Total
HSE-E	33	3	19	5	<b>60</b>
HSE-M	7	0	4	1	<b>12</b>
HSE-MW	7	0	1	0	<b>8</b>
HSE-NE	5	0	1	1	<b>7</b>
HSE-NW	5	2	4	0	<b>11</b>
HSE-SE	4	0	4	0	<b>8</b>
HSE-S	19	1	12	0	<b>32</b>
HSE-W	7	0	2	0	<b>9</b>
<b>Total</b>	<b>87</b>	<b>6</b>	<b>47</b>	<b>7</b>	<b>147</b>
<b>%</b>	<b>59.2</b>	<b>4.1</b>	<b>32.0</b>	<b>4.8</b>	<b>100.0</b>

Fifty-three cases (36.1%) had an extra-pulmonary disease component reported (table 8).

**Table 8: Number and percentage of TB notifications by extrapulmonary site of disease, Q1 & Q2 2015**

Extrapulmonary sites	Number of TB cases	% Total
Lymphatic extrathoracic	19	35.8
Pleural	7	13.2
Peritoneal/digestive	6	11.3
Lymphatic intrathoracic	5	9.4
Spine	3	5.7
Bone/joint other than spine	2	3.8
Disseminated	2	3.8
Genito-urinary	2	3.8
Other	4	7.5
Not reported	3	5.7
<b>Total</b>	<b>53</b>	<b>100.0</b>

### TB meningitis

No cases of TB meningitis were reported during Q1 and Q2 2015.

## Microbiological results:

### *Sputum-smear status - first sample*

Of the 93 cases with a pulmonary component reported during Q1 and Q2 2015, 43 (46.2%) were sputum smear positive at diagnosis. Fifteen of these cases (34.9%) reported a second sputum smear positive result.

### *Culture – first sample and isolates*

In Q1 and Q2 2015, 96 cases (65.3%) were culture positive, 13 (8.8%) were culture negative and eight (5.4%) were reported as not having been culture tested (table 9). Culture result was not reported for the remaining 30 cases (20.4%).

Of the 96 culture positive cases, *M. tuberculosis* was isolated in 89 (92.7%) and *M. tuberculosis* complex<sup>§</sup> in seven (7.3%).

**Table 9: Number and percentage of TB notifications by first culture result and HSE area, Q1 & Q2 2015**

Culture	HSE E	HSE M	HSE MW	HSE NE	HSE NW	HSE SE	HSE S	HSE W	Total	% Total
Culture positive	41	8	6	4	6	5	20	6	<b>96</b>	<b>65.3</b>
Culture negative	0	1	1	0	1	1	8	1	<b>13</b>	<b>8.8</b>
Not done	2	1	0	0	4	1	0	0	<b>8</b>	<b>5.4</b>
Not reported	17	2	1	3	0	1	4	2	<b>30</b>	<b>20.4</b>
<b>Total</b>	<b>60</b>	<b>12</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>8</b>	<b>32</b>	<b>9</b>	<b>147</b>	<b>100.0</b>

### *MIRU VNTR results*

Of the 96 culture positive cases, MIRU-VNTR typing results were reported for 82 cases (85.4%). Of the 82 typed isolates, 75 (91.5%) were unique. Seven isolates had a 24 loci match with one of more typed isolates. These clusters comprised one cluster of three matching isolates and two clusters of two matching isolates each. The cluster with three matching isolates was part of an already documented cluster investigated by public health.

### *Antibiotic resistance*

Of the 96 culture positive cases reported, 92 (95.8%) had drug sensitivity details completed. Resistance was reported in four cases (4.3% of 92 cases with drug sensitivity data reported and 2.7% of total cases reported).

*Mycobacterium tuberculosis* was isolated in all four resistant cases, one of whom reported a previous history of TB. Three resistant cases were born outside Ireland (table 10).

No cases of multidrug-resistant (MDR) TB were notified for this period\*\*.

<sup>§</sup> Species of mycobacteria not specified

\*\* MDR TB is defined as a TB case resistant to at least isoniazid and rifampicin with or without resistance to ethambutol and streptomycin.

**Table 10: Sensitivity results of drug resistant TB cases in Ireland, Q1 & Q2 2015**

Isolate	Isoniazid sensitivity	Rifampicin sensitivity	Ethambutol sensitivity	Pyrazinamide sensitivity	Streptomycin sensitivity	Previous history of TB disease	Born outside Ireland	Age group (years)
M. tb	R	S	S	S	R	No	Yes	35-44
M. tb	R	S	S	S	S	No	Yes	25-34
M. tb	R	S	S	S	S	Yes	Yes	65+
M. tb	S	S	S	S	R	No	No	65+

### Chest X-ray

Fifty-one cases with a pulmonary component (54.8% of pulmonary cases) had X-ray findings consistent with active pulmonary TB (table 11).

**Table 11: Chest X-ray results of TB cases with a pulmonary component, Q1 & Q2 2015**

Chest X-ray	Number of TB cases	% Total
Active Cavitory TB	20	21.5
Active Non-cavitory TB	31	33.3
Inactive/Old TB	3	3.2
Normal	3	3.2
Other	8	8.6
Not done	1	1.1
Not reported	27	29.0
<b>Total</b>	<b>93</b>	<b>100.0</b>

### Previous history

During Q1 and Q2 2015, 10 cases (6.8% of total reported) had a previous history of TB. Four of these cases were born outside Ireland. Year of previous diagnosis ranged from 1992 to 2014 for these cases.

### HIV status

HIV status was reported for 31 (21.1%) TB cases. Three TB cases were reported as HIV positive (2.0% of total case, 9.7% of cases with known HIV status) while 28 cases were reported as HIV negative (19.0% of total case, 90.3% of cases with known HIV status).

### Outcome

Two deaths were reported during Q1 and Q2 2015. One death was not due to TB and cause of death for the remaining case was not available at the time of this report.

### Outbreaks<sup>††</sup>

Two TB outbreaks were reported to HPSC during Q1 and Q2 2015. One was a family outbreak occurring in a family house with four TB cases, one of whom was hospitalised. The remaining outbreak was a general outbreak in a workplace with four TB cases and 35 cases of latent TB infection (LTBI).

<sup>††</sup> Outbreak data taken from CIDR on 18/08/2015

## Appendix 1:

**Table A1: TB notifications, 3 year moving average and crude incidence rate by year**

Year	Number of cases	3 year moving average - Cases	Crude rate per 100,000 population
1991	640		18.2
1992	604	612	17.1
1993	598	581	17.0
1994	524	526	14.5
1995	458	469	12.6
1996	434	436	12.0
1997	416	423	11.5
1998	424	433	11.7
1999	469	439	12.9
2000	395	410	10.1
2001	381	392	9.7
2002	410	402	10.5
2003	406	413	10.4
2004	433	430	10.2
2005	448	448	10.6
2006	463	464	10.9
2007	481	473	11.3
2008	467	474	11.0
2009	479	461	10.4
2010	420	433	9.2
2011	413	403	9.0
2012	364	376	7.8
2013	372	355	8.1
2014*	318		6.9