



National TB Surveillance

A report by the Health Protection Surveillance Centre

Quarter 1 2017 TB Report

Report produced 15th May 2017*

* 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 10/05/2017

Introduction

This quarter 1 2017 TB report presents an epidemiological summary of the cases of tuberculosis (TB) notified to eight HSE areas in Ireland during the period 1st January to 31st March 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.

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 2017 Summary:

- 81 TB cases were notified to HPSC
- HSE East reported the highest number of cases at 44 (54.3% 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 (28.4%)
- 53.1% of cases were born in Ireland, 33.3% were foreign born and 13.6% did not report country of birth
- No cases of TB meningitis were notified
- 41 cases (50.6%) were culture positive, three (3.7%) were culture negative and one (1.2%) was reported as not having been culture tested. Culture result was not reported for the remaining 36 cases (44.4%).
- *Mycobacterium tuberculosis* was isolated in 40 (97.6%) and *M. bovis* in one (2.4%)
- Amongst culture positive cases, 34 (82.9%) had drug sensitivity details
- Resistance was reported in one case. No multidrug resistant[†] (MDR-TB) or extensively drug resistant[‡] (XDR-TB) cases were reported.
- HIV status was reported for 26 TB cases (32.1%), six (23.1%) of whom tested positive for HIV and 20 (76.9%) tested negative for HIV
- No TB outbreaks were reported during this period

[†] 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.

[‡] 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 2017

There were 81 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 2017

| HSE Area | Number of TB cases | % of Total | Local Health Office | Number of TB cases |
|-------------------|--------------------|--------------|----------------------|--------------------|
| East | 44 | 54.3 | Dublin South | 1 |
| | | | Dublin South East | 3 |
| | | | Dublin South City | 5 |
| | | | Dublin South West | 4 |
| | | | Dublin West | 4 |
| | | | Dublin North West | 7 |
| | | | Dublin North Central | 7 |
| | | | Dublin North | 4 |
| | | | Kildare/West Wicklow | 7 |
| | | | Wicklow | 2 |
| Midland | 4 | 4.9 | Laois/Offaly | 0 |
| | | | Longford/Westmeath | 4 |
| Mid-West | 2 | 2.5 | Clare | 0 |
| | | | Limerick | 2 |
| | | | Tipperary N | 0 |
| North East | 4 | 4.9 | Cavan | 1 |
| | | | Louth | 0 |
| | | | Meath | 2 |
| | | | Monaghan | 1 |
| North West | 6 | 7.4 | Donegal | 5 |
| | | | Sligo/Leitrim | 1 |
| South | 9 | 11.1 | Kerry | 2 |
| | | | North Cork | 1 |
| | | | North/South Lee | 6 |
| | | | West Cork | 0 |
| South East | 11 | 13.6 | Carlow/Kilkenny | 1 |
| | | | Tipperary S | 3 |
| | | | Waterford | 5 |
| | | | Wexford | 2 |
| West | 1 | 1.2 | Galway | 0 |
| | | | Mayo | 1 |
| | | | Roscommon | 0 |
| Ireland | 81 | 100.0 | Total | 81 |

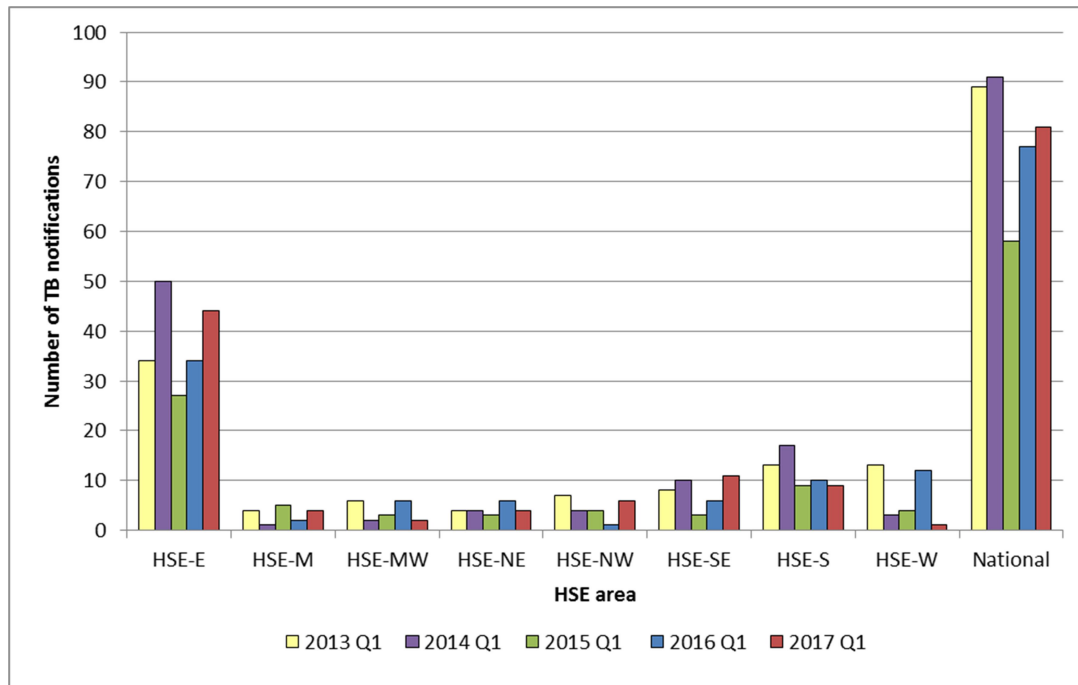


Figure 1: Number of TB notifications by HSE area, Q1 2013-2017

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, three cases were reported in the 0-14 year age group, all of whom were born in Ireland.

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

| Age group (years) | HSE-E | HSE-M | HSE-MW | HSE-NE | HSE-NW | HSE-SE | HSE-S | HSE-W | Total | % Total |
|-------------------|-----------|----------|----------|----------|----------|-----------|----------|----------|-----------|--------------|
| 0-4 | 1 | | | | | 1 | | | 2 | 2.5 |
| 5-9 | 1 | | | | | | | | 1 | 1.2 |
| 10-14 | | | | | | | | | | 0.0 |
| 15-19 | 1 | | | 1 | | | | | 2 | 2.5 |
| 20-24 | 3 | | | | | | 1 | | 4 | 4.9 |
| 25-34 | 7 | 1 | 1 | | | 1 | 1 | | 11 | 13.6 |
| 35-44 | 8 | 2 | 1 | 1 | 2 | 3 | 3 | | 20 | 24.7 |
| 45-54 | 3 | | | 1 | 1 | 2 | 1 | | 8 | 9.9 |
| 55-64 | 7 | 1 | | 1 | | | 1 | | 10 | 12.3 |
| 65+ | 13 | | | | 3 | 4 | 2 | 1 | 23 | 28.4 |
| Unknown | | | | | | | | | 0 | 0.0 |
| Total | 44 | 4 | 2 | 4 | 6 | 11 | 9 | 1 | 81 | 100.0 |

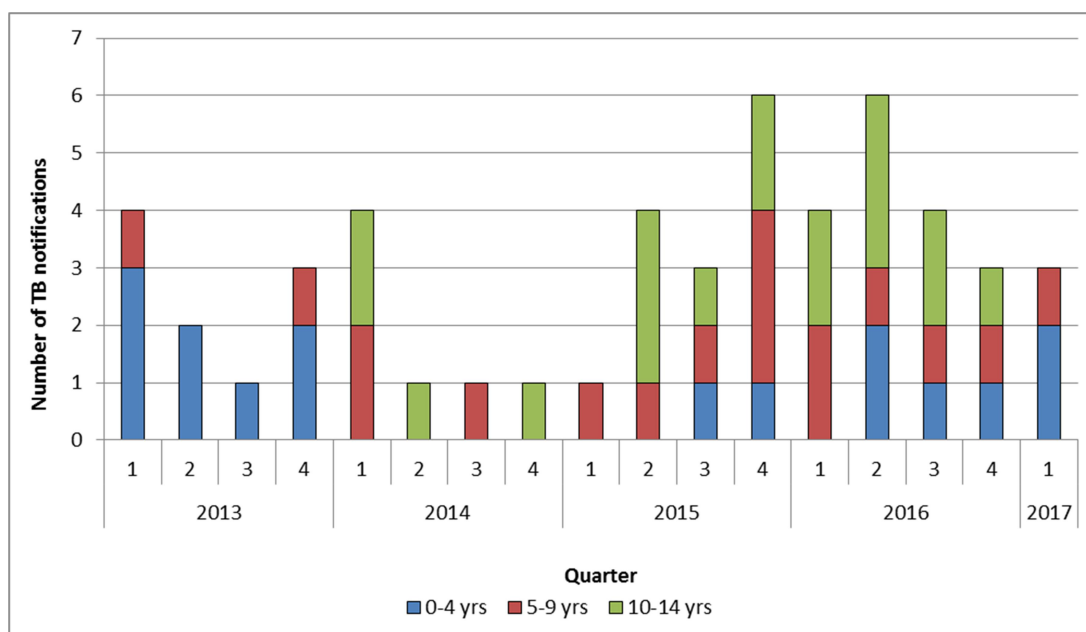


Figure 2: Number of notifications in 0-14 year age group by quarter and year

Sex

There were 32 females (39.5%) and 49 males (60.5%), corresponding to a male to female ratio of 1.5:1.

Country of origin

Of the 81 cases reported during this period, 43 (53.1%) were born in Ireland and 27 (33.3%) were born outside Ireland. Country of birth was not reported for 11 (13.6%) cases. [Table 3](#) summarises the regions of origin for cases.

Of the 27 cases born outside Ireland, two (7.4%) were reported as asylum seekers or refugees (one each from HSE-E and -M). [Figure 3](#) shows the annual number of TB cases by geographic origin from Q1 2013 to Q1 2017.

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

| Region of origin | Number | % |
|-------------------------------|-----------|--------------|
| Ireland | 43 | 53.1 |
| Western Europe | 1 | 1.2 |
| South Asia | 9 | 11.1 |
| Sub-Saharan Africa | 7 | 8.6 |
| Eastern Europe | 6 | 7.4 |
| Central Europe | 2 | 2.5 |
| Eastern Asia / Pacific | 1 | 1.2 |
| South America | 1 | 1.2 |
| Country of birth not reported | 11 | 13.6 |
| Total | 81 | 100.0 |

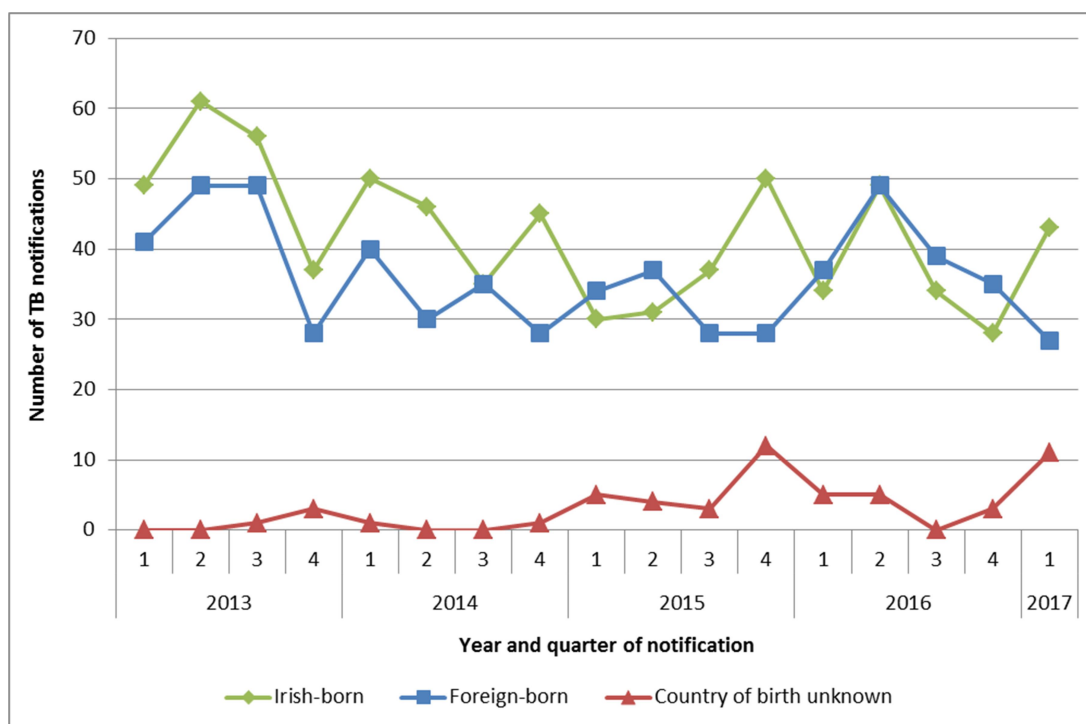


Figure 3: Number of TB notifications by year and quarter of notification and geographic origin, 2013-Q1 2017

Case ascertainment

[Table 4](#) summarises the method by which reported cases were detected. The majority of cases (72.8%) presented as clinical cases.

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

| Found by | Number of TB cases | % Total |
|--------------------------|--------------------|--------------|
| Presenting as case | 59 | 72.8 |
| Contact tracing | 3 | 3.7 |
| Pre-employment screening | 1 | 1.2 |
| Post-mortem diagnosis | 2 | 2.5 |
| Other | 5 | 6.2 |
| Not reported | 11 | 13.6 |
| Total | 81 | 100.0 |

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. Twenty-five cases (30.9%) 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 2017

| HSE area | Pulmonary | Pulmonary & extrapulmonary (P+E) | Extrapulmonary | Not reported | Total |
|--------------|-------------|----------------------------------|----------------|--------------|--------------|
| HSE-E | 32 | 1 | 9 | 2 | 44 |
| HSE-M | 2 | 0 | 1 | 1 | 4 |
| HSE-MW | 2 | 0 | 0 | 0 | 2 |
| HSE-NE | 2 | 0 | 2 | 0 | 4 |
| HSE-NW | 3 | 1 | 0 | 2 | 6 |
| HSE-SE | 5 | 0 | 6 | 0 | 11 |
| HSE-S | 5 | 1 | 3 | 0 | 9 |
| HSE-W | 0 | 0 | 1 | 0 | 1 |
| Total | 51 | 3 | 22 | 5 | 81 |
| % | 63.0 | 3.7 | 27.2 | 6.2 | 100.0 |

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

| Extrapulmonary sites | Number of TB cases | % Total |
|-----------------------------|--------------------|--------------|
| Lymphatic extrathoracic | 8 | 32.0 |
| Pleural | 4 | 16.0 |
| Bone/joint other than spine | 3 | 12.0 |
| Lymphatic intrathoracic | 3 | 12.0 |
| Genito-urinary | 2 | 8.0 |
| Peritoneal/digestive | 2 | 8.0 |
| Other | 2 | 8.0 |
| Not reported | 1 | 4.0 |
| Total | 25 | 100.0 |

Microbiological results:

Sputum-smear status - first sample

Of the 54 cases with a pulmonary component reported, 25 (46.3%) were sputum smear positive at diagnosis. Eleven of these cases (44.0%) reported a second sputum smear positive result.

Culture – first sample and isolates

Of the 81 cases reported during this period, 41 cases (50.6%) were culture positive, three (3.7%) were culture negative and one (1.2%) was reported as not having been culture tested ([table 7](#)). Culture result was not reported for the remaining 36 cases (44.4%).

Of the 41 culture positive cases, *M. tuberculosis* was isolated in 40 (97.6%) and *M. bovis* in one (2.4%).

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

| Culture | HSE E | HSE M | HSE MW | HSE NE | HSE NW | HSE SE | HSE S | HSE W | Total | % Total |
|------------------|-----------|----------|-----------|-----------|-----------|-----------|----------|----------|-----------|--------------|
| Culture positive | 21 | 2 | 1 | 4 | 1 | 6 | 6 | | 41 | 50.6 |
| Culture negative | | | | | 1 | 1 | | 1 | 3 | 3.7 |
| Not done | | | | | | 1 | | | 1 | 1.2 |
| Not reported | 23 | 2 | 1 | | 4 | 3 | 3 | | 36 | 44.4 |
| Total | 44 | 4 | 2 | 4 | 6 | 11 | 9 | 1 | 81 | 100.0 |

Molecular typing results

Of the 41 culture positive cases, MIRU-VNTR typing results were reported for 29 cases (70.7%).
Of the 29 typed isolates, all were unique within this quarter.

Antibiotic resistance

Of the 41 culture positive cases reported, 34 (82.9%) had drug sensitivity details completed.
Resistance was reported in one case (2.9% of 34 cases with drug sensitivity data reported and 1.2% 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 2017

| Isolate | Isoniazid sensitivity | Rifampicin sensitivity | Ethambutol sensitivity | Pyrazinamide sensitivity | Streptomycin sensitivity | Previous history of TB disease | Born outside Ireland | Age group |
|------------------------|--------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|---|----------------------------|--------------|
| <i>M. tuberculosis</i> | R | S | S | S | S | Unk | Yes | 35-44 |

R=resistant; S=sensitive

Chest X-ray

Thirty-three cases with a pulmonary component (61.1% 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 2017

| Chest X-ray | Number of TB cases | % Total |
|------------------------|--------------------|--------------|
| Active cavitary TB | 12 | 22.2 |
| Active non-cavitary TB | 21 | 38.9 |
| Inactive/old TB | 1 | 1.9 |
| Other | 4 | 7.4 |
| Normal | 2 | 3.7 |
| Not done | 1 | 1.9 |
| No reported | 13 | 24.1 |
| Total | 54 | 100.0 |

Previous history

Three cases (3.7% of total reported) had a previous history of TB. Two of these cases were born outside Ireland. Year of previous diagnosis ranged from 1991 to 2014 for these cases.

HIV status

HIV status was reported for 26 (32.1%) TB cases. Of these 26 TB cases, six (23.1%) tested positive for HIV and 20 (76.9%) tested negative for HIV.

Outcome

Five TB deaths were reported during this period. Cause of deaths was reported as due to TB for two cases, not due to TB for two cases while cause of death was pending for the remaining case.

Outbreaks[§]

No TB outbreaks were reported to HPSC during this period.

Acknowledgements:

Sincere thanks are extended to all those who participated in the collection of data used in this report. This includes the notifying physicians, public health doctors, surveillance scientists, microbiologists, nurses, laboratory staff and administrative staff.

[§] Outbreak data taken from CIDR on 10/05/2017

Appendix 1:

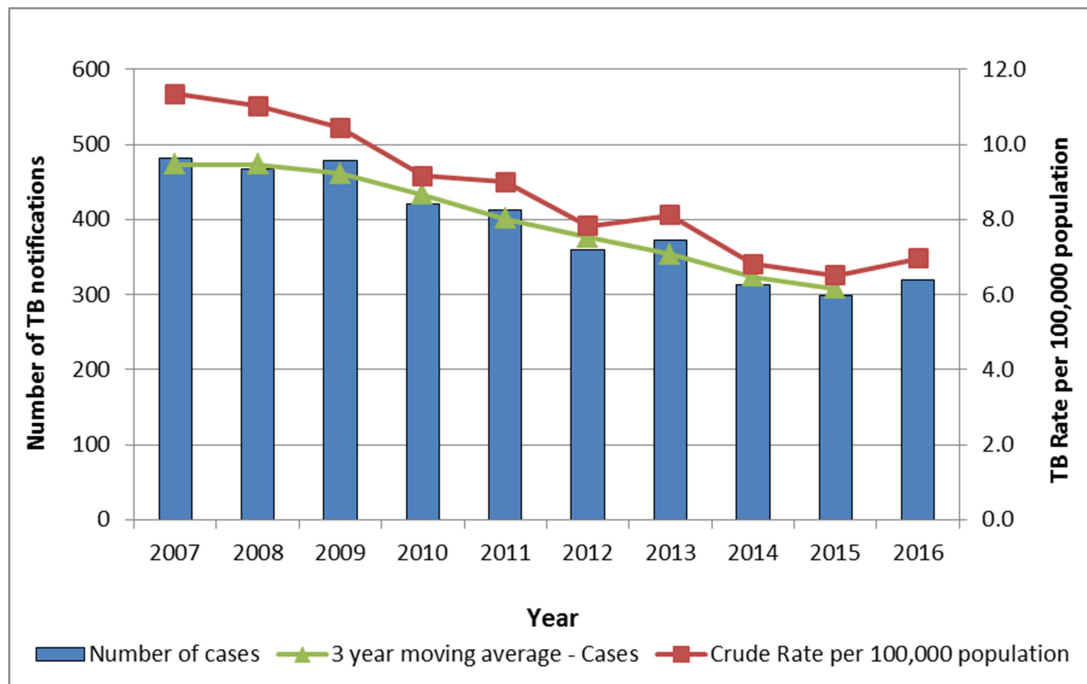


Figure A1: TB notifications, 3 year moving average and crude incidence rate by year