



## **National TB Surveillance**

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

### **Quarter 2 2017 TB Report**

Report produced 22<sup>nd</sup> August 2017\*

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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 14/08/2017

## Introduction

This quarter 2 2017 TB report presents an epidemiological summary of the cases of tuberculosis (TB) notified to eight HSE areas in Ireland during the period 1<sup>st</sup> January to 30<sup>th</sup> June 2017.

Enhanced TB notification forms are completed by public health doctors for each case of TB notified. These forms summarise all available clinical, microbiological, histological and epidemiological data. Forms are then collated in the regional departments of public health and entered onto the Computerised Infectious Disease Reporting (CIDR) system. HPSC produces a quarterly TB report using notification data reported by HSE areas to the CIDR system. Further information on TB as available at [www.hpsc.ie](http://www.hpsc.ie).

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

### Quarter 1-2 2017 Summary:

- 168 TB cases were notified to HPSC
- HSE East reported the highest number of cases at 97 (57.7% 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 (25.6%)
- 50.6% of cases were born in Ireland, 38.7% were foreign born and 10.7% did not report country of birth
- No cases of TB meningitis were notified
- 98 cases (58.3%) were culture positive, eight (4.8%) were culture negative and three (1.8%) were reported as not having been culture tested ([table 7](#)). Culture result was not reported for the remaining 59 cases (35.1%).
- *Mycobacterium tuberculosis* was isolated in 89 (90.8%), *M. tuberculosis* complex in eight (8.2%) and *M. bovis* in one (1.0%).
- Amongst culture positive cases, 88 (89.8%) had drug sensitivity details
- Resistance was reported in seven cases. No multidrug resistant<sup>†</sup> (MDR-TB) or extensively drug resistant<sup>‡</sup> (XDR-TB) cases were reported.
- HIV status was reported for 46 TB cases (27.4%), eight (17.4%) of whom tested positive for HIV and 38 (82.6%) tested negative for HIV
- No TB outbreaks were reported during this period

<sup>†</sup> Multidrug-resistant (MDR-TB) is defined as a TB case resistant to at least isoniazid and rifampicin with or without resistance to ethambutol and streptomycin.

<sup>‡</sup> Extensively drug-resistant TB (XDR-TB) is defined as a TB strain resistant to any fluoroquinolone (such as levofloxacin or moxifloxacin) and at least one of three injectable second-line drugs (capreomycin, kanamycin and amikacin), in addition to MDR-TB

## Results

### Total cases of tuberculosis notified in Q1-2 2017

There were 168 cases of TB notified during this period. The number of cases notified in each HSE area and Local Health Area (LHO) is shown in [table 1](#) and [figure 1](#). [Figure A1](#), appendix 1 displays the annual number of TB notifications, 3 year moving average and crude incidence rate.

**Table 1: Number and percentage of TB notifications by HSE area, Q1-2 2017**

HSE Area	Number of TB cases	% of Total	Local Health Office	Number of TB cases
East	97	57.7	Dublin South	7
			Dublin South East	8
			Dublin South City	11
			Dublin South West	6
			Dublin West	14
			Dublin North West	14
			Dublin North Central	13
			Dublin North	10
			Kildare/West Wicklow	10
			Wicklow	4
Midland	8	4.8	Longford/Westmeath	6
			Laois/Offaly	2
Mid-West	3	1.8	Clare	1
			Limerick	2
			Tipperary N	0
North East	9	5.4	Cavan	2
			Louth	1
			Meath	5
			Monaghan	1
North West	8	4.8	Donegal	7
			Sligo/Leitrim	1
South	21	12.5	Kerry	5
			North Cork	4
			North/South Lee	12
			West Cork	0
South East	16	9.5	Carlow/Kilkenny	2
			Tipperary S	5
			Waterford	5
			Wexford	4
West	6	3.6	Galway	3
			Mayo	3
			Roscommon	0
Ireland	168	100.0	Total	168

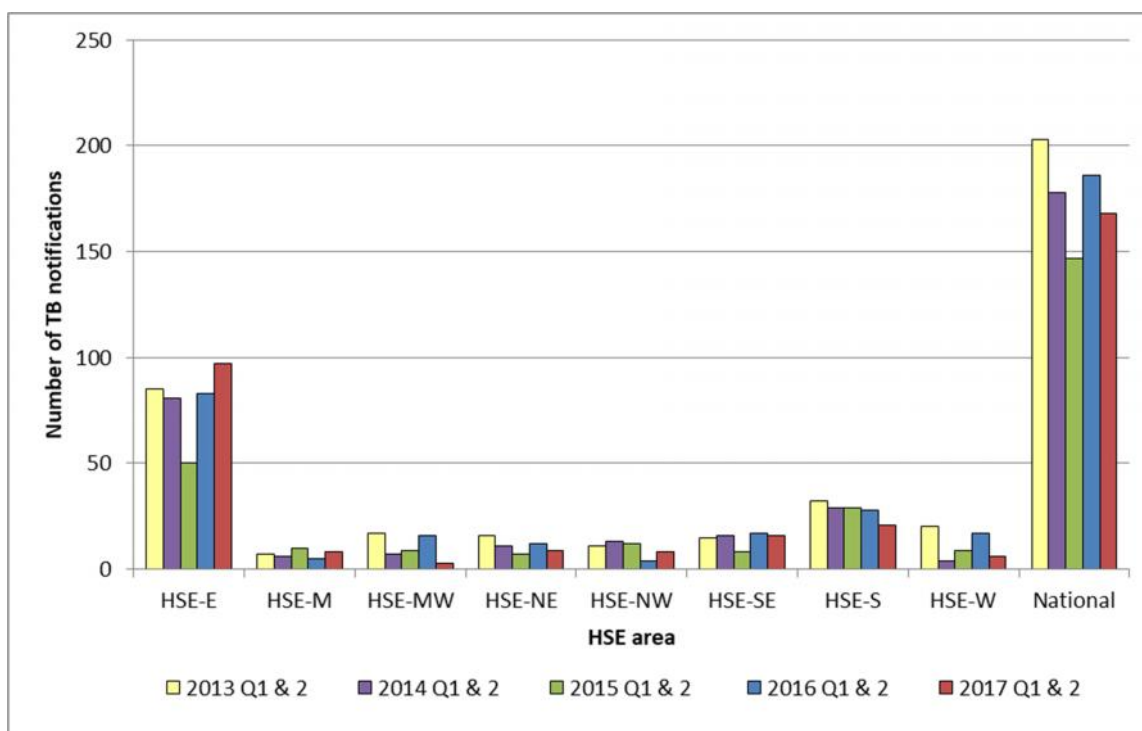


Figure 1: Number of TB notifications by HSE area, Q1-2 2013-2017

### Age groups

A breakdown of cases by age group and HSE area is shown in [table 2](#) while [figure 2](#) displays the trend in the 0-14 year age group by year. During this period, four cases were reported in the 0-14 year age group, three of whom were born in Ireland. Three of the cases were contacts of a case of TB and one had travelled to a high endemicity area.

Table 2: Number and percentage of TB notifications by age group and HSE area, Q1-2 2017

Age group (years)	HSE-E	HSE-M	HSE-MW	HSE-NE	HSE-NW	HSE-SE	HSE-S	HSE-W	Total	% Total
0-4	2					1			3	1.8
5-9	1								1	0.6
10-14									0	0.0
15-19	3			1		1		1	6	3.6
20-24	7	1					3	1	12	7.1
25-34	16	1	1	3		1	2	1	25	14.9
35-44	20	4	1	1	2	4	5	1	38	22.6
45-54	10			2	2	4	3	1	22	13.1
55-64	13			2		1	2		18	10.7
65+	25	2	1		4	4	6	1	43	25.6
Unk									0	0.0
<b>Total</b>	<b>97</b>	<b>8</b>	<b>3</b>	<b>9</b>	<b>8</b>	<b>16</b>	<b>21</b>	<b>6</b>	<b>168</b>	<b>100.0</b>

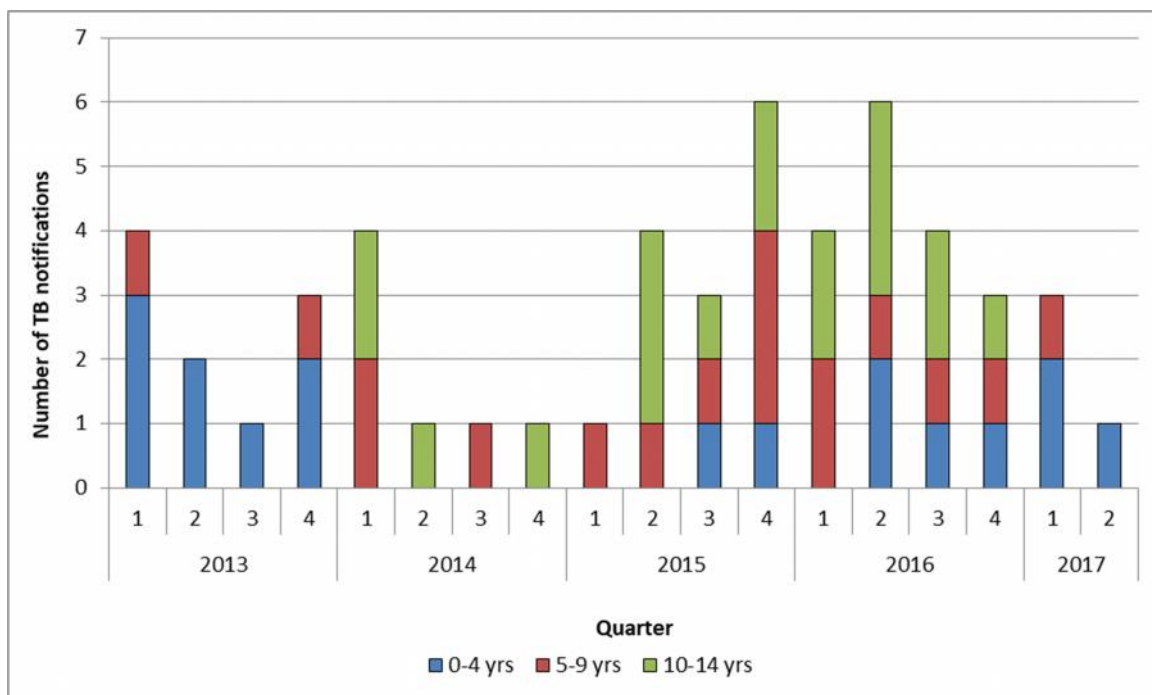


Figure 2: Number of notifications in 0-14 year age group by quarter and year Q1 2013-Q2 2017

## Sex

There were 67 females (39.9%) and 101 males (60.1%), corresponding to a male to female ratio of 1.5:1.

## Country of origin

Of the 168 cases reported during this period, 85 (50.6%) were born in Ireland and 65 (38.7%) were born outside Ireland. Country of birth was not reported for 18 (10.7%) cases. [Table 3](#) summarises the regions of origin for cases.

Of the 65 cases born outside Ireland, seven (10.8%) were reported as asylum seekers or refugees (three from HSE-E, two from HSE-M and one each from HSE-SE and -W). [Figure 3](#) shows the annual number of TB cases by geographic origin from Q1-2 2013 to Q1-2 2017.

Table 3: TB notifications by region of origin, Q1-2 2017

Region of origin	Number	%
Ireland	85	50.6
Western Europe	2	1.2
South Asia	25	14.9
Sub-Saharan Africa	18	10.7
Eastern Europe	14	8.3
Central Europe	3	1.8
South America	2	1.2
Eastern Asia / Pacific	1	0.6
Country of birth not reported	18	10.7
<b>Total</b>	<b>168</b>	<b>100.0</b>

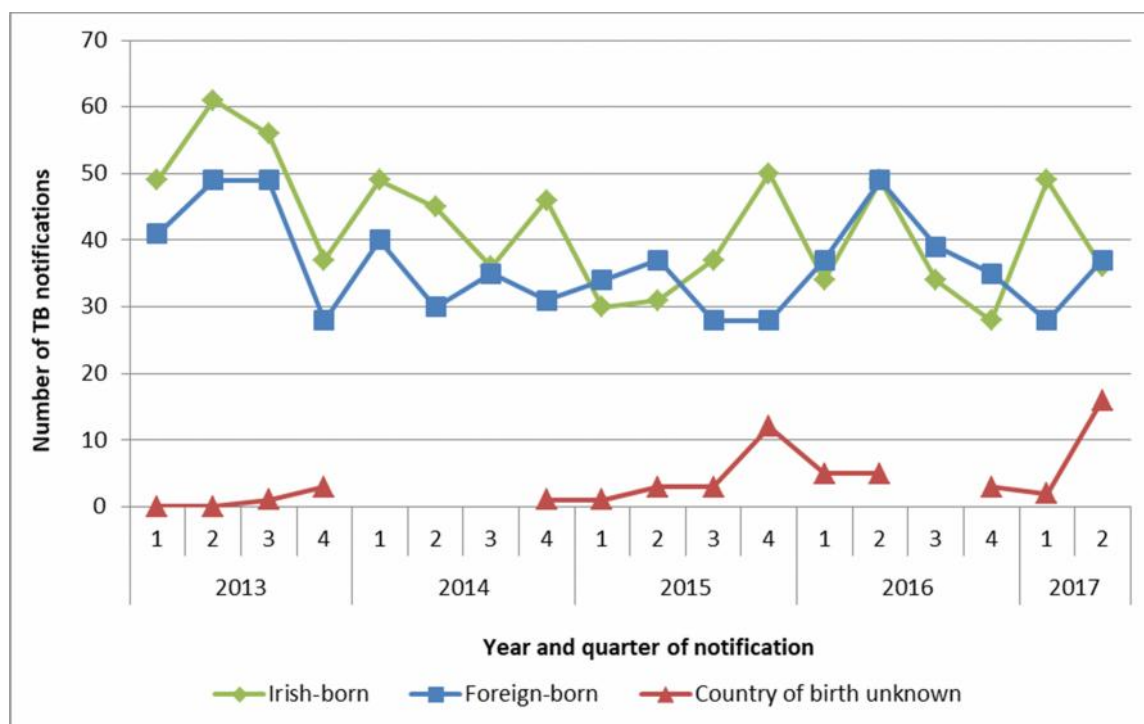


Figure 3: Number of TB notifications by year and quarter of notification and geographic origin, Q1-2013 to Q2 2017

### Case ascertainment

[Table 4](#) summarises the method by which reported cases were detected. The majority of cases (70.2%) presented as clinical cases.

Table 4: Number and percentage of TB notifications by method of case finding, Q1-2 2017

Found by	Number of TB cases	% Total
Presenting as case	118	70.2
Contact tracing	8	4.8
Post-mortem diagnosis	4	2.4
Pre-employment screening	1	0.6
Other	6	3.6
Not reported	31	18.5
<b>Total</b>	<b>168</b>	<b>100.0</b>

### Diagnostic categories

Cases are classified into one of three diagnostic categories based on the site of disease. [Table 5](#) summarises the available data for each HSE area. Fifty-three cases (31.5%) had an extra-pulmonary disease component reported ([table 6](#)). No cases of TB meningitis were reported during this period.

**Table 5: Number and percentage of TB notifications by diagnostic type and HSE area, Q1-2 2017**

HSE area	Pulmonary	Pulmonary & extrapulmonary (P+E)	Extrapulmonary	Not reported	Total
HSE-E	74	3	19	1	<b>97</b>
HSE-M	5	0	2	1	<b>8</b>
HSE-MW	2	1	0	0	<b>3</b>
HSE-NE	3	0	2	4	<b>9</b>
HSE-NW	2	2	4	0	<b>8</b>
HSE-SE	8	0	8	0	<b>16</b>
HSE-S	12	2	7	0	<b>21</b>
HSE-W	3	1	2	0	<b>6</b>
<b>Total</b>	<b>109</b>	<b>9</b>	<b>44</b>	<b>6</b>	<b>168</b>
<b>%</b>	<b>64.9</b>	<b>5.4</b>	<b>26.2</b>	<b>3.6</b>	<b>100.0</b>

**Table 6: Number and percentage of TB notifications by extrapulmonary site of disease, Q1-2 2017**

Extrapulmonary sites	Number of TB cases	% Total
Lymphatic extrathoracic	15	28.3
Pleural	9	17.0
Lymphatic intrathoracic	8	15.1
Bone/joint other than spine	3	5.7
Genito-urinary	3	5.7
Peritoneal/digestive	2	3.8
Disseminated	1	1.9
Other	4	7.5
Site not reported	8	15.1
<b>Total</b>	<b>53</b>	<b>100.0</b>

## Microbiological results:

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

Of the 118 cases with a pulmonary component reported, 53 (44.9%) were sputum smear positive at diagnosis. Of the smear positive cases, 24 (45.3%) reported a second sputum smear positive result.

### *Culture – first sample and isolates*

Of the 168 cases reported during this period, 98 cases (58.3%) were culture positive, eight (4.8%) were culture negative and three (1.8%) were reported as not having been culture tested ([table 7](#)). Culture result was not reported for the remaining 59 cases (35.1%).

Of the 98 culture positive cases, *M. tuberculosis* was isolated in 89 (90.8%), *M. tuberculosis* complex in eight (8.2%) and *M. bovis* in one (1.0%).

**Table 7: Number and percentage of TB notifications by first culture result and HSE area, Q1-2 2017**

Culture	HSE E	HSE M	HSE MW	HSE NE	HSE NW	HSE SE	HSE S	HSE W	Total	% Total
Culture positive	54	5	2	5	5	10	14	3	<b>98</b>	<b>58.3</b>
Culture negative	1				3	1	1	2	<b>8</b>	<b>4.8</b>
Not done	1		1			1			<b>3</b>	<b>1.8</b>
Not reported	41	3		4		4	6	1	<b>59</b>	<b>35.1</b>
<b>Total</b>	<b>97</b>	<b>8</b>	<b>3</b>	<b>9</b>	<b>8</b>	<b>16</b>	<b>21</b>	<b>6</b>	<b>168</b>	<b>100.0</b>

**Molecular typing results**

Of the 98 culture positive cases, MIRU-VNTR typing results were reported for 57 cases (58.2%).  
Of the 57 typed isolates, all were unique within this period.

**Antibiotic resistance**

Of the 98 culture positive cases reported, 88 (89.8%) had drug sensitivity details completed. Resistance was reported in seven cases (8.0% of 88 cases with drug sensitivity data reported and 4.2% of total cases reported). Details of the resistant case are presented in [table 8](#).

No MDR-TB or XDR-TB cases were reported during this period.

**Table 8: Sensitivity results of drug resistant TB cases in Ireland, Q1-2 2017**

Isolate	Isoniazid sensitivity	Rifampicin sensitivity	Ethambutol sensitivity	Pyrazinamide sensitivity	Streptomycin sensitivity	Previous history of TB disease	Born outside Ireland	Age group
<i>M. tb</i>	S	S	S	<b>R</b>	S	No	Yes	65+
<i>M. tb</i>	S	S	S	S	<b>R</b>	Unk	No	45-54
<i>M. tb</i>	<b>R</b>	S	S	S	<b>R</b>	No	Yes	35-44
<i>M. tb</i>	S	S	S	<b>R</b>	S	Yes	Yes	35-44
<i>M. tb</i>	<b>R</b>	S	S	S	S	Unk	Yes	35-44
<i>M. tb</i>	<b>R</b>	S	S	S	<b>R</b>	No	Yes	25-34
<i>M. tb</i>	S	S	S	S	<b>R</b>	No	No	25-34

**R=resistant; S=sensitive; M. tb = *M. tuberculosis***



## Chest X-ray

Sixty-eight cases with a pulmonary component (57.6% of pulmonary cases) had X-ray findings consistent with active pulmonary TB (table 9).

**Table 9: Chest X-ray results of TB cases with a pulmonary component, Q1-2 2017**

Chest X-ray	Number of TB cases	% Total
Active Cavitary TB	27	22.9
Active Non-cavitary TB	41	34.7
Inactive/Old TB	1	0.8
Other	6	5.1
Normal	3	2.5
Not done	2	1.7
Not reported	38	32.2
<b>Total</b>	<b>118</b>	<b>100.0</b>

## Previous history

Twelve cases (7.1% of total reported) had a previous history of TB. Seven of these cases were born outside Ireland. Year of previous diagnosis ranged from 1950 to 2016 for these cases.

## HIV status

HIV status was reported for 46 (27.4%) TB cases. Of these 46 TB cases, eight (17.4%) tested positive for HIV and 38 (82.6%) tested negative for HIV.

## Outcome

Nine TB deaths were reported during this period. Cause of death was reported as due to TB for two cases, not due to TB for three cases, awaiting a coroner's report for one case while the remaining three cases were either pending or unknown.

## Outbreaks§

No TB outbreaks were reported to HPSC during this period.

§ Outbreak data taken from CIDR on 14/08/2017

## Appendix 1:

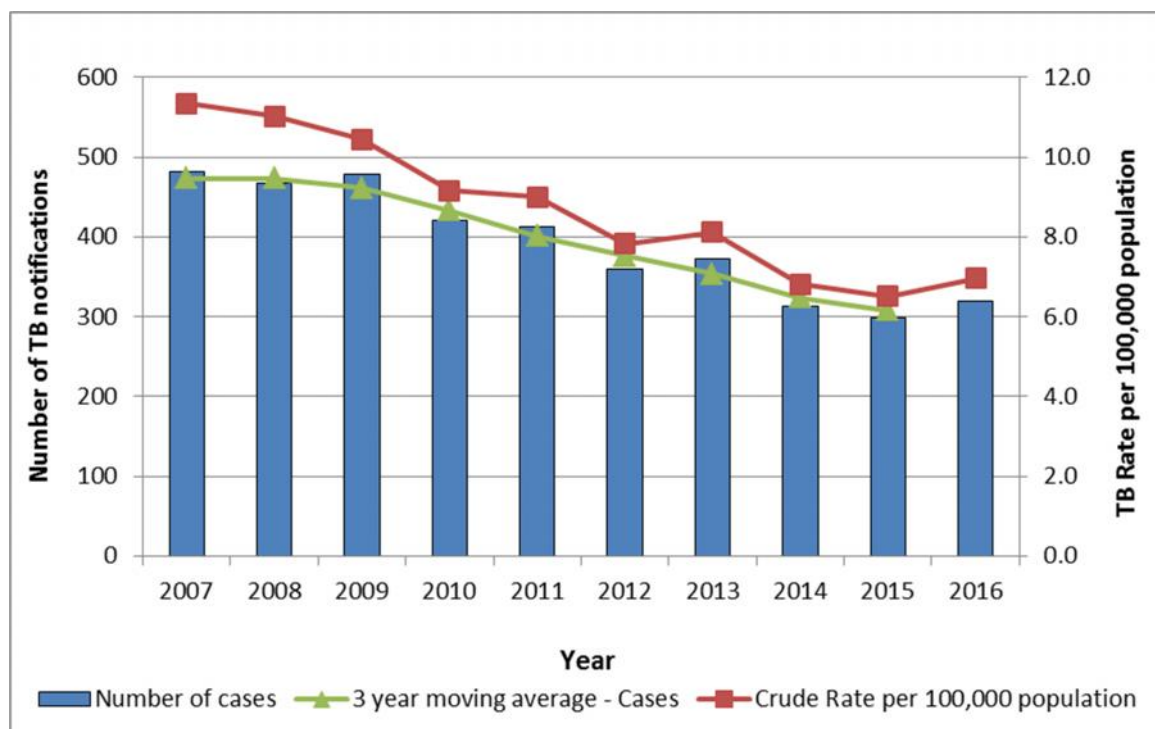


Figure A1: TB notifications, 3 year moving average and crude incidence rate by year-2007-2016