TUBERCULOSIS IN JAPAN

ANNUAL REPORT – 2020
About the Tuberculosis Surveillance Center

The Tuberculosis Surveillance Center, located within the Department of Epidemiology and Clinical Research, the Research Institute of Tuberculosis, Japan, is committed to providing technical support for the national computerized tuberculosis surveillance system, as well as compiling annual TB report, analyzing surveillance data and disseminating findings to all those involved in TB control in Japan.

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Published October 2020
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Acknowledgement

This report was prepared by the Tuberculosis Surveillance Center, Department of Epidemiology and Clinical Research, the Research Institute of Tuberculosis, Japan. The authors gratefully acknowledge all those who contributed information on TB cases in Japan, including physicians, public health nurses, microbiologists and administrative staff.

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Notes on the report

This report presents detailed data on TB case notifications made to the Japan TB Surveillance System to the end of 2019. It is largely based on the Book of TB Statistics, published by the Japan Anti-Tuberculosis Association, and available as a printed report in Japanese, however, several additional and original analyses are made for international readers.

All figures in this report are available for download as a separate slide set also at http://www.jata.or.jp/rit/ekigaku/en/statistics-of-tb/.
Chapter 1: Tuberculosis case report, 2010-2019

Overall numbers and rates:

In 2019, 14,460 cases of tuberculosis (TB) were newly notified, and the notification rate per 100,000 population was 11.5 for all TB.

As shown in Figure 1, both the number of new cases and notification rates per 100,000 have continued to decline steadily towards the national target of below 10 per 100,000 by year 2020 (see also Table s1).

Figure 1. TB notification and rates, 2010-2019
Age and sex:

In 2019, 58.9% of the notified cases were males (8,521 / 14,460) and 41.1% were females (5,939 / 14,460).

The largest number of cases were diagnosed among those aged 85 to 89 (2,110 cases, a rate of 58.4 per 100,000), followed by those aged 90+ (1,967 cases, a rate of 85.2 per 100,000). The rates were consistently higher among males than females in all age groups except among those aged 0 to 4 (see Table s2).

Among the elderly aged 65 and above, only the age group 85 years old and above had continued to increase in the number of cases until 2014 – however, since 2016, the number has begun to decline (Figure 2, see also Table s3).
Geographical distribution:

In terms of regional disparities, large variation existed between the 47 prefectures of Japan, with the notification rate ranging from 6.8 per 100,000 in Iwate and Akita prefecture to 18.4 per 100,000 in Osaka prefecture (Map 1, see also Table s4). In 22 of the 47 prefectures, the notification rate has decreased to below the national target of 10 per 100,000.

Map 1: TB notification rate by 47 prefectures of Japan, 2019

Occupation:

In 2019, among those aged 25 to 64, 73.3% (2,902 / 3,960) had some sort of job\(^1\), while 18.3% (725 / 3,960) were unemployed, 2.3% (92 / 3,960) were houseworkers and 3.5% (138 / 3,960) were students. 2.6% (103 / 3,960) were recorded as “job unknown” (see Table s5).

\(^1\) Note that the 2,902 includes those whose job was recorded as "others" (n=115). This had been reclassified as “unemployed” until previous year, but is now not.
Social risk factors among those aged 25-64:

Social risk factors (SRF) are defined as the following: those either currently homeless or with history of being homeless within one year of diagnosis (“homeless”), those unemployed (“unemployed”), those receiving social welfare benefit at the time of diagnosis (“on social welfare”), and those not covered under any health insurance at the time of diagnosis, including those “eligible” but not being able to pay the premiums, and thus practically are not able to access the necessary health services (“no insurance”). “Homelessness”, “unemployed”, and “on social welfare” and “no insurance”, are not mutually exclusive.

The demographic characteristics of those with each SRF by sex, age groups and country of birth are summarized in Table 1. The proportions of those with SRFs are also summarized in Tables s6.a-s6.d. The proportions of those with SRFs tended to be higher among men than women, except being unemployed, among older than younger patients, and Japan-born than foreign-born patients.

Table 1. Characteristics of those with SRFs, by type of SRF, 2019

<table>
<thead>
<tr>
<th></th>
<th>Homeless</th>
<th>Unemployed</th>
<th>On social welfare</th>
<th>No insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59</td>
<td>100.0</td>
<td>725</td>
<td>100.0</td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>94.9</td>
<td>439</td>
<td>60.6</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>5.1</td>
<td>286</td>
<td>39.4</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>4</td>
<td>6.8</td>
<td></td>
<td>9.9</td>
</tr>
<tr>
<td>35-44</td>
<td>10</td>
<td>16.9</td>
<td>109</td>
<td>15.0</td>
</tr>
<tr>
<td>45-54</td>
<td>20</td>
<td>33.9</td>
<td>202</td>
<td>27.9</td>
</tr>
<tr>
<td>55-64</td>
<td>25</td>
<td>42.4</td>
<td>342</td>
<td>47.2</td>
</tr>
<tr>
<td>Country of birth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign-born</td>
<td>1</td>
<td>1.7</td>
<td>107</td>
<td>14.8</td>
</tr>
<tr>
<td>Japan-born</td>
<td>57</td>
<td>96.6</td>
<td>603</td>
<td>83.2</td>
</tr>
<tr>
<td>COB* unknown</td>
<td>1</td>
<td>1.7</td>
<td>15</td>
<td>2.1</td>
</tr>
</tbody>
</table>

COB = country of birth
Clinical characteristics:

In 2019, of the 14,460 newly notified cases, 76.7% (11,094 / 14,460) had pulmonary disease, either with or without concomitant extra-pulmonary disease, while 23.3% (3,366 / 14,460) had exclusive extra-pulmonary disease. Of the pulmonary TB cases, 86.7% (9,613 /11,094) were bacteriologically confirmed, while the proportion was much less at 49.1% (1,652/3,366) among those with exclusive extra-pulmonary disease (Table 2).

Of the 11,094 pulmonary cases, history of previous TB was known for 98.7% (10,947 / 11,094). Among newly notified pulmonary cases with known history of previous TB, 95.0% (10,405 /10,947) were new cases. Of the 3,326 extra-pulmonary cases with known history of previous TB, 96.2% (3,201 / 3,326) were new cases (Table 2).

Looking at clinical characteristics by age groups, the proportion of bacteriologically confirmed among the pulmonary cases tended to increase with age, with 30.0% among those aged 0-4 compared with 94.5% among those aged 85 and above. The proportion of bacteriologically confirmed among the extra-pulmonary cases remained relatively constant among those aged 15 years old and above, and was the highest among those aged 25-34 at 60.7%, and the lowest among those aged 65-74 at 44.3%. Out of 13 cases of extra-pulmonary cases diagnosed among those aged 0-14, 4 were bacteriologically confirmed (Figure 3, see also Table s7).
PTB = pulmonary tuberculosis, EPTB = extra-pulmonary tuberculosis
Clin = clinically confirmed, bac = bacteriologically confirmed
Chapter 2: Foreign-born TB, 2010-2019

Overall number and rates:

Information regarding place of birth (Japan-born/foreign-born) was known for 97.6% of the newly notified cases (14,108 / 14,460). Of those cases, 10.9% was born outside Japan (1,541 / 14,108). Both the number of case notification per 100,000 have continued to increase, however it slightly decreased in 2019. (Figure 4, see also Table s8).

Figure 4. Foreign-born TB notification and rates, 2010-2019
Age and sex:

In 2019, 53.8% of the foreign-born cases were males (829 / 1,541) and 46.2% were females (712 / 1,541). The largest number of cases were diagnosed among those aged 15 to 24 (554 cases), followed by those aged 25 to 34 (549 cases). 71.6% (1,103/1,541) of foreign-born persons were aged between 15 and 34 (Table 3).

Table 3: Foreign-born TB cases* by sex and age groups, 2019

<table>
<thead>
<tr>
<th>Age group</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>0-4</td>
<td>2</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>5-14</td>
<td>8</td>
<td>0.5</td>
<td>7</td>
</tr>
<tr>
<td>15-24</td>
<td>554</td>
<td>36.0</td>
<td>345</td>
</tr>
<tr>
<td>25-34</td>
<td>549</td>
<td>35.6</td>
<td>305</td>
</tr>
<tr>
<td>35-44</td>
<td>186</td>
<td>12.1</td>
<td>66</td>
</tr>
<tr>
<td>45-54</td>
<td>117</td>
<td>7.6</td>
<td>38</td>
</tr>
<tr>
<td>55-64</td>
<td>52</td>
<td>3.4</td>
<td>26</td>
</tr>
<tr>
<td>65-74</td>
<td>33</td>
<td>2.1</td>
<td>20</td>
</tr>
<tr>
<td>75-84</td>
<td>23</td>
<td>1.5</td>
<td>11</td>
</tr>
<tr>
<td>85+</td>
<td>17</td>
<td>1.1</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,541</td>
<td>100.0</td>
<td>829</td>
</tr>
</tbody>
</table>

*Note: exclude those whose country of birth is unknown

Looking at the trend, the proportion of foreign-born cases among the age group 15-34 has increased dramatically especially since 2011, while that among other age groups have increased steadily (Figure 5, see also Table s9).
Figure 5. Proportion of foreign-born TB notification by age groups, 2010-2019
Country of birth and time of entry to Japan:

Table 4 summarizes the foreign-born TB cases by major countries of birth (see also Table s10). Vietnam was the most frequent country of birth for foreign-born cases notified in 2019 (21.5%, 331 / 1,541), followed by the Philippines and China (20.0%, 308 / 1,541 and 16.4%, 253 / 1,541).

<table>
<thead>
<tr>
<th>Country name</th>
<th>Cases</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>331</td>
<td>21.5</td>
</tr>
<tr>
<td>the Philippines</td>
<td>308</td>
<td>20.0</td>
</tr>
<tr>
<td>China</td>
<td>253</td>
<td>16.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>160</td>
<td>10.4</td>
</tr>
<tr>
<td>Nepal</td>
<td>146</td>
<td>9.5</td>
</tr>
<tr>
<td>Myanmar</td>
<td>53</td>
<td>3.4</td>
</tr>
<tr>
<td>Unknown</td>
<td>41</td>
<td>2.7</td>
</tr>
<tr>
<td>South Korea</td>
<td>36</td>
<td>2.3</td>
</tr>
<tr>
<td>India</td>
<td>32</td>
<td>2.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>26</td>
<td>1.7</td>
</tr>
<tr>
<td>Cambodia</td>
<td>24</td>
<td>1.6</td>
</tr>
<tr>
<td>Brazil</td>
<td>23</td>
<td>1.5</td>
</tr>
<tr>
<td>Others</td>
<td>108</td>
<td>7.0</td>
</tr>
<tr>
<td>Total</td>
<td>1,541</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Looking at the trend in the five most frequent countries of birth, the number of those from China has been relatively constant, those from Nepal and Indonesia have been increasing, but slightly declined in 2019. Those from Vietnam have continued to increase. (Figure 6, see also Table s11).

**Figure 6. Foreign-born TB notifications in selected countries of birth, 2010-2019**

CHN= China, IDN = Indonesia, NPL= Nepal, PHL = the Philippines, VNM = Vietnam
Year of entry to Japan has been collected under the JTBS since 2012. Of the 10,474 foreign-born cases notified in Japan between 2012 and 2019, year of entry was known for 64.9% (6,799 / 10,474). In 2019, of the 1,541 foreign-born cases notified, year of entry was known for 71.6% (1,104 / 1,541). Of which, 48.2% (532 / 1,104) of foreign-born cases were notified within 2 years of entering Japan. (Figure 7, see also Table s12)
Chapter 3: Co-morbidities (HIV and Diabetes mellitus), 2012~2019

HIV/TB cases:

Table 5 summarizes the newly notified TB cases by HIV status. In 2019, HIV test results were known only for 6.9% (1,004 / 14,460), while unknown for 93.1% of the newly notified cases. Of those cases with known test results, 29 (2.9%) were HIV positive and 975 (97.1%) were HIV negative.

Table 5: Newly notified cases by HIV test results, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>HIV positive</th>
<th>HIV negative</th>
<th>HIV test not done</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>62</td>
<td>3,266</td>
<td>4,601</td>
<td>13,354</td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
<td>1,890</td>
<td>5,090</td>
<td>13,465</td>
</tr>
<tr>
<td>2014</td>
<td>45</td>
<td>1,627</td>
<td>4,970</td>
<td>12,973</td>
</tr>
<tr>
<td>2015</td>
<td>40</td>
<td>1,474</td>
<td>4,697</td>
<td>12,069</td>
</tr>
<tr>
<td>2016</td>
<td>44</td>
<td>1,556</td>
<td>4,933</td>
<td>11,092</td>
</tr>
<tr>
<td>2017</td>
<td>34</td>
<td>1,454</td>
<td>4,753</td>
<td>10,548</td>
</tr>
<tr>
<td>2018</td>
<td>44</td>
<td>1,251</td>
<td>4,757</td>
<td>9,538</td>
</tr>
<tr>
<td>2019</td>
<td>29</td>
<td>975</td>
<td>4,942</td>
<td>8,514</td>
</tr>
</tbody>
</table>

Of the 29 HIV positive TB cases, 15 (51.7%) were foreign-born and 14 (48.3%) were Japan-born. The proportion of women was larger among the foreign-born HIV positive TB cases (33.3%, 5 / 15) compared with the Japan-born (7.1%, 1 / 14) cases (Table 6).

Table 6: Characteristics of HIV positive TB patients, 2019 (n=29)

<table>
<thead>
<tr>
<th></th>
<th>Foreign-born</th>
<th>Japan-born</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>10</td>
<td>13</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>14</td>
<td>0</td>
<td>29</td>
</tr>
</tbody>
</table>
Proportion of those who were not tested for HIV has been on a gradual increase, from 21.6% in 2012 (4,601/21,283) to 34.2% (4,942/14,460) in 2019.

Diabetes mellitus/TB cases:

Table 7 summarizes the newly notified TB cases by diabetes mellitus (DM) status. The definition of DM under the JTBS is solely dependent on the patient’s self-report. In 2019, the status of DM was known for 88.4% of the newly notified cases (12,785/14,460). Of those cases with known DM status, 2,105 had concomitant DM. Proportion of those with DM has continued to increase steadily.

Table 7: Newly notified cases by DM status, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>With DM</th>
<th>Without DM</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3,036</td>
<td>15,978</td>
<td>2,269</td>
<td>21,283</td>
</tr>
<tr>
<td>2013</td>
<td>2,964</td>
<td>15,010</td>
<td>2,521</td>
<td>20,495</td>
</tr>
<tr>
<td>2014</td>
<td>2,753</td>
<td>14,536</td>
<td>2,326</td>
<td>19,615</td>
</tr>
<tr>
<td>2015</td>
<td>2,686</td>
<td>13,472</td>
<td>2,122</td>
<td>18,280</td>
</tr>
<tr>
<td>2016</td>
<td>2,509</td>
<td>13,277</td>
<td>1,839</td>
<td>17,625</td>
</tr>
<tr>
<td>2017</td>
<td>2,368</td>
<td>12,576</td>
<td>1,845</td>
<td>16,789</td>
</tr>
<tr>
<td>2018</td>
<td>2,210</td>
<td>11,630</td>
<td>1,750</td>
<td>15,590</td>
</tr>
<tr>
<td>2019</td>
<td>2,105</td>
<td>10,680</td>
<td>1,675</td>
<td>14,460</td>
</tr>
</tbody>
</table>

Of the 2,105 cases with DM, 61 (2.9%) were foreign-born, and 1,995 (94.8%) were Japan-born. While 47.5% (29 / 61) of the foreign-born cases were aged between 35 and 54, 92.8% (1,851 / 1,995) of the Japan-born cases were aged 55 and above (Table 8).

Table 8: Characteristics of cases with DM, 2019 (n=2,105)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Foreign-born</th>
<th>Japan-born</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>25-34</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>35-54</td>
<td>29</td>
<td>138</td>
<td>1</td>
</tr>
<tr>
<td>55+</td>
<td>25</td>
<td>1851</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>1995</td>
<td>49</td>
</tr>
</tbody>
</table>
Chapter 4: Childhood TB, 2010-2019

In 2019, 38 cases of TB were newly notified among children aged 14 and below, with a rate per 100,000 of 0.2. Of those cases, 52.6% were males (20 / 38) and 47.4% were females (18 / 38). 65.8% (25 / 38) had pulmonary diseases, and 34.2% (13 / 38) had extra-pulmonary disease only. Three cases of miliary TB and no case of meningeal were reported. The number of cases has steadily been declining.

In 2019, 26.3% (10 / 38) of childhood TB cases were foreign-born. The proportion of those foreign-born has been on a gradual increase (Figure 8, see also Table s13).
The source of infection was known for 10 of the 38 cases, 8 of whom were Japan-born. 6 were infected by their parents and 2 by their grandparents (Figure 9, see also Table s14.a). Of the 28 Japan-born cases, 28.6% (8/28) were detected via contact investigation and 50.0% (14/28) at hospital setting, with symptoms. On the other hand, of the 10 foreign-born cases, 40.0% (4/10) were detected via contact investigation and 20.0% (2/10) at hospital setting, with symptoms (Table s14.b).

Figure 9. Source of infection of notified childhood TB, 2019
Chapter 5: Laboratory confirmation

Sputum smear status for pulmonary cases:

Of the 11,094 pulmonary TB cases notified in 2019, the results of sputum smear status were known for 99.1% (10,996/11,094). Of these cases, 50.3% were positive (5,576/11,094). Sputum smear test was not done for 67 cases, and test results not reported for 31 cases.

Culture confirmation:

Of the 11,094 pulmonary TB cases notified in 2019, the results of culture confirmation were known for 89.9% (9,968/11,094). Of these cases, 81.4% (8,110/9,968) were culture confirmed. Results were pending for 846 cases, unknown for 79 cases, test was not done for 177 cases and terminated for 24 cases. The proportion of those culture confirmed among pulmonary TB has steadily increased from 62.7% in 2010 to 73.1% in 2019 (Figure 10, see also Table s15)

Of all TB cases notified in 2019, results of culture confirmation were known for 86.9% (12,563 / 14,460). Of these cases, 74.8% (9,396 / 12,563) were culture confirmed. Results were pending for 1,224 cases, unknown for 113 cases, test was not done for 268 cases and terminated for 27 cases.
Figure 10. Proportion of culture confirmed among PTB, 2010-2019
Chapter 6: Drug-resistant TB (including treatment outcomes)

Drug susceptibility test for isoniazid and rifampicin:

Of the 9,396 culture confirmed TB cases notified in 2019, drug susceptibility test (DST) results for both isoniazid (INH) and rifampicin (RFP) were known for 81.0% (7,613/ 9,396). The proportion of those with DST results for both isoniazid and rifampicin has, despite gradually, been increasing (Figure 11, see also Table s16)
**Multidrug resistant TB (MDR-TB):**

Of the 7,613 cases with DST results known, 0.6% (45 / 7,613) had multi-drug resistance (MDR) with resistance to at least isoniazid and rifampicin. Out of the 45 cases, 44 were among pulmonary TB. The proportion of those with MDR resistance has remained constantly higher among the foreign-born, compared with Japan-born (2.8% vs 0.4% in 2019). (Figures 12a-12c, see also Table s17)

---

Bar = number, line = proportion, RR = rifampicin resistance, MDR = multi-drug resistance
Isoniazid resistance without MDR-TB:

Of the 7,613 cases with DST results known, 4.6% (349/7,613) were resistant to isoniazid (INH) without MDR. The overall number of cases with INH resistance has remained relatively constant over the past 5 years. However, looking at the cases by country of birth, the number of INH resistant cases have increased among the foreign-born cases (Figures 13a-13c, see also Table s18). Of the 65 foreign-born patients with INH resistance notified in 2019, 18 were from Vietnam, 13 from the Philippines and 11 from China.
Table 9 summarizes the characteristics of those cases with MDR and INH mono-resistance notified in 2019. The proportions of males were greater among those with MDR and INH mono-resistance. The proportions of those aged 55 and above were the largest among all cases, reflecting the age structure of TB patients in Japan. The proportions of foreign-born were much higher than the proportion of foreign-born among the overall TB cases (10.9% in 2019). The proportion of retreatment was higher among those with MDR compared with those with INH mono-resistance.

Table 9. Characteristics of cases with MDR and INH mono-resistance, 2019

<table>
<thead>
<tr>
<th></th>
<th>MDR</th>
<th>INH mono-resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>51.1</td>
</tr>
<tr>
<td>Female</td>
<td>22</td>
<td>48.9</td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15-34</td>
<td>19</td>
<td>42.2</td>
</tr>
<tr>
<td>35-54</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td>55+</td>
<td>20</td>
<td>44.4</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>24</td>
<td>53.3</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>21</td>
<td>46.7</td>
</tr>
<tr>
<td>COB unknown</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Tx history</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>35</td>
<td>77.8</td>
</tr>
<tr>
<td>Retreatment</td>
<td>10</td>
<td>22.2</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

COB= country of birth, Tx=treatment
Outcomes of MDR-TB cohort:

The JTBS underwent a system revision in 2017 – one of the major changes included assessment of treatment outcomes. Prior to the revision, the JTBS only summarized the treatment outcomes of pulmonary TB, as according to the computerized algorithm. The new change now enables PHCs to enter treatment outcomes of all TB, including extrapulmonary and MDR-TB, individually. This year, the treatment outcomes of MDR-TB patients notified in 2017 are presented (i.e. treatment outcomes at the end of 48 months). (Table 10).

<table>
<thead>
<tr>
<th>Tx outcomes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>16</td>
<td>25.4</td>
</tr>
<tr>
<td>Completed</td>
<td>17</td>
<td>27.0</td>
</tr>
<tr>
<td>Died</td>
<td>9</td>
<td>14.3</td>
</tr>
<tr>
<td>Tx failed</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>LTFU</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Transferred-out</td>
<td>15</td>
<td>23.8</td>
</tr>
<tr>
<td>Still on tx</td>
<td>5</td>
<td>7.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tx = treatment, LTFU = lost to follow-up
Chapter 7: Delay

Delay among symptomatic pulmonary TB:

Under the JTBS, a patient delay is defined as the time between onset of symptoms and initial doctor visit being longer than 2 months, a doctor delay as the time between initial doctor visit and diagnosis being longer than 1 month, and total delay as the time between onset of symptoms and TB diagnosis being longer than 3 months.

Of the 7,904 symptomatic pulmonary TB cases, information regarding patient delay was known for 69.1% (5,458 / 7,904), doctor delay for 91.6% (7,237 / 7,904), and total delay for 69.5% (5,491 / 7,904). Patient delay was observed in 20.4% (1,112 / 5,458), doctor delay in 21.9% (1,585 / 7,237) and total delay in 21.7% (1,191 / 5,491). (Table 11).

<table>
<thead>
<tr>
<th>Type of delay</th>
<th>Total no. symptomatic PTB</th>
<th>Information on delay known</th>
<th>Delay n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient delay</td>
<td>7,904</td>
<td>5,458</td>
<td>1,112</td>
<td>20.4</td>
</tr>
<tr>
<td>Doctor delay</td>
<td>7,904</td>
<td>7,237</td>
<td>1,585</td>
<td>21.9</td>
</tr>
<tr>
<td>Total delay</td>
<td>7,904</td>
<td>5,491</td>
<td>1,191</td>
<td>21.7</td>
</tr>
</tbody>
</table>

The proportions of those with delay has gradually been increasing, with the proportion of those with doctor delay constantly being higher than patient delay (Figure 14, see also Table s19).
Characteristics of those with delay:

Characteristics of symptomatic PTB patients by delay type are summarized in Table 12. Proportions of those with patient delay was higher among males compared with females, while vice versa for doctor delay. As for the age groups, proportions of those with patient delay was the highest among those aged 55-64 years old, followed by those aged 15-24 years old. Proportion of patient delay was higher among the foreign-born compared with the Japan-born, and among those with social risk factors—however, it must be noted that age distribution of Japan- and foreign-born patients significantly differ. Patient delay among the
younger age groups is in fact higher among the Japan-born patients (data not shown). Proportion of total delay was similarly high among those with social risk factors, and among those aged 45-64 years old.

Table 12. Proportions of those with delay among selected characteristics, 2019

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Patient delay</th>
<th>Doctor delay</th>
<th>Total delay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>With delay</td>
<td>Proportion of those with delay (%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5,458</td>
<td>1,112</td>
<td>20.4</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3,305</td>
<td>698</td>
<td>21.1</td>
</tr>
<tr>
<td>Female</td>
<td>2,153</td>
<td>414</td>
<td>19.2</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>4</td>
<td>1</td>
<td>25.0</td>
</tr>
<tr>
<td>15-24</td>
<td>209</td>
<td>59</td>
<td>28.2</td>
</tr>
<tr>
<td>25-34</td>
<td>291</td>
<td>78</td>
<td>26.8</td>
</tr>
<tr>
<td>35-44</td>
<td>291</td>
<td>80</td>
<td>27.5</td>
</tr>
<tr>
<td>45-54</td>
<td>369</td>
<td>98</td>
<td>26.6</td>
</tr>
<tr>
<td>55-64</td>
<td>410</td>
<td>123</td>
<td>30.0</td>
</tr>
<tr>
<td>65+</td>
<td>3,884</td>
<td>673</td>
<td>17.3</td>
</tr>
<tr>
<td>Country of birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign-born</td>
<td>460</td>
<td>120</td>
<td>26.1</td>
</tr>
<tr>
<td>Japan-born</td>
<td>4,946</td>
<td>980</td>
<td>19.8</td>
</tr>
<tr>
<td>COB unknown</td>
<td>52</td>
<td>12</td>
<td>23.1</td>
</tr>
<tr>
<td>Social risk factor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>64</td>
<td>23</td>
<td>35.9</td>
</tr>
<tr>
<td>Unemployed*</td>
<td>287</td>
<td>87</td>
<td>30.3</td>
</tr>
<tr>
<td>On social welfare</td>
<td>409</td>
<td>119</td>
<td>29.1</td>
</tr>
<tr>
<td>No insurance</td>
<td>25</td>
<td>11</td>
<td>44.0</td>
</tr>
</tbody>
</table>

COB = country of birth

*Unemployed among those aged between 25 and 64
Chapter 8: Treatment outcomes in the non-MDR cohort at the end of 12 months

TB outcomes in the non-MDR cohort:

In 2018, a total of 15,530 non-MDR cases were reported. Treatment outcome at the end of 12 months was available for 99.5% (15,454 / 15,530) and is summarized in Table 13.

Table 13. Treatment outcomes at 12 months for drug sensitive cases notified in 2018

<table>
<thead>
<tr>
<th>Tx outcomes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>3,386</td>
<td>21.9</td>
</tr>
<tr>
<td>Completed</td>
<td>6,788</td>
<td>43.9</td>
</tr>
<tr>
<td>Died</td>
<td>3,467</td>
<td>22.4</td>
</tr>
<tr>
<td>Failed</td>
<td>9</td>
<td>0.1</td>
</tr>
<tr>
<td>LTFU</td>
<td>254</td>
<td>1.6</td>
</tr>
<tr>
<td>Still on tx</td>
<td>374</td>
<td>2.4</td>
</tr>
<tr>
<td>Transferred-out</td>
<td>1,130</td>
<td>7.3</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>46</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15,454</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tx = treatment, LTFU = lost to follow-up

As approximately two-thirds of the cases in Japan are aged 65 and above, the treatment outcomes of the younger age groups were re-analyzed. Of the 5,121 cases aged 64 and below, whose treatment outcomes at the end of 12 months were available, 81.0% (4,146 / 5,121) had either completed treatment or were cured (Table 14).
Table 14. Treatment outcomes 12 months for drug sensitive cases (aged 0-64) notified in 2018

<table>
<thead>
<tr>
<th>Tx outcomes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>1,362</td>
<td>26.6</td>
</tr>
<tr>
<td>Completed</td>
<td>2,784</td>
<td>54.4</td>
</tr>
<tr>
<td>Died</td>
<td>142</td>
<td>2.8</td>
</tr>
<tr>
<td>Failed</td>
<td>3</td>
<td>0.1</td>
</tr>
<tr>
<td>LTFU</td>
<td>86</td>
<td>1.7</td>
</tr>
<tr>
<td>Still on tx</td>
<td>279</td>
<td>5.4</td>
</tr>
<tr>
<td>Transferred-out</td>
<td>442</td>
<td>8.6</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>23</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td>5,121</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tx = treatment, LTFU = lost to follow-up

TB outcomes for the HIV positive cohort:

Of the 43 HIV positive cases whose treatment outcomes at the end of 12 months were available, 60.5% (26 / 43) had either completed treatment or were cured (Table 15).

Table 15. Treatment outcomes at 12 months for HIV positive drug sensitive cases notified in 2018

<table>
<thead>
<tr>
<th>Tx outcomes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>Completed</td>
<td>17</td>
<td>39.5</td>
</tr>
<tr>
<td>Died</td>
<td>4</td>
<td>9.3</td>
</tr>
<tr>
<td>Failed</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>LTFU</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Still on tx</td>
<td>4</td>
<td>9.3</td>
</tr>
<tr>
<td>Transferred-out</td>
<td>8</td>
<td>18.6</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tx = treatment, LTFU = lost to follow-up
Characteristics of those who have died (non-MDR cohort):

Characteristics of those who have died among the non-MDR cohort are summarized in Table 16a. 62.6% (2,170 / 3,467) were males, 95.9% (3,325 / 3,467) were aged 65 and above, and 95.9% (3,325 / 3,467) were Japan-born. Proportions with the social risk factors among those aged between 25 and 64, and who have died (n=140) were also calculated: 16.7% (10 / 60) were homeless, 58.6% (82/140) were unemployed and 22.1% (31/140) were receiving social welfare.

Table 16a. Characteristics of those who have died among the entire drug sensitive cohort in 2018

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2,170</td>
<td>62.6</td>
</tr>
<tr>
<td>Female</td>
<td>1,297</td>
<td>37.4</td>
</tr>
<tr>
<td>Total</td>
<td>3,467</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Age groups</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15-64</td>
<td>142</td>
<td>4.1</td>
</tr>
<tr>
<td>65+</td>
<td>3,325</td>
<td>95.9</td>
</tr>
<tr>
<td>Total</td>
<td>3,467</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>3,325</td>
<td>95.9</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>32</td>
<td>0.9</td>
</tr>
<tr>
<td>COB unknown</td>
<td>110</td>
<td>3.2</td>
</tr>
<tr>
<td>Total</td>
<td>3,467</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Social risk factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(aged 25-64, n=140)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>10</td>
<td>16.7</td>
</tr>
<tr>
<td>Not Homeless</td>
<td>50</td>
<td>83.3</td>
</tr>
<tr>
<td>Total*</td>
<td>60</td>
<td>100.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>82</td>
<td>58.6</td>
</tr>
<tr>
<td>Employed, students &amp; Unknown</td>
<td>58</td>
<td>41.4</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td>100.0</td>
</tr>
<tr>
<td>On social welfare</td>
<td>31</td>
<td>22.1</td>
</tr>
<tr>
<td>No insurance</td>
<td>11</td>
<td>7.9</td>
</tr>
<tr>
<td>With health insurance &amp; Unknown</td>
<td>98</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note: total of homeless excludes those whose information on the state of homelessness is unknown or unavailable, i.e. total n=60
COB = country of birth
Proportions of those who have died (non-MDR cohort):

Proportions of those who have died by selected characteristics are summarized in Table 16b. It was slightly higher among males than females (23.6% vs 20.7%). By age groups, it was the highest among those aged 65 years old and above (32.2%), and by country of birth, highest among those whose country of birth was unknown (32.8%). The proportion of those who have died among homeless people and those without insurance was also high (16.1%, 23.4%).

Table 16b. Proportions of those who have died among the entire drug sensitive cohort in 2018

<table>
<thead>
<tr>
<th></th>
<th>No. patients</th>
<th>Of which died</th>
<th>% of those who have died</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9,181</td>
<td>2,170</td>
<td>23.6</td>
</tr>
<tr>
<td>Female</td>
<td>6,273</td>
<td>1,297</td>
<td>20.7</td>
</tr>
<tr>
<td><strong>Age groups</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>52</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15-64</td>
<td>5,069</td>
<td>142</td>
<td>2.8</td>
</tr>
<tr>
<td>65+</td>
<td>10,333</td>
<td>3,325</td>
<td>32.2</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>13,484</td>
<td>3,325</td>
<td>24.7</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>1,635</td>
<td>32</td>
<td>2.0</td>
</tr>
<tr>
<td>COB* unknown</td>
<td>335</td>
<td>110</td>
<td>32.8</td>
</tr>
<tr>
<td><strong>Social risk factor aged 25-64</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>62</td>
<td>10</td>
<td>16.1</td>
</tr>
<tr>
<td>Unemployed</td>
<td>751</td>
<td>82</td>
<td>10.9</td>
</tr>
<tr>
<td>On social welfare</td>
<td>236</td>
<td>31</td>
<td>13.1</td>
</tr>
<tr>
<td>No insurance</td>
<td>47</td>
<td>11</td>
<td>23.4</td>
</tr>
</tbody>
</table>

COB = country of birth
Characteristics of those who were lost to follow-up (non-MDR cohort):

Characteristics of those who were lost to follow-up among the entire drug sensitive cohort are summarized in Table 17a. 58.3% (148 / 254) were males, 66.1% (168 / 254) were aged 65 and above, and 90.2% (229 / 254) were Japan-born. Proportions with the social risk factors among those aged between 25 and 64, and who were LTFU (n=72) were also calculated: 2.5% (1 / 40) were homeless, 19.4% were unemployed (14 / 72, and 8.3% (6 / 72) were receiving social welfare.

Table 17a. Characteristics of those lost to follow-up among the entire drug sensitive cohort in 2018

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>148</td>
<td>58.3</td>
</tr>
<tr>
<td>Female</td>
<td>106</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>254</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Age groups</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15-64</td>
<td>86</td>
<td>33.9</td>
</tr>
<tr>
<td>65+</td>
<td>168</td>
<td>66.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>254</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>229</td>
<td>90.2</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td>COB unknown</td>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>254</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Social risk factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(aged 25-64, n=72)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless*</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>Not Homeless</td>
<td>39</td>
<td>97.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Unemployed</strong></td>
<td>14</td>
<td>19.4</td>
</tr>
<tr>
<td>Employed, students &amp;</td>
<td>58</td>
<td>80.6</td>
</tr>
<tr>
<td>Unknown</td>
<td>72</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>On social welfare</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>No insurance</strong></td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>With health insurance</strong></td>
<td>65</td>
<td>90.3</td>
</tr>
<tr>
<td>&amp; Unknown</td>
<td>72</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note: total of homeless excludes those whose information on the state of homelessness is unknown, i.e. total n=54
COB = country of birth
Proportions of those who were lost to follow-up (non-MDR cohort):

Proportions of those who were lost to follow-up by selected characteristics are summarized in Table 17b. It was not significantly different by sex, age groups, and by country of birth, it was particularly high among those on social welfare (2.5%), and those who no insurance (2.1%).

Table 17b. Proportions of those lost to follow-up among the entire drug sensitive cohort in 2018

<table>
<thead>
<tr>
<th></th>
<th>No. patients</th>
<th>Of which LTFU</th>
<th>% of those LTFU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9,181</td>
<td>148</td>
<td>1.6</td>
</tr>
<tr>
<td>Female</td>
<td>6,273</td>
<td>106</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Age groups</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>52</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15-64</td>
<td>5,069</td>
<td>86</td>
<td>1.7</td>
</tr>
<tr>
<td>65+</td>
<td>10,333</td>
<td>168</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>13,484</td>
<td>229</td>
<td>1.7</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>1,635</td>
<td>20</td>
<td>1.2</td>
</tr>
<tr>
<td>COB* unknown</td>
<td>335</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Social risk factor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aged 25-64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>62</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>751</td>
<td>14</td>
<td>1.9</td>
</tr>
<tr>
<td>On social welfare</td>
<td>236</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>No insurance</td>
<td>47</td>
<td>1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

COB = country of birth
Chapter 9: Latent tuberculosis Infection

Notification of latent tuberculosis infection (LTBI) has been mandatory since 2006. In 2019, 7,684 cases of LTBI were newly notified. The number of new cases has reached a peak in 2011 and decreased over the next two years. However, it has remained relatively stable since 2013. On the other hand, proportion of foreign-born among the total LTBI cases notified has been increasing, notably from 2011 (Figure 15, see also Table s20).
Table 18 summarizes the LTBI case notifications by sex and age groups. Breaking down the cases by age groups, the largest number of cases were diagnosed among those aged 65-74 (1,302 cases), followed by those aged 45-54 (1,151 cases). More LTBI is notified among females, especially among those aged 25-54.

Table 18. LTBI notification by age and sex, 2019

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>411</td>
<td>181</td>
<td>230</td>
</tr>
<tr>
<td>5-14</td>
<td>115</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>15-24</td>
<td>573</td>
<td>293</td>
<td>280</td>
</tr>
<tr>
<td>25-34</td>
<td>760</td>
<td>333</td>
<td>427</td>
</tr>
<tr>
<td>35-44</td>
<td>897</td>
<td>382</td>
<td>515</td>
</tr>
<tr>
<td>45-54</td>
<td>1151</td>
<td>474</td>
<td>677</td>
</tr>
<tr>
<td>55-64</td>
<td>1034</td>
<td>499</td>
<td>535</td>
</tr>
<tr>
<td>65-74</td>
<td>1302</td>
<td>727</td>
<td>575</td>
</tr>
<tr>
<td>75-84</td>
<td>1076</td>
<td>583</td>
<td>493</td>
</tr>
<tr>
<td>85+</td>
<td>365</td>
<td>180</td>
<td>185</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,684</td>
<td>3,707</td>
<td>3,977</td>
</tr>
</tbody>
</table>
Mode of detecting LTBI:

While 57.5% (4,422 / 7,684) of the notified LTBI cases were detected upon contact investigation (Figure 16, see also Table s21), its proportion out of the total cases has been declining. On the other hand, the proportion of those detected at hospital settings (i.e. during medical check-up for other diseases) has been increasing. (Figure 17a & 17b, see also Table s22).
Outcome of LTBI treatment (2018 cohort):

As mentioned earlier, the JTBS has undergone a system revision and treatment outcome for 2018 cohort is now available for all TB and LTBI.

In 2018, 7,414 LTBI cases were newly notified, of which treatment outcome was available for 99.9% (7,406 /7,414). Of the 7,406 cases, 98.4% (7,286 /7,406) had started treatment. Upon notification, 7,038 had initiated the treatment with isoniazid monotherapy. Treatment outcomes of the 7,286 cases are summarized in Table 19.

Table 19. Outcomes at 12 months of LTBI cases notified in 2018

<table>
<thead>
<tr>
<th>Tx outcomes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>6,112</td>
<td>83.9</td>
</tr>
<tr>
<td>Died</td>
<td>162</td>
<td>2.2</td>
</tr>
<tr>
<td>Tx failed</td>
<td>14</td>
<td>0.2</td>
</tr>
<tr>
<td>LTFU</td>
<td>515</td>
<td>7.1</td>
</tr>
<tr>
<td>Transferred-out</td>
<td>131</td>
<td>1.8</td>
</tr>
<tr>
<td>Still on tx</td>
<td>328</td>
<td>4.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>24</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,286</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tx = treatment
Appendix I: Notes on TB surveillance system in Japan

Both TB and LTBI (those diagnosed as being infected but not with active TB, and who were judged as requiring preventive therapy) are notifiable diseases under the Infectious Diseases Control Law. All physicians who diagnose TB or LTBI are requested to report to the local public health centers as soon as it is possible.

Local public health centers (PHCs), which are local government authorities responsible for public health in Japan, are responsible for compiling the reports and reporting to the Ministry of Health, Labour and Welfare of Japan.

Japan introduced the first nationwide computerized TB surveillance system, the Japan Tuberculosis Surveillance (JTBS) in 1987. The data, once entered into JTBS, is updated every month, and major findings are published annually, and also made available on-line, in Japanese. Treatment outcome is reported for the cohort notified in the previous year.

Simplified flowchart of TB

Data cleaning and analyses at national level, Dissemination and publication of analysis results

Ministry of Health, Labor and Welfare

National Institute of Infectious Diseases/Tuberculosis Surveillance Center, RIT

Prefectural and municipal Institutes of Public Health (78, as of 2019)

Data cleaning and analyses at prefectural, municipal level

Web-based central database

Online reporting

Public Health Centers (480, as of 2019)

Medial institutions (public and private)
Appendix II: Methods

Notification rates:
Notification rate per 100,000 is calculated using the population estimates from the annual “Current Population Estimates” as of October 1st each year (Statistics Bureau, Ministry of Internal Affairs and Communications, Japan), unless in the year of population census. The population census is conducted every five year, and in the year of census the notification rates are calculated using the data from the census.

Notification rate among the foreign-born was calculated using the population estimates of foreign residents from the “Foreign residents' statistics” at the end of each year (Immigration Bureau, Ministry of Justice, Japan).

Terms of definitions and reporting years:
The overall trend is analyzed from 2010, unless otherwise noted as below:

Country of birth
Information regarding nationality (either “Japanese” or “non-Japanese”) was added to JTBS in 1998, and country name and the year of entry (either “within five years”, or “more than five years” or “unknown”) in 2007. In 2012, the category of nationality was changed to country of birth (either “Japan-born”, “foreign-born” or “unknown”), and the year of entry to the exact year of entry to Japan. In this report, the trend since 2007 is analyzed, however, the “foreign-born” includes those classified as “non-Japanese” prior to 2007. As for the time between entry to Japan and TB notification, trend since 2012 is analyzed.

Occupation
Service industry refers to those whose work involves face-to-face interactions with an unspecified large number of customers.

Other healthcare workers include co-medical workers, including care workers of elderly institutions.
Teachers include teachers of nursery and kindergarten school, primary, secondary, high-schools and universities, as well as of private classes and schools of non-compulsory education.

Full-and part-time employed refers to those with stable income other than service industry, healthcare workers, and teachers, and, and is differentiated from temporary employed (including day laborers) whose income is irregular.

Houseworkers refer to housewives and househusbands, and not paid workers e.g. maids.

Unemployed include all those without regular and/or irregular job, including the elderly who has retired.

**HIV/DM**

Information regarding HIV co-infection and DM was added to JTBS in 2007. HIV and DM data are self-reported, and are not matched with other database in any way. Information regarding HIV had been entered as “HIV positive”, “HIV negative” and “unknown” until 2011. Since 2012, a new category of “HIV test not done” was added. Information regarding DM is entered as “with DM”, “without DM” and “unknown”. Both for HIV and DM, the trend since 2012 is analyzed.

**Mode of detection**

Regular screening refers to mandatory screening conducted at schools, workplaces and other institutions including social welfare institutions and prison institutions.

Other mass investigation refers to mass screening programs organized by local authorities, targeting specific high-risk population groups such as homeless and foreign-born students.

At hospital setting refers to a case whereby he or she is diagnosed while seeking medical attention for TB symptoms, for diseases other than TB, or during medical examination while being hospitalized for diseases other than TB.
During follow-up for TB refers to a case whereby he or she is diagnosed during the two-year follow-up after completing treatment for TB/LTBI.

_Treatment outcomes of drug susceptible TB_  
The definitions of the treatment outcomes for active TB are in line with latest definitions of the WHO. Due to the system restructuring of JTBS as mentioned earlier, the treatment outcomes for the 2019 cohort are evaluated differently from the cohort from the previous years. The outcomes are not directly comparable, and thus the trends are not analyzed.

_LTBI_  
Information regarding LTBI was added to JTBS in 2006. However, due to questionable accuracy of the data reported in 2006, trend since 2007 is analyzed.

_Treatment outcomes of LTBI_  
Completed treatment: An LTBI patient who has undergone treatment of sufficient duration as recommended by the Japanese guideline of LTBI treatment (i.e. 6 or 9 months of INH, or 4 or 6 months of RFP)

Died: An LTBI patient who has died from any cause during treatment.

Lost to follow-up: An LTBI patient whose treatment was interrupted and not restarted.

Transferred out: An LTBI patient who has moved out of the catchment area of a public health center during treatment, and whose final treatment outcome could not be identified by the public health center.

Still on treatment: An LTBI patient who is still on treatment at month 12.

Not evaluated: An LTBI patient whose treatment outcome could not be evaluated by the public health center.
Appendix III: Data quality

Data quality is ensured via the system’s automatic verification program, as well as regular meetings at local levels attended by staffs from hospitals and PHCs. Periodic refresher trainings on data entry are also provided to PHC nurses as well as administrative staff across the nation.

Data capture rate for selected variables is summarized in Table iii.a. The capture rate was defined and calculated for each variable as follows:

Country of birth: \[
\frac{\text{All active TB – country of birth unknown}}{\text{All active TB}} \times 100
\]

Occupation: \[
\frac{\text{All active TB – occupation unknown}}{\text{All active TB}} \times 100
\]

Homelessness: \[
\frac{\text{All active TB – (homeless unknown+ no data entered)}}{\text{All active TB}} \times 100
\]

Treatment history: \[
\frac{\text{All active TB – treatment history unknown}}{\text{All active TB}} \times 100
\]

Previous treatment regimen: \[
\frac{\text{All active retreatment TB – regimen unknown}}{\text{All active retreatment TB}} \times 100
\]

Total delay: \[
\frac{\text{All symptomatic PTB – delay unknown}}{\text{All symptomatic PTB}} \times 100
\]

DM: \[
\frac{\text{All active TB – DM unknown}}{\text{All active TB}} \times 100
\]

HIV status: \[
\frac{(\text{HIV positive + HIV negative})}{\text{All active TB}} \times 100
\]

HIV testing status: \[
\frac{(\text{HIV positive + HIV negative+ test not done})}{\text{All active TB}} \times 100
\]
Tuberculosis in Japan: Annual Report 2020

Culture known TB: \( \frac{\text{Culture positive} + \text{Culture negative}}{\text{All active TB}} \) x 100

Culture known PTB: \( \frac{\text{Culture positive} + \text{Culture negative}}{\text{All active PTB}} \) x 100

DST known TB: \( \frac{\text{INH negative} + \text{positive} + \text{RFP negative} + \text{positive}}{\text{All culture positive TB}} \) x 100

DST known PTB: \( \frac{\text{INH negative} + \text{positive} + \text{RFP negative} + \text{positive}}{\text{All culture positive PTB}} \) x 100

The denominators are summarized in Table iii.b.
<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Country of birth</th>
<th>Occupation</th>
<th>Homelessness</th>
<th>Treatment history</th>
<th>Previous treatment regimen</th>
<th>Total delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>95.9</td>
<td>98.5</td>
<td>22.9</td>
<td>99.2</td>
<td>53.8</td>
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</tr>
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</tr>
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</tr>
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</tr>
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# Appendix IV: Supplementary tables

Table s1. Number and rate of all active TB notifications, 2010-2019

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<th>Notification year</th>
<th>No. cases</th>
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Table s2. Number of TB notifications by age group and sex, 2019

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Table s3. Number of TB notification among those aged 65 and above, 2010-2019

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<td>2015</td>
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Table 4. Notification rate per 100,000 by prefectures, 2019

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<th>Prefecture</th>
<th>Rate per 100,000</th>
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<td>8.0</td>
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<td>Iwate</td>
<td>6.8</td>
<td>Okayama</td>
<td>9.8</td>
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<td>Miyagi</td>
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<td>Hiroshima</td>
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<td>Akita</td>
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<td>Yamaguchi</td>
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<td>Tokushima</td>
<td>13.2</td>
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<tr>
<td>Fukushima</td>
<td>6.9</td>
<td>Kagawa</td>
<td>10.4</td>
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<td>Ehime</td>
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<td>Gunma</td>
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<td>12.0</td>
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<td>Saga</td>
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<td>Nagasaki</td>
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<td>Kagoshima</td>
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Table s5. Number and proportion of TB notifications by sex and occupation (aged 25-64), 2019

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<th>100.0</th>
<th>Female n</th>
<th>100.0</th>
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Table s6.a. Number and proportion of those homeless among TB notifications (aged 25-64), 2019

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<th>Not homeless (b)</th>
<th>Unknown (c)</th>
<th>Total (d)*</th>
<th>Total excluding unknown (d-c)</th>
<th>Proportion of homeless (a/(d-c)*100) (%)</th>
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<td>1,617</td>
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<td></td>
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</tr>
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<td>169</td>
<td>657</td>
<td>488</td>
<td>0.8</td>
</tr>
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<td>35-44</td>
<td>10</td>
<td>460</td>
<td>81</td>
<td>551</td>
<td>470</td>
<td>2.1</td>
</tr>
<tr>
<td>45-54</td>
<td>20</td>
<td>590</td>
<td>134</td>
<td>744</td>
<td>610</td>
<td>3.3</td>
</tr>
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<td>55-64</td>
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<td>561</td>
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<td>716</td>
<td>586</td>
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<td></td>
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<td></td>
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</tr>
<tr>
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<td>295</td>
<td>1,977</td>
<td>1,682</td>
<td>3.4</td>
</tr>
<tr>
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<td>193</td>
<td>659</td>
<td>466</td>
<td>0.2</td>
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<td>26</td>
<td>32</td>
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<td>16.7</td>
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</table>

COB = country of birth

* Homeless status known for 2,668 of 3,960 TB cases aged 25-64

---

Table s6.b. Number and proportion of those unemployed among TB notifications (aged 25-64), 2019

<table>
<thead>
<tr>
<th></th>
<th>Unemployed (a)</th>
<th>Employed (b)</th>
<th>Unknown (c)</th>
<th>Total (d)</th>
<th>Total excluding unknown (d-c)</th>
<th>Proportion of unemployed (a/(d-c)*100) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>725</td>
<td>3,132</td>
<td>103</td>
<td>3,960</td>
<td>3,857</td>
<td>18.8</td>
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<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
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<td>1,916</td>
<td>59</td>
<td>2,414</td>
<td>2,355</td>
<td>18.6</td>
</tr>
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<td>1,216</td>
<td>44</td>
<td>1,546</td>
<td>1,502</td>
<td>19.0</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>72</td>
<td>820</td>
<td>23</td>
<td>915</td>
<td>892</td>
<td>8.1</td>
</tr>
<tr>
<td>35-44</td>
<td>109</td>
<td>705</td>
<td>23</td>
<td>837</td>
<td>814</td>
<td>13.4</td>
</tr>
<tr>
<td>45-54</td>
<td>202</td>
<td>863</td>
<td>28</td>
<td>1,093</td>
<td>1,065</td>
<td>19.0</td>
</tr>
<tr>
<td>55-64</td>
<td>342</td>
<td>744</td>
<td>29</td>
<td>1,115</td>
<td>1,086</td>
<td>31.5</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>603</td>
<td>2,323</td>
<td>68</td>
<td>2,994</td>
<td>2,926</td>
<td>20.6</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>107</td>
<td>768</td>
<td>29</td>
<td>904</td>
<td>875</td>
<td>12.2</td>
</tr>
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<td>15</td>
<td>41</td>
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<td>62</td>
<td>56</td>
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COB = country of birth
Table s6.c. Number and proportion of those on social welfare among TB notifications (aged 25-64), 2019

<table>
<thead>
<tr>
<th></th>
<th>On social welfare (a)</th>
<th>Not on social welfare (b)</th>
<th>Unknown (c)</th>
<th>Total (d)</th>
<th>Total excluding unknown (d-c)</th>
<th>Proportion of those on social welfare (a/(d-c)*100) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>229</td>
<td>3,658</td>
<td>73</td>
<td>3,960</td>
<td>3,887</td>
<td>5.9</td>
</tr>
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<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>192</td>
<td>2,173</td>
<td>49</td>
<td>2,414</td>
<td>2,365</td>
<td>8.1</td>
</tr>
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<td>37</td>
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<td>1,546</td>
<td>1,522</td>
<td>2.4</td>
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<td><strong>Age group</strong></td>
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<td></td>
<td></td>
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<tr>
<td>25-34</td>
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<td>894</td>
<td>18</td>
<td>915</td>
<td>897</td>
<td>0.3</td>
</tr>
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<td>35-44</td>
<td>26</td>
<td>794</td>
<td>17</td>
<td>837</td>
<td>820</td>
<td>3.2</td>
</tr>
<tr>
<td>45-54</td>
<td>72</td>
<td>1,004</td>
<td>17</td>
<td>1,093</td>
<td>1,076</td>
<td>6.7</td>
</tr>
<tr>
<td>55-64</td>
<td>128</td>
<td>966</td>
<td>21</td>
<td>1,115</td>
<td>1,094</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Japan-born</td>
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<td>2,740</td>
<td>44</td>
<td>2,994</td>
<td>2,950</td>
<td>7.1</td>
</tr>
<tr>
<td>Foreign-born</td>
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<td>870</td>
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<td>904</td>
<td>883</td>
<td>1.5</td>
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<td>48</td>
<td>8</td>
<td>62</td>
<td>54</td>
<td>11.1</td>
</tr>
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</table>

COB = country of birth

Table s6.d. Number and proportion of those without health insurance among TB notifications (aged 25-64), 2019

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<th></th>
<th>No insurance (a)</th>
<th>With insurance (b)</th>
<th>Unknown (c)</th>
<th>Total (d)</th>
<th>Total excluding unknown (d-c)</th>
<th>Proportion of those with no insurance (a/(d-c)*100) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>24</td>
<td>3,863</td>
<td>73</td>
<td>3,960</td>
<td>3,887</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>21</td>
<td>2,344</td>
<td>49</td>
<td>2,414</td>
<td>2,365</td>
<td>0.9</td>
</tr>
<tr>
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<td>1,519</td>
<td>24</td>
<td>1,546</td>
<td>1,522</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>3</td>
<td>894</td>
<td>18</td>
<td>915</td>
<td>897</td>
<td>0.3</td>
</tr>
<tr>
<td>35-44</td>
<td>3</td>
<td>817</td>
<td>17</td>
<td>837</td>
<td>820</td>
<td>0.4</td>
</tr>
<tr>
<td>45-54</td>
<td>6</td>
<td>1,070</td>
<td>17</td>
<td>1,093</td>
<td>1,076</td>
<td>0.6</td>
</tr>
<tr>
<td>55-64</td>
<td>12</td>
<td>1,082</td>
<td>21</td>
<td>1,115</td>
<td>1,094</td>
<td>1.1</td>
</tr>
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<td><strong>Country of birth</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-born</td>
<td>23</td>
<td>2,927</td>
<td>44</td>
<td>2,994</td>
<td>2,950</td>
<td>0.8</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>0</td>
<td>883</td>
<td>21</td>
<td>904</td>
<td>883</td>
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<td>1</td>
<td>53</td>
<td>8</td>
<td>62</td>
<td>54</td>
<td>1.9</td>
</tr>
</tbody>
</table>

COB = country of birth
Table 7. Clinical characteristics of TB notifications by age groups, 2019

<table>
<thead>
<tr>
<th>Age group</th>
<th>EPTB bac</th>
<th>EPTB clin</th>
<th>PTB bac</th>
<th>PTB clin</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>5-14</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>15-24</td>
<td>61</td>
<td>63</td>
<td>467</td>
<td>169</td>
<td>760</td>
</tr>
<tr>
<td>25-34</td>
<td>99</td>
<td>64</td>
<td>552</td>
<td>200</td>
<td>915</td>
</tr>
<tr>
<td>35-44</td>
<td>76</td>
<td>76</td>
<td>546</td>
<td>139</td>
<td>837</td>
</tr>
<tr>
<td>45-54</td>
<td>117</td>
<td>116</td>
<td>684</td>
<td>176</td>
<td>1093</td>
</tr>
<tr>
<td>55-64</td>
<td>104</td>
<td>127</td>
<td>695</td>
<td>189</td>
<td>1115</td>
</tr>
<tr>
<td>65-74</td>
<td>204</td>
<td>256</td>
<td>1389</td>
<td>187</td>
<td>2036</td>
</tr>
<tr>
<td>75-84</td>
<td>497</td>
<td>492</td>
<td>2368</td>
<td>232</td>
<td>3589</td>
</tr>
<tr>
<td>85+</td>
<td>490</td>
<td>511</td>
<td>2906</td>
<td>170</td>
<td>4077</td>
</tr>
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<td>1,714</td>
<td>9,613</td>
<td>1,481</td>
<td>14,460</td>
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</table>

EPTB = extrapulmonary tuberculosis, bac = bacteriologically confirmed, clin = clinically confirmed, PTB = pulmonary tuberculosis
Table s8. Number and rate per 100,000 of foreign-born TB, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>No. cases</th>
<th>Rate per 100,000</th>
</tr>
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<tbody>
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<td>952</td>
<td>45.6</td>
</tr>
<tr>
<td>2011</td>
<td>921</td>
<td>45</td>
</tr>
<tr>
<td>2012</td>
<td>1,069</td>
<td>52.6</td>
</tr>
<tr>
<td>2013</td>
<td>1,064</td>
<td>51.5</td>
</tr>
<tr>
<td>2014</td>
<td>1,101</td>
<td>51.9</td>
</tr>
<tr>
<td>2015</td>
<td>1,164</td>
<td>50.1</td>
</tr>
<tr>
<td>2016</td>
<td>1,338</td>
<td>56.2</td>
</tr>
<tr>
<td>2017</td>
<td>1,530</td>
<td>59.7</td>
</tr>
<tr>
<td>2018</td>
<td>1,667</td>
<td>61</td>
</tr>
<tr>
<td>2019</td>
<td>1,541</td>
<td>52.5</td>
</tr>
</tbody>
</table>

Table s9 Number and proportion* of foreign-born TB by age group, 2010-2019

* Note: the denominator excludes those whose country of birth is unknown

<table>
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<tr>
<th>Notification year</th>
<th>Total</th>
<th>0-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>2010</td>
<td>952</td>
<td>4.2</td>
<td>9</td>
<td>10.5</td>
<td>274</td>
<td>30.1</td>
<td>341</td>
</tr>
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<td>2011</td>
<td>921</td>
<td>4.1</td>
<td>8</td>
<td>9.6</td>
<td>245</td>
<td>31.5</td>
<td>343</td>
</tr>
<tr>
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<td>1,069</td>
<td>5.2</td>
<td>7</td>
<td>11.1</td>
<td>304</td>
<td>42.2</td>
<td>357</td>
</tr>
<tr>
<td>2013</td>
<td>1,064</td>
<td>5.4</td>
<td>7</td>
<td>10.8</td>
<td>319</td>
<td>46.8</td>
<td>361</td>
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<tr>
<td>2014</td>
<td>1,101</td>
<td>5.8</td>
<td>8</td>
<td>17.0</td>
<td>339</td>
<td>47.9</td>
<td>376</td>
</tr>
<tr>
<td>2015</td>
<td>1,164</td>
<td>6.6</td>
<td>9</td>
<td>18.4</td>
<td>353</td>
<td>52.6</td>
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<td>1,338</td>
<td>7.9</td>
<td>12</td>
<td>20.3</td>
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<td>58.6</td>
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<td>11</td>
<td>19.6</td>
<td>503</td>
<td>67.3</td>
<td>565</td>
</tr>
<tr>
<td>2018</td>
<td>1,667</td>
<td>10.9</td>
<td>12</td>
<td>23.5</td>
<td>571</td>
<td>70.8</td>
<td>625</td>
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<td>10</td>
<td>26.3</td>
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<td>549</td>
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</tbody>
</table>
### Table s10. Foreign-born TB by country name, 2019

<table>
<thead>
<tr>
<th>Country name</th>
<th>No. cases</th>
<th>Proportion (%)</th>
<th>Country name</th>
<th>No. cases</th>
<th>Proportion (%)</th>
</tr>
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<tbody>
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<td>Hong Kong</td>
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<td>0.1</td>
</tr>
<tr>
<td>The Philippines</td>
<td>308</td>
<td>20.0</td>
<td>Kenya</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>China</td>
<td>253</td>
<td>16.4</td>
<td>Nigeria</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>160</td>
<td>10.4</td>
<td>Democratic People's Republic of Korea</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>Nepal</td>
<td>146</td>
<td>9.5</td>
<td>Senegal</td>
<td>2</td>
<td>0.1</td>
</tr>
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<td>Singapore</td>
<td>2</td>
<td>0.1</td>
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<td>0.1</td>
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<td>Argentina</td>
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<td>0.1</td>
</tr>
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<td>Peru</td>
<td>7</td>
<td>0.5</td>
<td>Tanzania</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>6</td>
<td>0.4</td>
<td>Uganda</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>5</td>
<td>0.3</td>
<td>Uzbekistan</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Turkey</td>
<td>3</td>
<td>0.2</td>
<td>South Africa</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>2</td>
<td>0.1</td>
<td>Zambia</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1541</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table s11. Foreign-born TB by selected countries of birth, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>China</th>
<th>the Philippines</th>
<th>Nepal</th>
<th>Vietnam</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>273</td>
<td>216</td>
<td>39</td>
<td>24</td>
<td>64</td>
</tr>
<tr>
<td>2011</td>
<td>273</td>
<td>218</td>
<td>38</td>
<td>52</td>
<td>49</td>
</tr>
<tr>
<td>2012</td>
<td>294</td>
<td>290</td>
<td>42</td>
<td>63</td>
<td>57</td>
</tr>
<tr>
<td>2013</td>
<td>292</td>
<td>256</td>
<td>65</td>
<td>68</td>
<td>57</td>
</tr>
<tr>
<td>2014</td>
<td>259</td>
<td>292</td>
<td>88</td>
<td>109</td>
<td>53</td>
</tr>
<tr>
<td>2015</td>
<td>249</td>
<td>284</td>
<td>108</td>
<td>135</td>
<td>78</td>
</tr>
<tr>
<td>2016</td>
<td>272</td>
<td>318</td>
<td>135</td>
<td>212</td>
<td>90</td>
</tr>
<tr>
<td>2017</td>
<td>258</td>
<td>321</td>
<td>164</td>
<td>257</td>
<td>121</td>
</tr>
<tr>
<td>2018</td>
<td>274</td>
<td>340</td>
<td>170</td>
<td>289</td>
<td>171</td>
</tr>
<tr>
<td>2019</td>
<td>253</td>
<td>308</td>
<td>146</td>
<td>331</td>
<td>160</td>
</tr>
</tbody>
</table>

Note: the numbers have been updated since the previous year and may differ from the last year's report for some countries, and for some years

Table s12. Foreign-born TB by year of entry to Japan, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>same year</th>
<th>previous year</th>
<th>3-5 years ago</th>
<th>6-10 years ago</th>
<th>more than 10 years</th>
<th>year of entry unknown</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>135</td>
<td>115</td>
<td>150</td>
<td>105</td>
<td>140</td>
<td>424</td>
<td>1,069</td>
</tr>
<tr>
<td>2013</td>
<td>147</td>
<td>133</td>
<td>152</td>
<td>104</td>
<td>141</td>
<td>387</td>
<td>1,064</td>
</tr>
<tr>
<td>2014</td>
<td>143</td>
<td>156</td>
<td>138</td>
<td>86</td>
<td>151</td>
<td>427</td>
<td>1,101</td>
</tr>
<tr>
<td>2015</td>
<td>168</td>
<td>165</td>
<td>172</td>
<td>76</td>
<td>137</td>
<td>446</td>
<td>1,164</td>
</tr>
<tr>
<td>2016</td>
<td>201</td>
<td>228</td>
<td>179</td>
<td>76</td>
<td>152</td>
<td>502</td>
<td>1,338</td>
</tr>
<tr>
<td>2017</td>
<td>230</td>
<td>261</td>
<td>247</td>
<td>93</td>
<td>140</td>
<td>559</td>
<td>1,530</td>
</tr>
<tr>
<td>2018</td>
<td>291</td>
<td>310</td>
<td>281</td>
<td>99</td>
<td>193</td>
<td>493</td>
<td>1,667</td>
</tr>
<tr>
<td>2019</td>
<td>244</td>
<td>288</td>
<td>304</td>
<td>80</td>
<td>188</td>
<td>437</td>
<td>1,541</td>
</tr>
</tbody>
</table>
Table s13. TB notification among children aged 0-14 by country of birth, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>Total no. cases</th>
<th>Of which Japan-born</th>
<th>Of which foreign-born</th>
<th>Of which COB unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>89</td>
<td>77</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>84</td>
<td>75</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>2012</td>
<td>63</td>
<td>56</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>66</td>
<td>58</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td>49</td>
<td>39</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>2015</td>
<td>51</td>
<td>40</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>2016</td>
<td>59</td>
<td>47</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>59</td>
<td>45</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>2018</td>
<td>51</td>
<td>39</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2019</td>
<td>38</td>
<td>28</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

COB = country of birth

Table s14.a. Source of infection of childhood TB by country of birth, 2019

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Father</th>
<th>Mother</th>
<th>Grandparents</th>
<th>Others</th>
<th>Unknown</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan-born</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

COB = country of birth

Table s14.b. Mode of detection of childhood TB by country of birth, 2019

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Screening at school</th>
<th>Contact investigation (family)</th>
<th>Contact investigation (casual)</th>
<th>Visit hospital with symptoms</th>
<th>hospitalized for other diseases</th>
<th>Visit hospital for other diseases</th>
<th>Others</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan-born</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>14</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

COB = country of birth
Table s15. Number of PTB and culture confirmed PTB, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>PTB</th>
<th>Of which culture confirmed</th>
<th>Proportion of culture confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>18,328</td>
<td>11,495</td>
<td>62.7</td>
</tr>
<tr>
<td>2011</td>
<td>17,519</td>
<td>10,915</td>
<td>62.3</td>
</tr>
<tr>
<td>2012</td>
<td>16,432</td>
<td>11,261</td>
<td>68.5</td>
</tr>
<tr>
<td>2013</td>
<td>15,972</td>
<td>10,523</td>
<td>65.9</td>
</tr>
<tr>
<td>2014</td>
<td>15,149</td>
<td>10,259</td>
<td>67.7</td>
</tr>
<tr>
<td>2015</td>
<td>14,123</td>
<td>10,035</td>
<td>71.1</td>
</tr>
<tr>
<td>2016</td>
<td>13,608</td>
<td>9,878</td>
<td>72.6</td>
</tr>
<tr>
<td>2017</td>
<td>13,001</td>
<td>9,580</td>
<td>73.7</td>
</tr>
<tr>
<td>2018</td>
<td>12,033</td>
<td>9,016</td>
<td>74.9</td>
</tr>
<tr>
<td>2019</td>
<td>11,094</td>
<td>8,110</td>
<td>73.1</td>
</tr>
</tbody>
</table>

PTB = pulmonary tuberculosis

Table s16. Number and proportion of cases with DST results to INH and RFP known, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>Culture confirmed cases</th>
<th>Of which DST results to INH and RFP known</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>2012</td>
<td>12,420</td>
<td>9,134</td>
</tr>
<tr>
<td>2013</td>
<td>11,698</td>
<td>8,409</td>
</tr>
<tr>
<td>2014</td>
<td>11,484</td>
<td>8,439</td>
</tr>
<tr>
<td>2015</td>
<td>11,283</td>
<td>8,511</td>
</tr>
<tr>
<td>2016</td>
<td>11,151</td>
<td>8,638</td>
</tr>
<tr>
<td>2017</td>
<td>10,886</td>
<td>8,856</td>
</tr>
<tr>
<td>2018</td>
<td>10,319</td>
<td>8,584</td>
</tr>
<tr>
<td>2019</td>
<td>9,396</td>
<td>7,613</td>
</tr>
</tbody>
</table>

DST = drug susceptibility test, INH = isoniazid, RFP = rifampicin
# Tuberculosis in Japan: Annual Report 2020

## Table s17. Number and proportion of cases with MDR by country of birth, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>DST results known (total)</th>
<th>Of which MDR (total)</th>
<th>DST results known (Japan-born)</th>
<th>Of which MDR (Japan-born)</th>
<th>DST results known (Foreign-born)</th>
<th>Of which MDR (Foreign-born)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>2012</td>
<td>9,134</td>
<td>64</td>
<td>0.7</td>
<td>8,471</td>
<td>45</td>
<td>0.7</td>
</tr>
<tr>
<td>2013</td>
<td>8,409</td>
<td>49</td>
<td>0.6</td>
<td>7,692</td>
<td>31</td>
<td>0.6</td>
</tr>
<tr>
<td>2014</td>
<td>8,439</td>
<td>58</td>
<td>0.7</td>
<td>7,728</td>
<td>35</td>
<td>0.7</td>
</tr>
<tr>
<td>2015</td>
<td>8,511</td>
<td>48</td>
<td>0.6</td>
<td>7,710</td>
<td>30</td>
<td>0.7</td>
</tr>
<tr>
<td>2016</td>
<td>8,638</td>
<td>50</td>
<td>0.6</td>
<td>7,692</td>
<td>35</td>
<td>0.7</td>
</tr>
<tr>
<td>2017</td>
<td>8,856</td>
<td>55</td>
<td>0.6</td>
<td>7,741</td>
<td>26</td>
<td>0.3</td>
</tr>
<tr>
<td>2018</td>
<td>8,584</td>
<td>60</td>
<td>0.7</td>
<td>7,625</td>
<td>30</td>
<td>0.4</td>
</tr>
<tr>
<td>2019</td>
<td>7,613</td>
<td>45</td>
<td>0.6</td>
<td>6,765</td>
<td>24</td>
<td>0.4</td>
</tr>
</tbody>
</table>

RR = rifampicin resistant, MDR = multi-drug resistance
Note: total includes those country of birth unknown. No. of DST results known and of which RR/MDR among those country of birth unknown are not shown in the table.

## Table s18 Number and proportion of cases with INH resistance by country of birth, 2012-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>DST results known (total)</th>
<th>Of which resistant to INH (total)</th>
<th>DST results known (Japan-born)</th>
<th>Of which resistant to INH (Japan-born)</th>
<th>DST results known (Foreign-born)</th>
<th>Of which resistant to INH (Foreign-born)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>2012</td>
<td>9,134</td>
<td>341</td>
<td>3.7</td>
<td>8,471</td>
<td>299</td>
<td>3.5</td>
</tr>
<tr>
<td>2013</td>
<td>8,409</td>
<td>339</td>
<td>4.0</td>
<td>7,692</td>
<td>300</td>
<td>3.9</td>
</tr>
<tr>
<td>2014</td>
<td>8,439</td>
<td>311</td>
<td>3.7</td>
<td>7,728</td>
<td>276</td>
<td>3.6</td>
</tr>
<tr>
<td>2015</td>
<td>8,511</td>
<td>351</td>
<td>4.1</td>
<td>7,710</td>
<td>304</td>
<td>3.9</td>
</tr>
<tr>
<td>2016</td>
<td>8,638</td>
<td>342</td>
<td>4.0</td>
<td>7,692</td>
<td>265</td>
<td>3.4</td>
</tr>
<tr>
<td>2017</td>
<td>8,856</td>
<td>364</td>
<td>4.1</td>
<td>7,741</td>
<td>298</td>
<td>3.8</td>
</tr>
<tr>
<td>2018</td>
<td>8,584</td>
<td>353</td>
<td>4.1</td>
<td>7,625</td>
<td>281</td>
<td>3.7</td>
</tr>
<tr>
<td>2019</td>
<td>7,613</td>
<td>349</td>
<td>4.6</td>
<td>6,765</td>
<td>281</td>
<td>4.2</td>
</tr>
</tbody>
</table>

INH = isoniazid
Note: total includes those country of birth unknown. No. of DST results known and of which RR/MDR among those country of birth unknown are not shown in the table.
Table s19. Number and proportion of those with delay among symptomatic pulmonary TB, 2010-2019

| Notification year | Patient delay | | Doctor delay | | Total delay | |
|-------------------|---------------|----------------|---------------|----------------|----------------|
|                   | Total n %     | Total n %      | Total n %     | Total n %      |               |
| 2010              | 8,940 18.3    | 13,094 22.6    | 9,022 19.6    |               |
| 2011              | 8,763 18.6    | 12,540 22.7    | 8,837 19.4    |               |
| 2012              | 8,177 18.7    | 11,302 22.0    | 8,226 19.6    |               |
| 2013              | 7,854 18.1    | 10,889 22.1    | 7,906 18.7    |               |
| 2014              | 6,901 18.8    | 10,156 21.6    | 6,967 19.0    |               |
| 2015              | 6,678 20.0    | 9,688 21.5     | 6,721 20.4    |               |
| 2016              | 6,703 19.7    | 9,213 22.0     | 6,754 19.6    |               |
| 2017              | 6,295 20.8    | 8,602 21.7     | 6,328 21.2    |               |
| 2018              | 6,253 20.6    | 7,979 22.0     | 6,293 20.7    |               |
| 2019              | 5,458 20.4    | 7,273 21.9     | 5,491 21.7    |               |

*Note: total excluding those cases without data on delay*
Table s20. Number of LTBI notifications by country of birth, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>Total no. cases</th>
<th>Of which Japan-born</th>
<th>Of which foreign-born</th>
<th>Of which COB unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>4,930</td>
<td>4,587</td>
<td>293</td>
<td>50</td>
</tr>
<tr>
<td>2011</td>
<td>10,046</td>
<td>9,464</td>
<td>493</td>
<td>89</td>
</tr>
<tr>
<td>2012</td>
<td>8,771</td>
<td>8,037</td>
<td>487</td>
<td>247</td>
</tr>
<tr>
<td>2013</td>
<td>7,147</td>
<td>6,474</td>
<td>425</td>
<td>248</td>
</tr>
<tr>
<td>2014</td>
<td>7,562</td>
<td>6,823</td>
<td>523</td>
<td>216</td>
</tr>
<tr>
<td>2015</td>
<td>6,675</td>
<td>5,940</td>
<td>540</td>
<td>195</td>
</tr>
<tr>
<td>2016</td>
<td>7,477</td>
<td>6,499</td>
<td>650</td>
<td>328</td>
</tr>
<tr>
<td>2017</td>
<td>7,255</td>
<td>6,244</td>
<td>757</td>
<td>254</td>
</tr>
<tr>
<td>2018</td>
<td>7,414</td>
<td>6,293</td>
<td>963</td>
<td>158</td>
</tr>
<tr>
<td>2019</td>
<td>7,684</td>
<td>6,610</td>
<td>905</td>
<td>169</td>
</tr>
</tbody>
</table>

COB = country of birth

Table s21. Mode of detection of LTBI cases, 2019

<table>
<thead>
<tr>
<th>Mode of detection</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual health check</td>
<td>110</td>
<td>1.4</td>
</tr>
<tr>
<td>Regular screening</td>
<td>523</td>
<td>6.8</td>
</tr>
<tr>
<td>Contact investigation</td>
<td>4,422</td>
<td>57.5</td>
</tr>
<tr>
<td>Other mass investigation</td>
<td>78</td>
<td>1.0</td>
</tr>
<tr>
<td>At hospital setting</td>
<td>2,312</td>
<td>30.1</td>
</tr>
<tr>
<td>Others</td>
<td>212</td>
<td>2.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>26</td>
<td>0.3</td>
</tr>
<tr>
<td>During follow-up for TB</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,684</td>
<td>100.0</td>
</tr>
<tr>
<td>Notification year</td>
<td>Individual health check</td>
<td>Regular screening</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>2007</td>
<td>25</td>
<td>0.8</td>
</tr>
<tr>
<td>2008</td>
<td>74</td>
<td>1.5</td>
</tr>
<tr>
<td>2009</td>
<td>84</td>
<td>2.0</td>
</tr>
<tr>
<td>2010</td>
<td>93</td>
<td>1.9</td>
</tr>
<tr>
<td>2011</td>
<td>219</td>
<td>2.2</td>
</tr>
<tr>
<td>2012</td>
<td>149</td>
<td>1.7</td>
</tr>
<tr>
<td>2013</td>
<td>106</td>
<td>1.5</td>
</tr>
<tr>
<td>2014</td>
<td>98</td>
<td>1.3</td>
</tr>
<tr>
<td>2015</td>
<td>96</td>
<td>1.4</td>
</tr>
<tr>
<td>2016</td>
<td>122</td>
<td>1.6</td>
</tr>
<tr>
<td>2017</td>
<td>109</td>
<td>1.5</td>
</tr>
<tr>
<td>2018</td>
<td>102</td>
<td>1.4</td>
</tr>
<tr>
<td>2019</td>
<td>110</td>
<td>1.4</td>
</tr>
</tbody>
</table>
**Appendix V: Supplementary data**

Table sd1. Population used to calculate the notification rates, 2019

<table>
<thead>
<tr>
<th>Age group</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>4,758,372</td>
<td>2,437,923</td>
<td>2,320,449</td>
</tr>
<tr>
<td>5-9</td>
<td>5,101,143</td>
<td>2,611,719</td>
<td>2,489,424</td>
</tr>
<tr>
<td>10-14</td>
<td>5,350,817</td>
<td>2,740,401</td>
<td>2,610,416</td>
</tr>
<tr>
<td>15-19</td>
<td>5,820,227</td>
<td>2,984,875</td>
<td>2,835,352</td>
</tr>
<tr>
<td>20-24</td>
<td>6,387,609</td>
<td>3,298,886</td>
<td>3,088,723</td>
</tr>
<tr>
<td>25-29</td>
<td>6,240,355</td>
<td>3,215,593</td>
<td>3,024,762</td>
</tr>
<tr>
<td>30-34</td>
<td>6,752,234</td>
<td>3,446,983</td>
<td>3,305,251</td>
</tr>
<tr>
<td>35-39</td>
<td>7,550,808</td>
<td>3,827,830</td>
<td>3,722,978</td>
</tr>
<tr>
<td>40-44</td>
<td>8,717,544</td>
<td>4,417,033</td>
<td>4,300,511</td>
</tr>
<tr>
<td>45-49</td>
<td>9,802,211</td>
<td>4,956,536</td>
<td>4,845,675</td>
</tr>
<tr>
<td>50-54</td>
<td>8,566,789</td>
<td>4,308,583</td>
<td>4,258,206</td>
</tr>
<tr>
<td>55-59</td>
<td>7,711,064</td>
<td>3,852,277</td>
<td>3,858,787</td>
</tr>
<tr>
<td>60-64</td>
<td>7,522,880</td>
<td>3,713,166</td>
<td>3,809,714</td>
</tr>
<tr>
<td>65-69</td>
<td>8,708,702</td>
<td>4,216,518</td>
<td>4,492,184</td>
</tr>
<tr>
<td>70-74</td>
<td>8,686,121</td>
<td>4,095,409</td>
<td>4,590,712</td>
</tr>
<tr>
<td>75-79</td>
<td>7,240,805</td>
<td>3,237,948</td>
<td>4,002,857</td>
</tr>
<tr>
<td>80-84</td>
<td>5,328,280</td>
<td>2,198,218</td>
<td>3,130,062</td>
</tr>
<tr>
<td>85-89</td>
<td>3,611,674</td>
<td>1,273,782</td>
<td>2,337,892</td>
</tr>
<tr>
<td>90+</td>
<td>2,309,313</td>
<td>577,652</td>
<td>1,731,661</td>
</tr>
<tr>
<td>Total</td>
<td>126,166,948</td>
<td>61,411,332</td>
<td>64,755,616</td>
</tr>
</tbody>
</table>


Note: The age group specific population does not necessarily add up to TOTAL as the numbers are based on population census. For details, please contact the Ministry of Internal Affairs and Communications, Japan.
Table sd2. Population used to calculate the notification rates among the foreign-born, 2010-2019

<table>
<thead>
<tr>
<th>Notification year</th>
<th>Population of foreign-born</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2,087,261</td>
</tr>
<tr>
<td>2011</td>
<td>2,047,349</td>
</tr>
<tr>
<td>2012</td>
<td>2,033,656</td>
</tr>
<tr>
<td>2013</td>
<td>2,066,445</td>
</tr>
<tr>
<td>2014</td>
<td>2,121,831</td>
</tr>
<tr>
<td>2015</td>
<td>2,323,189</td>
</tr>
<tr>
<td>2016</td>
<td>2,382,822</td>
</tr>
<tr>
<td>2017</td>
<td>2,561,848</td>
</tr>
<tr>
<td>2018</td>
<td>2,731,093</td>
</tr>
<tr>
<td>2019</td>
<td>2,933,137</td>
</tr>
</tbody>
</table>