

Tuberculosis Annual Report 2009
Series 3. Childhood TB

Tuberculosis Surveillance Center, RIT, JATA

Abstract The number of newly reported childhood tuberculosis (TB) cases (0-14 years old) in 2009 was 73, corresponding to a case rate of 0.43 per 100,000. In 2007 and 2008, the case numbers and rates of childhood TB increased slightly from the previous years, but in 2009 the case number and case rate were the lowest in the long history of the Japanese TB surveillance system. Among 73 childhood TB patients, 34 (46.6%) were aged 0-4 years, 3 (4.1%) were foreigners and 27 (37.0%) were extra-pulmonary TB. No TB meningitis case in this age group (0-14 years old) was reported for 3 years (from 2006 to 2008), but one case was reported in 2009. Also, 4 cases of disseminated TB were reported in 2009, the highest figure during those 10 years (from 2000 to 2009).

As for the mode of detection in 2009, 33 patients (45.2%) were detected at medical institutions with some symptoms or signs, 24 patients (32.9%) were detected by family contact examination, and 8 (11.0%) were detected by other contact examination. In the previous year (2008) these proportions were respectively 36.8%, 45.3% and 8.4%.

Of the 47 prefectures in Japan, 27 had no cases of childhood TB in 2009. Childhood TB cases were concentrated in metropolitan areas, such as Osaka (13 cases), Tokyo (11 cases) and Kanagawa prefecture (7 cases).

Key words: Tuberculosis, Childhood TB, Age, Trend, Prefectures, Mode of detection

Research Institute of Tuberculosis, JATA

Correspondence to: Tuberculosis Surveillance Center, Research Institute of Tuberculosis, JATA, 3-1-24, Matsuyama, Kiyose-shi, Tokyo 204-8533, Japan (E-mail: tbsur@jata.or.jp)

Table 1 Number (rates) of childhood TB patients and specific extra-pulmonary TB, 1965-2009

| Year | Newly notified TB aged 0-14 yrs | | No. of meningeal TB | | No. of miliary TB | |
|------|---------------------------------|-------|---------------------|----------------|-------------------|----------------|
| | Number | Rate | 0-14 yrs | 0-4 yrs (Rate) | 0-14 yrs | 0-4 yrs (Rate) |
| 1965 | 44,180 | 175.6 | — | — | — | — |
| 1970 | 18,197 | 73.4 | — | — | — | — |
| 1975 | 4,905 | 18.0 | 28 | 22 (0.221) | — | — |
| 1980 | 1,893 | 6.9 | 22 | 14 (0.164) | — | — |
| 1985 | 1,088 | 4.2 | — | — | — | — |
| 1990 | 518 | 2.3 | 9 | 4 (0.061) | 10 | 8 (0.122) |
| 1995 | 340 | 1.7 | 8 | 8 (0.136) | 8 | 8 (0.136) |
| 2000 | 220 | 1.2 | 7 | 4 (0.069) | 3 | 3 (0.052) |
| 2005 | 117 | 0.67 | 3 | 1 (0.018) | 3 | 1 (0.018) |
| 2006 | 85 | 0.49 | 0 | 0 | 1 | 1 (0.018) |
| 2007 | 92 | 0.53 | 0 | 0 | 0 | 0 |
| 2008 | 95 | 0.55 | 0 | 0 | 1 | 1 (0.019) |
| 2009 | 73 | 0.43 | 1 | 1 (0.019) | 4 | 3 (0.056) |

Extra-pulmonary TB: Cases are counted independently.

Rate: per 100,000

—: Not available

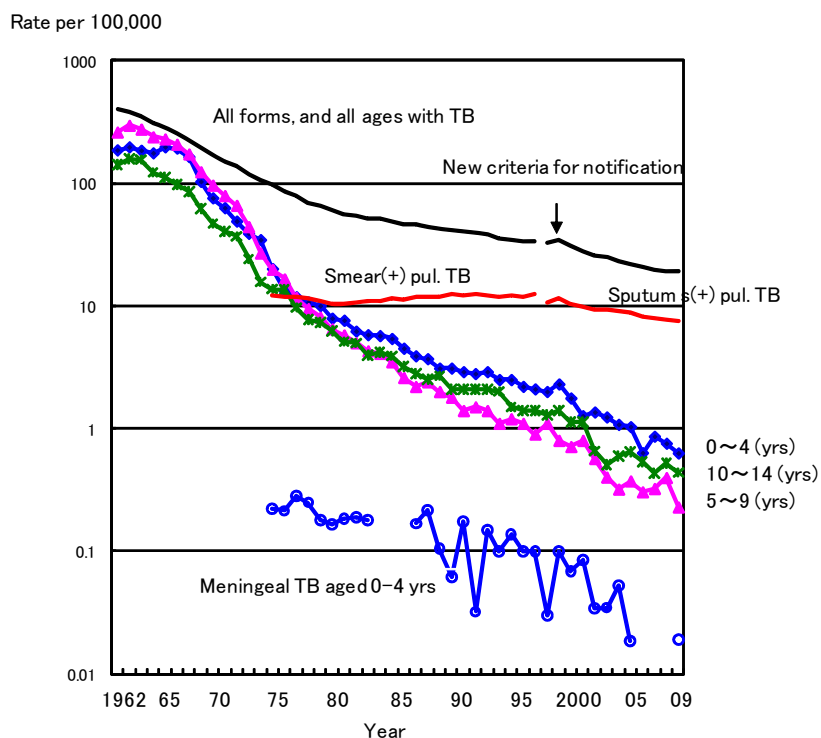


Fig. 1 Trend of childhood TB notification rates, 1962–2009

Table 2 Trend of newly notified childhood TB patients by age and calendar year, 1998–2009

| Year | Age (yrs) | | | | | | | | | | | | | | | Total |
|------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| 1998 | 31 | 39 | 15 | 18 | 16 | 12 | 18 | 14 | 13 | 10 | 7 | 7 | 29 | 18 | 27 | 274 |
| 1999 | 43 | 35 | 24 | 23 | 9 | 10 | 15 | 8 | 7 | 10 | 8 | 9 | 27 | 27 | 25 | 280 |
| 2000 | 29 | 27 | 19 | 14 | 14 | 8 | 10 | 13 | 5 | 7 | 14 | 11 | 21 | 12 | 16 | 220 |
| 2001 | 27 | 18 | 14 | 9 | 7 | 4 | 14 | 11 | 11 | 8 | 8 | 4 | 23 | 18 | 19 | 195 |
| 2002 | 30 | 21 | 14 | 12 | 3 | 9 | 8 | 5 | 6 | 6 | 2 | 3 | 14 | 15 | 7 | 155 |
| 2003 | 23 | 15 | 17 | 5 | 12 | 9 | 5 | 4 | 1 | 5 | 4 | 3 | 4 | 10 | 10 | 127 |
| 2004 | 20 | 18 | 9 | 5 | 10 | 5 | 2 | 3 | 5 | 4 | 3 | 4 | 12 | 6 | 11 | 117 |
| 2005 | 23 | 11 | 5 | 13 | 4 | 4 | 3 | 7 | 5 | 3 | 6 | 5 | 7 | 13 | 8 | 117 |
| 2006 | 9 | 6 | 8 | 6 | 6 | 6 | 3 | 3 | 2 | 4 | 3 | 4 | 3 | 13 | 9 | 85 |
| 2007 | 21 | 5 | 7 | 12 | 2 | 6 | 5 | 2 | 4 | 2 | 2 | 4 | 4 | 7 | 9 | 92 |
| 2008 | 11 | 14 | 11 | 4 | 1 | 2 | 6 | 2 | 5 | 8 | 2 | 5 | 7 | 8 | 9 | 95 |
| 2009 | 15 | 8 | 6 | 3 | 2 | 4 | 4 | 1 | 3 | 1 | 6 | 1 | 5 | 8 | 6 | 73 |

School mass-examination was revised in 2003.

Upper-limitation age of BCG vaccination was changed from 4 years to 6 months, with introduction of direct vaccination policy in 2005.

Table 3 Number of newly notified childhood TB patients by age and mode of detection, 2009

| | Age (yrs) | | | | | | | | | | | | | | Total | |
|---------------------------------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|-------|----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | 14 |
| School mass-examination | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 |
| Family contact examination | 5 | 4 | 4 | 1 | - | 2 | 1 | - | 2 | - | 2 | 1 | 1 | 1 | - | 24 |
| Other contact examination | 2 | 1 | - | - | - | - | 1 | - | 1 | - | 1 | - | - | 1 | 1 | 8 |
| At clinics/hospitals (symptoms) | 7 | 2 | 1 | 2 | 1 | 2 | 1 | - | - | 1 | 2 | - | 4 | 6 | 4 | 33 |
| Others | 1 | 1 | 1 | - | 1 | - | - | 1 | - | - | 1 | - | - | - | 1 | 7 |
| Total | 15 | 8 | 6 | 3 | 2 | 4 | 4 | 1 | 3 | 1 | 6 | 1 | 5 | 8 | 6 | 73 |

Table 4 Number of prefectures by number of childhood TB patients, 1980-2009

| Year | Number of childhood TB patients | | | | | | | Total |
|------|---------------------------------|----|-----|-----|-------|-------|------------|-------|
| | 0 | 1 | 2~4 | 5~9 | 10~14 | 15~19 | 20+(cases) | |
| 1980 | 0 | 0 | 1 | 6 | 7 | 4 | 29 | 47 |
| 1985 | 0 | 0 | 5 | 11 | 10 | 2 | 19 | 47 |
| 1990 | 0 | 3 | 13 | 11 | 8 | 2 | 10 | 47 |
| 1995 | 3 | 6 | 14 | 13 | 4 | 2 | 5 | 47 |
| 2000 | 9 | 8 | 13 | 10 | 3 | 1 | 3 | 47 |
| 2005 | 17 | 8 | 13 | 7 | 2 | 0 | 0 | 47 |
| 2006 | 19 | 13 | 8 | 6 | 1 | 0 | 0 | 47 |
| 2007 | 17 | 12 | 11 | 5 | 2 | 0 | 0 | 47 |
| 2008 | 14 | 12 | 16 | 4 | 1 | 0 | 0 | 47 |
| 2009 | 27 | 6 | 8 | 4 | 2 | 0 | 0 | 47 |

Table 5 Proportion of BCG vaccinated cases among newly notified childhood TB patients and LTBI cases, 2009

| | Age in years | | | | | | | | | | 0-4 | 5-9 | 10-14 | Total | |
|--------------------|---------------|------|-------|-------|-------|------|-------|-------|-------|------|------|------|-------|-------|-------|
| | Age in months | | | | | 0 | 1 | 2 | 3 | 4 | | | | | Total |
| | 0-2 | 3-5 | 6-8 | 9-11 | Total | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| TB cases | 1 | 8 | 3 | 3 | 15 | 8 | 6 | 3 | 2 | 34 | 13 | 26 | 73 | | |
| BCG vaccinated | 0 | 5 | 3 | 3 | 11 | 7 | 6 | 2 | 2 | 28 | 10 | 20 | 58 | | |
| BCG not vaccinated | 1 | 3 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 5 | 1 | 3 | 9 | | |
| BCG unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 3 | 6 | | |
| BCG vaccinated (%) | 0.0 | 62.5 | 100.0 | 100.0 | 73.3 | 87.5 | 100.0 | 100.0 | 100.0 | 84.8 | 90.9 | 87.0 | 86.6 | | |
| LTBI | 22 | 62 | 34 | 20 | 138 | 90 | 71 | 48 | 43 | 390 | 207 | 156 | 753 | | |
| BCG vaccinated | 0 | 34 | 31 | 18 | 83 | 81 | 68 | 44 | 37 | 313 | 177 | 120 | 610 | | |
| BCG not vaccinated | 20 | 26 | 1 | 0 | 47 | 5 | 2 | 0 | 3 | 57 | 16 | 10 | 83 | | |
| BCG unknown | 2 | 2 | 2 | 2 | 8 | 4 | 1 | 4 | 3 | 20 | 14 | 26 | 60 | | |
| BCG vaccinated (%) | 0.0 | 56.7 | 96.9 | 100.0 | 63.8 | 94.2 | 97.1 | 100.0 | 92.5 | 84.6 | 91.7 | 92.3 | 88.0 | | |

(%) Proportion of BCG vaccinated cases among all TB/LTBI cases excluding BCG unknown