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Surveillance of Tuberculosis in Europe - EuroTB

Report on tuberculosis cases notified in 2005

European Commission

WHO Collaborating Centre for the Surveillance of Tuberculosis in Europe

FRENCH INSTITUTE FOR PUBLIC HEALTH SURVEILLANCE

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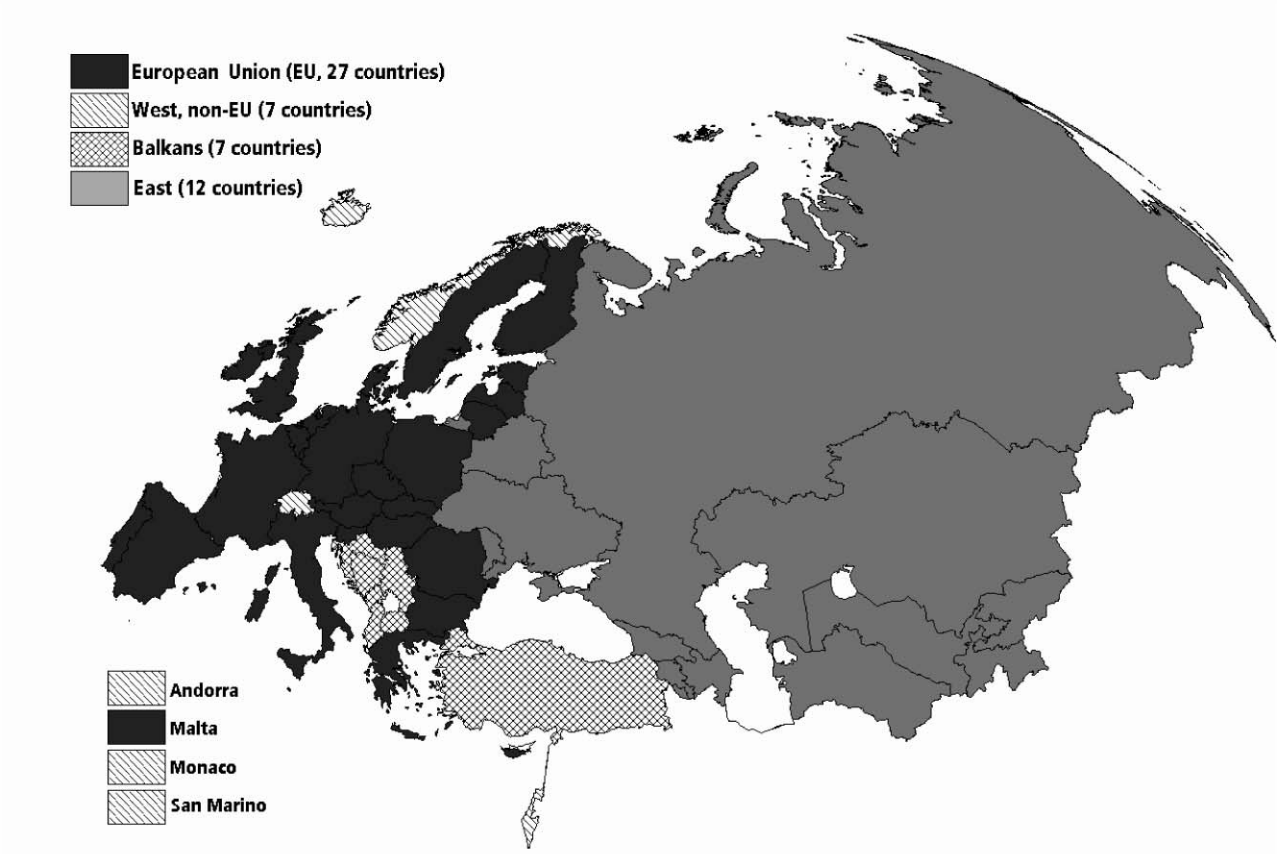

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WHO Collaborating Centre
for the Surveillance of Tuberculosis in Europe

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EuroTB is a European network for surveillance of tuberculosis in Europe set up in 1996, based on the participation of the national tuberculosis surveillance institutions in the 53 countries of the WHO European Region. The network is coordinated at the Institut de Veille Sanitaire (InVS), France, and is financially supported by the European Commission (DG-SANCO). EuroTB aims to improve the contribution of surveillance to tuberculosis control in the WHO European region, through the provision of valid, comparable epidemiological information on tuberculosis.

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1.1 Summary

In 2005, 426,717 cases of tuberculosis (TB) were notified in the WHO European Region. The overall notification rate averaged 48 cases per 100,000, with large variability between countries and an incremental west-to-east gradient in recent years. In general, TB mortality rates in recent years mirrored notification rates in their geographical gradient across the Region (median overall rate: 0.8/100,000, country range: 0.2-22.8).

European Union (EU) and West (34 countries)
The 27 countries of the EU, and Andorra, Iceland, Israel, Norway and Switzerland (West, no data from Monaco and San Marino), reported 93,129 TB cases in 2005. TB notification rates (18/100,000 overall) were highest in Romania (135) and Bulgaria (43) – which joined the EU in 2007 – and in the Baltic States (39-75). Between 2001 and 2005, overall notification rates decreased by 2.5% yearly, reflecting a decline in numbers of previously untreated TB cases. However, substantial increases were observed in Greece (+6%, improved reporting), and in Sweden and United Kingdom (+8 and +5% respectively, mostly in foreign-born cases). In 2005, 20% of cases (country range: 0-82%) were of foreign origin, two-thirds of whom were from Asia or Africa and 9% from the former Soviet Union (FSU). HIV prevalence among TB cases in recent years was 1% or less in 11/23 countries, 15% in Portugal but stable, while it increased since 2000 to 4-6% in 2005 in Estonia and Latvia and doubled between 2000 and 2003 in the United Kingdom (8% in 2003). Multi-drug resistance (MDR) remained more frequent in the Baltic States (combined MDR: 18%) than in the other countries (2%; range: 0-6%), where it was generally more common in cases of foreign origin, and highest (18%) among cases from the FSU. In 24 countries with complete outcome data (2004), success was reported in 78% of new definite pulmonary cases. Loss to follow up was more frequent among foreign cases than nationals (21% vs 15% respectively, all pulmonary cases) while death was less frequently reported (4% vs 8%). Success ratios diminished with increasing age. TB mortality rates were 0.2-9.6/100,000 (29 countries, latest available data 2001-2004).

Balkans (7 countries)
The Balkan countries notified 27,573 cases in 2005, of which 74% by Turkey alone. The overall TB notification rate in 2005 was 29/100,000, and higher in Bosnia & Herzegovina (55) than in Albania, Croatia, F.Y.R. of Macedonia, Montenegro, Serbia and Turkey (17 to 32). Notification rates have increased slightly in Turkey in recent years, as a result of improved case detection, but they decreased in other countries since 2001 by -2% to -7% yearly. HIV prevalence among TB cases was <1% in the 4 countries with data. Combined MDR was 1-2% in the 3 countries with representative data and 5% in Turkey. Success ratios among new pulmonary definite cases (2004) were 85% or higher in three countries, but lower in three other countries (43-84%). TB mortality rates ranged between 3.3 and 3.8/100,000 (4 countries, latest available complete data 2002-2004).

East (12 FSU countries)
In 2005, 306,015 TB cases were reported in the East, 51% of them by the Russian Federation. TB notification rates in 2005 (110/100,000 overall) were highest in Kazakhstan (210), Rep. of Moldova (149), Georgia (144) and Kyrgyzstan (129), and lower in Armenia, Azerbaijan, Belarus, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan (65-110). The mean annual increase in 2001-2005 was lower than that observed in 1995-2000 (+4% vs +10%). HIV prevalence among TB cases was 1% or lower in 5 countries in recent years, but was 2% in Armenia in 2005. No HIV prevalence data were available for Ukraine, but 2,243 AIDS cases with TB were reported in 2005 (5% of TB cases reported in the country). Nationwide and regional drug resistance data from a number of countries suggest a widespread, high prevalence of MDR (eg, 15% combined MDR in Georgia in 2005-2006). In countries reporting outcomes for complete cohorts of new smear-positive pulmonary cases (2004), 85% success was achieved in Kyrgyzstan but not in the other six countries (56-74%). Low success associated with high failures (4-12%) may reflect the frequency of 1^{ary} MDR. TB mortality rates ranged from 10.4 to 22.8/100,000 (6 countries, latest available complete data 2003-2004).

In the European Region, FSU countries have high TB notification and mortality rates, as well as a high burden of TB cases and MDR-TB. The FSU remains the regional priority for TB control, which is often complicated by inadequate information and resources necessary to mount the best-suited response. Further west, recent political changes have influenced the diversity of TB patterns in today's European Union. In industrialized countries anticipating TB elimination, control should prioritize immigrants and vulnerable sub-groups. The Baltic States should target MDR, as well as HIV which increasingly contributes to their TB case-load. Central European countries, several bordering the FSU, should be vigilant to a possible re-emergence of TB as the one in Western Europe in the early 1990s. EU-candidate states should continue efforts to achieve effective TB surveillance throughout their territories.

1.2 Резюме на русском языке

В 2005 г. было зарегистрированно 426 717 случаев туберкулеза (ТБ) в Европейском регионе ВОЗ. Общий показатель зарегистрированных случаев составлял 48 случаев на 100 000 человек и в последние годы сильно различался между странами, с последовательным градиентом с Запада на Восток. Показатели смертности от ТБ в последние годы в общем отражали показатели сообщенных случаев в их географическом градиенте в региону (общий средний показатель: 0,8/100 000, величина разности: 0,2 – 22,8).

Европейский Союз (ЕС) и Запад (34 страны)

В 2005 г., 27 стран ЕС и Андорра, Исландия, Израиль, Норвегия, Сан Марино и Швейцария (Запад, отсутствие данных из Монака и Сан Марино) сообщило о 93 129 случаях ТБ. Показатели зарегистрированных случаев ТБ (18/100 000 в общем) были самыми высокими в Румынии (135) и в Болгарии (43) – которые присоединились к ЕС в 2007 г. – и в прибалтийских странах (39-75). На протяжении с 2001 по 2005 г. показатели снижались ежегодно, отражая снижение числа случаев не получавших предыдущее лечение. Значительное повышение наблюдалось в Греции (+6 %, улучшенная отчетность) и в Швеции и в Соединенном Королевстве (+8 и +5% соответственно, в большинстве случаев у больных родившихся за рубежом.) В 2005 г., 20 % случаев (величина разности : 0,2 – 22,8) было иностранного происхождения, из которых две трети из Азии или Африки и 9 % из стран бывшего Советского Союза (бывший СССР). Превалентность ВИЧ у случаев ТБ в недавних годах достигала 1 % или менее в 11/23 странах, 15 % в Португалии, но она стабильна, тогда как с 2000 г. она повышалась на 4-6 % в 2005 г. в Эстонии и в Латвии и удвоилась на протяжении с 2000 по 2003 г. в Соединенном Королевстве (8 % в 2003 г.). Многолекарственная устойчивость (МЛУ) остается выше в прибалтийских странах (комбинированная МЛУ: 18 %) по сравнению с другими странами (2 %; величина разности: 0-6 %), в которых МЛУ наблюдалась в основном у случаев иностранного происхождения и была самой высокой (18 %) у случаев из бывшего СССР. В 24 странах предоставивших полные данные по исходам лечения (2004 г.), удачное лечение наблюдалось у 78 % новых конкретных случаев легочного ТБ. Прерванное лечение наблюдалось чаще у иностранцев чем у коренных жителей (21 % по сравнению с 15 %, все случаи с легочным ТБ), но менее часто сообщалось о летальных исходах (4 % против 8 %). Пропорция удачного лечения снижалась с повышанием возраста. Показатели смертности от ТБ достигли 0,2 – 9,6/100 000 (29 стран, последние доступные данные с 2001 до 2004 гг.)

Балканы (7 стран)

В балканских странах было зарегистрированно 27 573 случаев в 2005 г., из которых 74 % только в Турции. Общие показатели случаев ТБ в 2005 г. достигли 29/100 000 и были более высокие в Боснии & Герцеговине (55) по стравнению с Албанией, Хорватией, бывшей республикой Македонией, Черногорией, Сербией и Турцией (17 – 32). Показатели немного повысились в Турции в недавних годах в результате лучшего обнаружения случаев но снизились в других странах с 2001 г. (-2 до -7 %). Превалентность ВИЧ среди случаев ТБ была < 1 % в 4 странах предоставивших данные. Комбинированная МЛУ достигла 1-2 % в 3 странах предоставивших репрезентативные данные и 5 % в Турции. Пропорция удачного лечения среди новых конкретных легочных случаев (2004 г.) достигла или превысила 85 % в 3 странах, но была более низка в 3 странах (43 – 84 %). Показатели смертности от ТБ достигали с 3,3 до 3,8/100 000 (4 страны, последние доступные полные данные с 2002 до 2004 гг.

Восток (12 стран бывшего СССР)

В 2005 г. на Востоке было зарегистрированно 306 015 случаев ТБ, из которых 51 % в Российской Федерации. Показатели случаев ТБ в 2005 г. (110/100 000 в общем) были самые высокие в Казахстане (210), Республике Молдове (149), Грузии (144) и Кыргызстане (129) и более низкие в Армении, Азербайджане, Беларуси, Российской Федерации, Таджикистане, Туркменистане, на Украине и в Узбекистане (65 – 110). Среднее годовое повышение на протяжении с 2001 по 2005 г. было более низкое по сравнению с 1995-2000 гг. (+4 против +10 %). Превалентность ВИЧ среди случаев ТБ достигла 1 % или была ниже в 5 странах в последние годы, но достигла 2 % в Армении в 2005 г. Данные по превалентности ВИЧ были недоступны на Украине, но сообщалось о 2 243 случаях СПИДа с ТБ в 2005 г. (5 % всех извещенных случаев ТБ в стране). Общенациональные и региональные данные по лекарственной устойчивости из многих стран показывают распространенную превалентность МЛУ (напр: 15 % комбинированной МЛУ в Грузии с 2005 до 2006 г). В странах предоставивших исходы лечения у полных когорт новых легочных случаев с положительным мазком мокроты (2004), 85 % успешного лечения наблюдалось в Кыргызстане но эта пропорция была ниже в остальных 6 странах (56-74 %). Низкий уровень успешного лечения в связи с высокой степенью неудач (4-12 %) возможно отражает частоту первой МЛУ. Показатели смертности достигли от 10,4 до 22,8/100 000 (6 стран, последние доступные полные данные с 2003 по 2004 г.)

В Европейском регионе , страны бывшего СССР имеют высокие показатели сообщенных случаев ТБ и смертности и также высокую степень случаев ТБ и МЛУ ТБ. Бывший СССР остается региональным приоритетом для контроля ТБ и это часто усложнено неадекватной информацией и средствами , необходимими для подготовки надлежащего ответа. Далее на Запад, недавные политические изменения влияли на различие форм ТБ в сегодняшнем ЕС. В индустриализированных странах, предпринимавших устранение ТБ, надо направить контроль в первую очередь на иммигрантов и уязвимые подгруппы. Прибалтийские государства должны направить усилие на МЛУ и также на СПИД, которые в возрастающей мере содействуют бремени случаев ТБ. Страны центральной Европы, некоторые граничащие с бывшим СССР, должны наблюдать за возможным повторным появлением ТБ, так как проявилось в западной Европе в начале 1990 лет. Страны-кандидаты на вступление в ЕС должны в дальнейшем приложить усилие для усовершенствования эффективного эпиднадзора за ТБ на своих территориях.

2. Commentary

In 2005, 426,717 tuberculosis (TB) cases were reported by 51 of the 53 countries of the WHO European Region (no data from Monaco and San Marino), representing 8% of TB cases reported to WHO worldwide in the same year **[1]**. In 2005, 72% of all TB notifications in the Region were reported from the East, 22% from the European Union & West and 6% from the remaining countries in the Balkans.
The incidence of TB increased progressively when moving from West to East (overall notification rate 48/100,000), mirroring the geographical gradient of TB mortality (Figures 1, 2). Notification rates have diverged further between the West and East in recent years (Figure 3).

2.1 European Union and West (EU & West)

TB case notification

In 2005, the new EU members Bulgaria and Romania together accounted for 35% of all the 93,129 TB cases notified in the 32 EU & West countries sending data. The overall notification rate was 18/100,000, with rates lower than 10/100,000 in 15 countries and higher than 25/100,000 in Romania (135), the Baltic States - Lithuania (75), Latvia (63), Estonia (39) – Bulgaria (43), and Portugal (34) (Table 1). The overall rate in the 12 countries joining the EU since 2004 was nearly 5 times higher than in the 15 original member states. Despite the increased burden, the overall notification rate in the EU & West in 2005 was 9.7% lower than that in 2001, reflecting a steady downward trend in 21 countries. Overall, the average annual decrease in rates between 2001 and 2005 was larger than that observed between 1995 and 2000 (mean -2.3% versus -1.6% in countries with uninterrupted data since 1995, Figure 4). Nearly all countries experienced a decline in notification rates or stabilisation at low levels in paediatric cases (under 15 years) in recent years suggesting decreasing or low levels of transmission in the general population (Country Profiles). However, Greece, Sweden, and the United Kingdom experienced substantial increases in all age-groups between 2001 and 2005. In Greece, this trend is mostly explained by improved reporting in recent years. In Sweden, increases occurred among both native and foreign-born cases, while in the United Kingdom the increase was largely restricted to foreign-born cases. In general, TB notification rates in the population of foreign origin is much higher than that in nationals reflecting the greater predisposition of this sub-population to develop TB (57 versus 5/100,000 in 13 countries in 2004) **[2]**.

Males predominate among TB cases in nearly all countries, and this feature is more marked among nationals than among cases of foreign origin (overall M:F ratio 2.00 in nationals versus 1.39 in foreign cases, Table 2). This difference remains significant even when excluding Romania. Among countries reporting more than 50 cases, all those with rates below 10/100,000 had overall M:F ratios lower than 1.80, while countries with rates over 40/100,000 had ratios of 2.00 or more.
Paediatric cases represented 4% of cases, in both cases of national and foreign origin (Tables 3, 4). In contrast, the middle-aged (45-64 years) and the elderly (>64 years) together represented more than half the national cases, but only 28% of foreign cases. Most cases of foreign origin were concentrated among younger adults, especially in the 25-34 year age-group (35%). In 28 countries with case-based information, the median age of cases in 2005 was substantially higher in nationals than in cases of foreign origin (45 and 34 years respectively).
In 2005, 20% of TB cases reported were of foreign origin. This proportion was much higher when excluding Bulgaria and Romania (31%), and it ranged from 40 to 82% in 17 countries (Table 2). Overall, 33% of cases of foreign origin were from Asia, 33% from Africa, 19% from another country of the EU & West or Balkans and 9% from Former Soviet Union (FSU) countries other than the Baltic States (data from 26 countries, Table 5). Between 2000 and 2005, notifications among nationals decreased in nearly all countries but cases of foreign origin increased slightly, coming to represent an increasing proportion of all TB cases reported (Table 6, Figure 5).
Pulmonary TB was reported in 81% of cases while 19% had exclusive extra-pulmonary disease (Table 7). Mixed sites were present in 7% of all TB cases (ie, 25% of all cases had some form of extra-pulmonary localisation) with a wide range between countries reflecting differences in reporting practices and the ethnic profile of TB cases (data from 26 countries). While cases of European origin were more likely to have pulmonary disease, extra-pulmonary TB was more frequent in cases of Asian or African extract (Table 8, pooled cases reported by EU & West and Balkan countries). Severe forms of extra-pulmonary TB are rare, accounting for less than 2% of all TB cases reported (21 countries with data, Table 9).
The proportion of pulmonary TB has increased slightly since 2001 in the Baltic States and in Slovenia but decreased in countries with recent increments in imported cases of TB, notably Norway, Sweden and the United Kingdom (Table 10). Sputum smear

positive rates were lower than 5.0/100,000 population in half the countries since 1999, but were consistently higher than 10.0 in the Baltic States, Portugal and Romania (Table 11). In Romania, a substantial increase in rates to a very high level was observed between 1999 and 2002 (from 57.6 to 74.7/100,000), probably influenced by the expansion of TB-control activities in the country at this time. Rates increased steadily between 1999 and 2005 in Lithuania (from 27.9 to 38.6) and in the United Kingdom (1.8 to 3.2), with a concomitant increase in the proportion of pulmonary TB cases reported as sputum smear positive.

In 2005, 80% of the cases had not previously received anti-TB treatment (Table 12). This proportion has not changed markedly in the past years but the total number of new cases has decreased progressively and is the main reason for the declining rates in the EU & West (Figure 1). Changes in definition or in patient access to care may account for the increasing proportion of previously-treated cases among notified cases in certain countries (eg, Lithuania, Romania).

Half of the cases reported were confirmed by culture but the level varied widely across countries (range: 28-100%, Table 13). Reporting of culture result may not have been complete in 2005, which explains the higher levels in 2002 for a number of countries. Improvement in culture confirmation has been registered in the Baltic States, Czech Republic, France and the United Kingdom, while it has been high - 70% or more - since 1999 in Belgium, Denmark, Finland, Luxembourg, Slovenia, Sweden and Switzerland. Species identification showed *M. tuberculosis* in 93.8% of culture positive cases (25 countries, Table 14). *M. bovis* (0.3%) was detected in 12 countries and *M. africanum* (0.2%) in 7 countries. Most *M. bovis* cases (71 cases) originated from among nationals of the country of report, while more than half (29 cases) the *M. africanum* cases were of foreign origin, largely African.

Tuberculosis and HIV infection

Aggregated data on HIV sero-status of TB cases reported in 2000 or later were available for 23 countries (Table 15). Completeness of information varied widely due to differences in testing policies and in data collection (only HIV-positive results being reported in some countries). The proportion of TB cases with positive HIV sero-status for the latest available year (2000-2005) was highest in Portugal (15.4%), was 2-8% in 10 countries and 0-1% in 11 countries. This proportion was relatively stable in 2000-2005 in most countries but increased markedly in Estonia (from 0.1% to 6.4%) and Latvia (from 0.7% to 3.5%), countries experiencing a sharp increase in HIV infection in the early years of this decade **[3]**. In England & Wales, the number of HIV/TB cases and the proportion of TB cases with HIV increased steadily between 2000 and 2003, reflecting trends among recent immigrants from various countries to the United Kingdom **[4]**. In Spain, in contrast, both the number of HIV/TB cases and the proportion of TB cases with HIV have decreased since 2002.

TB was reported as initial AIDS-indicative disease in 2,056 (21%) of 9,774 AIDS cases notified in 2005 (31 countries, Table 16). No data on AIDS-indicative TB were available from the Netherlands and Romania. AIDS cases with TB as initial AIDS-indicative disease represented 2.2% of all TB cases notified in 2005, but countries with some of the highest estimated HIV prevalence among adults had higher proportions - Portugal (10%), Spain (8%), and Switzerland (6%) **[5]**. When adjusted for reporting delays, annual numbers of AIDS cases with TB as initial AIDS-indicative disease decreased by about 30% overall between 2000 and 2005 (Table 17).

Anti-tuberculosis drug resistance

Data on anti-TB drug resistance surveillance (DRS) in 2005 were made available by 30 countries, and by Romania for 2003-2004 (Table 18).

Among 24 countries having more than one laboratory performing drug susceptibility testing (DST), national external quality assurance schemes existed in 13 (Table 19). Apart from Bulgaria, Greece and Luxembourg, all national reference laboratories (NRL) had participated in international quality assurance for DST in the period 2003-2006. Concordance with the supranational laboratories was 100% for both isoniazid and rifampicin in 14 countries, and lower for one drug (90-96%) in seven countries.

Data from eighteen countries performing culture and DST routinely in 2005, and providing DST results to EuroTB as part of a national case-linked dataset, were considered representative (Group A, Table 20, see also Technical Note). In addition, nationwide aggregated data from another three countries were also included under Group A. France reported data from a well-established sentinel network of teaching hospital laboratories **[6]**. Romania reported findings from a countrywide DST survey, while data from Israel derive from all laboratories doing DST. DST data from another 10 countries were considered non-representative (Group B). Six of these countries

reported DST results in case-based format but the use of culture and/or DST was not routine.

Multidrug resistance (MDR) was much higher in the ex-Soviet Baltic States than elsewhere (Figure 6, primary MDR). Mean combined MDR was 18% in the Baltic States (country range: 15-20%) and 2% (0-6%) in the other 18 countries in Group A (Table 21). MDR was commonly higher in previously treated cases than in new cases (Tables 18, 22), and in cases of foreign origin compared to nationals (Tables 23, 24, Country Profiles). Cases originating from the FSU had the highest levels of MDR (18%, pooled data from 23 countries, not shown) and represented 80% of all MDR cases reported in the EU & West in 2005. In contrast, only 1% of Asians, Africans and cases from the EU & West itself (excluding Baltic States) were MDR. Between 2001 and 2005, there was an increase in the prevalence of combined MDR among cases of foreign origin in Austria and a net decrease in Belgium, while in Estonia there was a decrease among native cases (Table 25).

Treatment outcome

Twenty-five countries reported treatment outcome monitoring (TOM) data for definite pulmonary TB cases notified throughout the country in 2004 (Table 26). Complete cohorts of pulmonary culture positive cases were available in all countries except Bulgaria (smear and/or culture), Cyprus (incomplete data), and Sweden (smear). Case-linked data were available for all except Bulgaria, Israel and Sweden.

Among previously untreated cases (Table 27), 78% had a successful outcome, 6% died during treatment, 5% failed or continued treatment at 12 months and 11% were lost to follow up (defaulted, transferred or no known outcome). Among countries reporting over 20 new cases, success ratios ranged very widely from 56% in Hungary to 89% in Slovenia. Six countries achieved 85% success or more. Low success ratios (75% or less) were generally associated with a loss to follow-up in excess of 10%, except in the Baltic States where it resulted from higher frequency of death and protracted treatment associated with a larger case-load of drug-resistant cases. In Belgium, Portugal, Romania in particular, success ratios among new cases have improved as a result of a reduction in the proportion of cases lost to follow-up over the years (Country Profiles).

Among previously treated cases (Table 28), the overall success ratio was lower than among new cases (49%; range: 31-100%). Death (10%), failure (8%) and still on treatment (12%) were more frequently reported than among new cases, due to the higher prevalence of drug resistance in this group and to the longer duration of re-treatment regimens. High proportions of loss to follow up (21%) also lowered success ratios.

The likelihood of success decreased markedly with age as risk of dying increased (Figure 7). This, along with differences in co-morbidity - including HIV - and in the completeness of reporting of outcome and *post-mortem* diagnosis of TB, may explain the wide range in death ratios observed between countries.

In countries reporting comprehensive case-linked data, success was marginally higher in nationals than in cases of foreign origin (73% versus 70%, Table 29), while deaths were twice commoner (8% versus 4%). In contrast, nationals were less likely to be lost to follow up (15% versus 21%). Cases with pulmonary TB were less likely to succeed treatment and more likely to die than extra-pulmonary cases (73% and 7% versus 79% and 4% respectively, Table 30). This attests to the more serious nature of pulmonary disease, with serious forms of extra-pulmonary disease being rare in the EU & West (see above). Multivariable analysis using data pooled from 9 EU & West countries in 2000-2001 showed however that presence of a pulmonary site did not significantly diminish the chances of success when other factors like drug-resistance, age and patient origin were adjusted for **[7]**.

2.2 Balkans

TB case notification

In 2005 Turkey alone accounted for 74% of the 27,573 TB cases reported by the seven Balkan countries (Table 1).[1] The overall TB notification rate was 29/100,000, with rates higher in Bosnia & Herzegovina (55) than in the other countries (17-32). Between 2001 and 2005, rates decreased by 2-7% yearly in all countries except Turkey, where a stabilisation in rates is due to increased efforts to improve case detection in recent years. Over the last few years, rates have been decreasing in all age-groups in Croatia, have been stable or decreasing in Bosnia & Herzegovina, Macedonia F.Y.R. and Serbia, and increasing in the elderly while decreasing in the other age-groups in Albania (Country Profiles).

Only 1% of cases overall were of foreign origin (9% in Croatia) and two-thirds of them were from another Balkan country (Tables 2, 5). Two-thirds of notifications were among males. Paediatric cases represented 5% of reported cases in 2005 but reached 14% in Macedonia F.Y.R., suggesting over-

[1] Not including 1,102 cases from Kosovo (rate 52/100,000)

notification of childhood cases in this country (Table 3). Age-specific notification rates increased progressively from childhood to old age in all countries (Country Profiles).

In 2005, pulmonary cases represented 76% of notifications (range: 67-92%), including also cases with mixed disease (3% overall, excluding Montenegro, Table 7). The proportion of cases with an extra-pulmonary site was high in Albania (33%) and Turkey (30%, of which 3% mixed). TB meningitis or disseminated TB represented 1.1% of all TB cases (Table 9). Half of the pulmonary TB cases were smear positive, with an overall rate of smear-positive TB cases of 11.7/100,000 (Table 11). In none of the countries were rates lower than 5.0/100,000 in recent years although both smear positive cases and rates have decreased progressively in Bosnia & Herzegovina and in Croatia since 1999.

Only 9% of cases reported in 2005 had been previously treated or diagnosed (range: 7-16%, Table 12). All countries reported culture results in 2005 (mean: 34% culture confirmed, range 24-63%, Table 13), in contrast to only three countries with data in 1999. No cases of *M. bovis* or *M. africanum* were reported (Table 14).

Tuberculosis and HIV infection

HIV sero-prevalence among TB cases was reported by four countries and was low (range: 0.0-0.3%, Table 15), in keeping with the low HIV prevalence and AIDS incidence observed in the general population in the Balkan sub-region **[3, 5]**. Among the 143 AIDS cases notified, 36 (25%) had TB as first AIDS indicative disease (Table 16). This represented less 0.1% of all TB notifications made by the reporting countries. Total numbers of AIDS cases with initial TB showed no particular trends between 2000 and 2005 (Table 17).

Anti-tuberculosis drug resistance

All countries reported DRS data for 2005, five of which participated in international EQA for DST (Table 19, 20). Three were classified in Group A. Case-linked data on DST results were provided by all countries except Montenegro (in this report aggregate data for Bosnia & Herzegovina were used being more complete than case-linked data). DRS data were received for the first time from Turkey. Combined MDR ranged from 1-2% in Group A countries but was 5.1% in Turkey (Group B, Table 21). An increase in both MDR cases and MDR prevalence was registered in Bosnia & Herzegovina between 2001 and 2005 (from 2 to 11 cases, 0.2% to 1.0%, Table 25).

Treatment outcome

Outcomes for definite pulmonary TB cases notified in 2004 were reported by all countries (except Montenegro), with Albania and Macedonia F.Y.R providing data on complete cohorts (Table 26). Data for Turkey were complete for new cases only. Success ratios for new definite pulmonary cases ranged between 75% and 98%, except for Croatia (43%) were half the cohort was lost to follow up (Table 27). Deaths were reported in 0-7% of cases. Between 2002 and 2004, success ratio has remained stable among new cases in Bosnia & Herzegovina, Macedonia F.Y.R and the Belgrade region of Serbia (Country Profiles). Success among retreated cases in 2004 was 66-92%, but 33% in Croatia (Table 28).

2.3 East

TB case notification

In 2005, the overall TB notification rate in the 12 non-Baltic former Soviet Union countries in the East was 110/100,000 (306,015 cases, Table 1). Rates were higher than the mean in Kazakhstan (210), Rep. of Moldova (149), Georgia (144) and Kyrgyzstan (129). Over half of the cases in the East were reported by the Russian Federation, the only European country on the WHO list of 22 high TB-burden countries in the world **[1]**.

Notification rates increased on average by 4.3% yearly between 2001 and 2005, but this ranged widely between countries (-10% to +19%). The overall increase was largely attributed to increasing inclusion of previously treated cases (Figure 3). The mean annual increase in rates was much lower in 2001-2005 than that observed between 1995 and 2000 (4% vs 10%, excluding Georgia, Figure 4). In the last 5 years annual increases in excess of 10% were reported by countries where TB control programmes have recently expanded and may therefore be explained by increased detection and patient access to care rather than a true increase in incidence. TB surveillance data and trends in the East have to be interpreted with caution, as in several countries TB notification has been variably affected by global changes in health and in TB control systems since the early 1990s. TB cases diagnosed in specific population groups (e.g. prisoners in the Russian Federation since 1998), and retreated cases other than relapses (e.g. Uzbekistan since 2002) were increasingly included in TB statistics.

In 2005, the male-to-female ratio of notified cases was 1.3-1.9 in the five central Asian republics and ranged from 2.0 to 4.0 in the rest of the countries (Table 2). This wide variation suggests sex-related

differences in TB transmission, care and reporting between countries. Nearly all cases reported in the East were autochthonous and Rep. of Moldova and the Russian Federation reported a number of foreign citizens among their notifications, which represented less than 1.0% of notified cases.

Paediatric TB cases represented 4% of the cases overall, but reached 13% in Kyrgyzstan where distribution by age-group was restricted to previously untreated cases (Table 3). The age group 15-44 years accounted for 62% of cases notified, while only 7% of cases were aged over 64 years. The high case-load in young and middle-aged adults indicates intense transmission continuing into recent years.

In 2005, 85% of TB cases had pulmonary localisation (range: 73-96%), of which 35% were sputum smear positive (30-51%) (Tables 7, 11). Rates of pulmonary smear-positive TB were high (mean: 35/100,000, range: 23-84). More countries have reported data on smear-confirmation over time. The proportion of pulmonary cases and rates of pulmonary smear-positive disease have changed over time (Table 10). In countries like Azerbaijan and Rep of Moldova increases in recent years coincide with the expansion of DOTS programmes, which prioritise the detection and care of the most infectious cases.

In 2005, the proportion of retreated or previously diagnosed cases ranged widely from 4% to 40% (mean: 23%), reflecting differences in the definition of a notifiable case, even between neighbouring countries (Table 12). In Azerbaijan (40% previously treated) a larger load of retreated cases have been included in recent years as the national treatment programme expanded.

Culture confirmation has improved slightly over the years but still remains infrequent (6 countries reporting in 2005, mean: 20%, range: 4-36%, Table 13). TB programmes in the East rely more on direct microscopy results, or do not collect this information or else combine positive results of direct microscopy and culture, reported together as 'BK+'.

Tuberculosis and HIV infection

Six countries reported HIV sero-status of notified TB cases (Table 15), and HIV prevalence was 1% or lower in Azerbaijan, Belarus, Georgia, Russian Federation and Uzbekistan in recent years, but was 2% in Armenia in 2005. In Belarus and the Russian Federation, only test results of new cases were reported. Kyrgyzstan and the Russian Federation did not report case-based AIDS data to EuroHIV in 2005, while the other 10 countries together reported 2,439 AIDS-TB cases, of which 2,243 (92%) from the Ukraine alone (Table 16). TB as initial AIDS indicative disease represented 5.2% of total TB cases notified in Ukraine but less than 1.0% in the other countries. In at least 9 countries the number of AIDS cases with initial TB diagnosis has increased since 2000 (Table 17).

Low absolute numbers of AIDS cases reported with TB may be due to AIDS underreporting in the East. On the other hand, high TB morbidity among AIDS cases may be influenced by the ease of diagnosis of TB over other AIDS-indicative diseases. However, it may also reflect associated risks for both HIV infection and TB disease in sub-populations like injecting drug-users **[8]**. Surveillance data currently available in the East are insufficient to monitor the overlap between the HIV and TB epidemics, which are expected to increase both the TB and the MDR-TB case load in the coming years **[9]**.

Anti-tuberculosis drug resistance

In the East, four countries provided fresh DRS data for 2005-2006, all of which had participated in international EQA activities since 2002 (Tables 18-20). Only data from Georgia, which conducted a nationwide DST survey in 2005-2006, were considered representative. Results from Kazakhstan in 2005 were comparable to the findings of a nationwide DST survey in 2001 (Country Profiles). Levels of combined MDR were similar in Armenia, Kazakhstan and Kyrgyzstan (21-28%, Table 21), but lower in Georgia (15.4%). In spite of the variable quality of DRS data, evidence in recent years indicates that drug resistance is highly prevalent in most countries of the former Soviet Union (Table 18) **[10-13]**.

Treatment outcome

Ten countries reported TOM data on 2004 cohorts of smear positive cases (new smear and/or culture positive cases in Belarus, Table 26). Seven countries had complete nationwide cohorts (Group A) while reports from Armenia, the Russian Federation and Uzbekistan were restricted to DOTS units (Group B).

In countries with nationwide data, the overall success ratio among previously untreated cases was 70% (range: 56-85%, Table 27). This low success was explained by a combination of high levels of failures (mean: 9%, range: 4-12%) and loss to follow up (16%, range: 6-32%). A similar pattern was observed in Group B countries. The proportion of cases lost to follow up among reported cohorts continues to preclude a number of countries from attaining the 85% treatment success target in recent years (Country Profiles). High failures indicate low

effectiveness of initial regimens due to primary MDR and also poor treatment adherence. The proportion of failures among new cases was close to the proportion of primary MDR reported in countrywide surveys in Georgia (5% and 7% respectively, Tables 18, 27) and Kazakhstan (11% and 14%), although case-based data were not available to confirm any links.

Among retreated cases in Groups A and B (Table 28), success was lower than 60% in all countries except Kyrgyzstan, Tajikistan and Uzbekistan (61-73%), while deaths, failures and loss to follow up were all higher than among previously untreated cases (11%, 17% and 22% respectively).

2.4 TB mortality

Thirty-nine countries reported TB mortality data with complete nationwide coverage for 2001 or later (data from Serbia including Montenegro, Table 31). There was a wide regional gradient in the distribution of TB mortality rates (median overall rate: 0.8/100,000, latest available year, Figure 2), being 19.4/100,000 population in the East (range: 10.4-22.8), 3.4 in the Balkans (3.3-3.8) and 0.7 in the EU & West (0.2-9.6). Throughout much of the EU & West, TB mortality rates have decreased or remained stable of late. A net decrease in TB mortality rates over 4 to 5 consecutive years in excess of 10% a year was observed in Austria, Czech Republic, Finland, Hungary, Ireland, Latvia and Switzerland, while rates increased by more than 10% yearly in Belarus.

Across the Region, most TB deaths had respiratory or miliary TB (Table 32). Reporting practices may differ between countries. For instance in Lithuania, a much larger proportion of TB deaths was attributed to miliary disease in contrast to neighbouring Estonia and Latvia.

TB deaths would be expected to occur among both the incident TB cases and the prevalent pool of TB patients in a country. Under stable conditions, the relationship between reported TB cases and TB deaths for a given year would be expected to shed light on the lethality of the disease. However, under- or over-reporting in TB notifications (reported by national surveillance agencies) or TB deaths (from vital registration systems) would affect any association between these two indicators.

In the European Region, the ratio of TB deaths to the TB notifications shows no strong geographical pattern. Nonetheless, low death-to-notification ratios (<0.10) were restricted to Western countries, while all Former Soviet Union countries had high ratios (0.10+). This may reflect the influence of MDR, but also the effect of HIV co-morbidity, as can be observed in Ukraine (ratio 0.25) which accounted for 92% of the TB/AIDS cases reported by countries in the East (Table 16).

The mean age of autochthonous TB cases is higher than that of foreign cases, and death among cases in the EU & West is higher in nationals and increases with advancing age (Tables 3, 4, 29; Figure 7). Low death-to-notification ratios in countries like Denmark, Israel, The Netherlands, Norway, Sweden, Switzerland and the United Kingdom (0.02-0.05) may therefore reflect a lower risk of dying among cases of foreign origin - currently representing more than half the TB notifications in these countries – compared to nationals. In contrast, in certain countries with a low proportion of immigrant TB (eg, Finland, Hungary, Poland), a higher death-to-notification ratio may reflect the higher mean age of the TB patient population. These observations suggest important differences in the profile of a notified case with respect to risk of dying, even if differences in data collection practices cannot be excluded.

2.5 Conclusions and recommendations

Surveillance data for tuberculosis continue to portray a very diverse epidemiological situation in Europe. Countries of the former Soviet Union are a clear concern, with high TB notification rates and – despite the incomplete information – a high frequency of drug resistance.

Most countries of the EU & West have experienced a steady decrease in overall TB incidence for a number of decades, even if it briefly reversed in certain countries in the early 1990s **[14]**. This decline has been more marked in the autochthonous populations than in persons originating from outside the countries of report. Following the recent expansion of the EU, three broad epidemiological patterns can be discerned in the EU & West with respect to TB:

1) western, industrialised countries where TB rates are low and disease increasingly aggregates in immigrants and in sub-groups and settings associated with poverty and lowered immunity. Drug-resistance is low but usually higher in cases of foreign origin. HIV among TB cases varies from low to high;

2) the Baltic States, characterised by high TB rates, low migrant TB, high drug resistance and where levels of HIV are increasing among TB patients;

3) central European states who joined the EU from 2004 - several of which bordering FSU countries - in which TB rates are moderate to high but on the decline, and cases of foreign origin, HIV co-morbidity and drug resistance are as yet uncommon.

EU-candidate countries have made efforts in recent years to report more complete and meaningful information. Progress has been made in Balkan countries in 2006, with three countries – Macedonia FYR, Serbia and Turkey – providing case-based data to European surveillance for the first time.

European recommendations have been instrumental in spearheading the harmonisation of TB surveillance at European level. The TB case definition for surveillance was revised in 2006 by the European Centre for Disease Prevention and Control (ECDC) in order to enhance its utility in surveillance.

Molecular surveillance of MDR-TB was started by EuroTB/RIVM in 2005 as a means to complement the current analysis of drug resistance surveillance data and identify European MDR-TB clusters (www.eurotb.org). Data collected through this system have recently been used by ECDC in connection with an assessment of risk for extensively-resistant MDR (XDR) in Europe **[15]**.

Despite the progress, more efforts are needed to improve the uptake of European surveillance recommendations and ensure greater comparability of data between countries and over time, particularly in the East. This can be achieved by:

- enhancing computerised TB case-based reporting at national and European level;
- promoting laboratory reporting of TB cases to the epidemiological authorities so as to improve completeness of reporting;
- implementing drug resistance surveillance more widely, either by collecting initial DST results for all cases or via periodic prevalence surveys **[16]**;
- implementing treatment outcome monitoring and developing additional targets for treatment results, including cases with extra-pulmonary disease;
- as in most countries TB patients represent a useful sentinel for the progression of the HIV epidemic, surveillance of HIV among TB cases using national TB and HIV/AIDS case reporting, or by conducting HIV prevalence surveys in areas with high or increasing HIV prevalence, is important **[17]**;
- developing indicators to monitor TB control in risk groups, including TB screening, contact investigation and outbreak management, all crucial in low incidence countries **[18]**.

Improved tuberculosis surveillance would be expected to contribute to public health action by:

- describing the TB situation in a more complete, accurate and timely manner as a means to inform better the decision-makers on priorities in TB control across the different parts of the European Region;
- targeting high incidence zones (eg, metropolitan areas, **[19]**) and sub-populations (eg, recent immigrants, prisoners) at increased risk of TB infection, drug-resistance or unfavourable outcome of disease in order to prioritise preventive measures;
- promoting the role of laboratories in public-health activities by giving more importance to confirmatory testing and detection of cases with directly transmissible disease, and drug-susceptibility testing;
- detecting linked cases and clusters to help mitigate outbreaks, particularly in low incidence countries;
- advocating for the joint case management of HIV/TB patients;
- preventing the emergence of MDR and XDR by ensuring better case holding and management;
- sensitising public health workers and clinicians to risk factors – particularly those modifiable - associated with unfavourable treatment outcome, to permit timely pre-emptive action on the individual patient level.

2.6 References

1. World Health Organization. Global Tuberculosis Control: Surveillance, Planning, Financing. WHO Report 2007. Geneva, Switzerland. WHO/HTM/TB/2007.376.
2. EuroTB and the national coordinators for tuberculosis surveillance in the WHO European Region. Surveillance of tuberculosis in Europe. Report on tuberculosis cases notified in 2004 (www.eurotb.org). InVS, Saint-Maurice, France. February 2006.
3. EuroHIV. HIV/AIDS Surveillance in Europe. End-year report 2005. Saint-Maurice: Institut de veille sanitaire, France, 2006. No. 73.
4. Ahmed AB, Abubakar I, Delpech V, Lipman M, Boccia D, Forde J, Antoine D, Watson JM. The growing impact of HIV infection on the epidemiology of tuberculosis in England and Wales: 1999 to 2003. Thorax 2007 (in press).

5. UNAIDS. 2006 Report on the global AIDS epidemic. Geneva, Switzerland. May 2006. UNAIDS/06.13E.
6. Robert J, Trystram D, Truffot-Pernot C, Carbonnelle B, Grosset J. Surveillance of Mycobacterium tuberculosis drug resistance in France, 1995-1997. AZAY Mycobacteria Study Group. Int J Tuberc Lung Dis 2000; 4: 665-672.
7. Falzon D, Le Strat Y, Belghiti F, Infuso A. Exploring the determinants of treatment success for tuberculosis cases in Europe. Int J Tuberc Lung Dis 2005; 9:1224-1229.
8. Podlekareva D, Mocroft A, Dragsted UB, Ledergerber B, Beniowski M, Lazzarin A et al. Factors associated with the development of opportunistic infections in HIV-1-infected adults with high CD4+ cell counts: a EuroSIDA study. JID 2006;194: 633-641.
9. Corbett EL, Watt CJ, Walker N, Maher D, Williams BG, Raviglione MC, Dye C. The growing burden of tuberculosis: global trends and interactions with the HIV epidemic. Arch Intern Med. 2003; 163: 1009-21.
10. World Health Organization. Anti-tuberculosis drug resistance in the World. Report No. 3. March, 2004. WHO/HTM/TB/2004.343.
11. Crudu V, Arnadottir T, Laticevschi D. Resistance to anti-tuberculosis drugs and practices in drug susceptibility testing in Moldova, 1995-1999. Int J Tuberc Lung Dis 2003; 7: 336-42.
12. Kimerling ME, Slavuckij A, Chavers S, et al. The risk of MDR-TB and polyresistant tuberculosis among the civilian population of Tomsk city, Siberia, 1999. Int J Tuberc Lung Dis 2003; 7: 866-872.
13. Cox HS, Orozco JD, Male R, Ruesch-Gerdes S, Falzon D, Small I et al. Multidrug-resistant tuberculosis in Central Asia. Emerg Inf Dis 10: 865-872.
14. Raviglione MC, Sudre P, Rieder HL, Spinaci S, Kochi A. Secular trends of tuberculosis in Western Europe. Bulletin of the World Health Organization 1993;297-306.
15. Manissero D, Fernandez de la Hoz K. Extensive drug-resistant TB: a threat for Europe? Euro Surveill. 2006 Sep 28;11(9):E060928.2. www.eurosurveillance.org/ew/2006/061103.asp.
16. World Health Organisation. Guidelines for surveillance of drug resistance in tuberculosis 2nd edition. Geneva, Switzerland 2003. WHO/CDS/TB/2003.320. www.who.int/gtb/publications/drugresistance/tb_2003_320/surveillance_guidelinespdf.pdf.
17. World Health Organisation. Guidelines for HIV surveillance among tuberculosis patients. 2nd edition. Geneva, Switzerland 2004. WHO/HTM/TB/2004.339. whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.339.pdf.
18. Broekmans JF, Migliori GB, Rieder HL et al. European framework for tuberculosis control and elimination in countries with a low incidence. Recommendations of the World Health Organization (WHO), International Union Against Tuberculosis and Lung Disease (IUATLD) and Royal Netherlands Tuberculosis Association (KNCV) Working Group. Eur Respir J. 2002;19:765-7.
19. Hayward AC, Darton T, Van-Tam JN, Watson JM, Coker R, Schwoebel V. Epidemiology and control of tuberculosis in Western European cities. Int J Tuberc Lung Dis 2003; 7: 751-757.

3. TABLES

Summary Table

Tuberculosis surveillance data by area, WHO European Region, 2005

	Table showing data by country	Geographic area *						Total	
		European Union & West		Balkans		East			
		N†		N†		N†		N†	
Total population (millions)	-	34	509.8	7	94.9	12	277.6	53	882.3
Demographic and clinical features of TB cases, 2005									
Total number of cases	1	32	93 129	7	27 573	12	306 015	51	426 717
TB cases / 100 000 population	1	32	18.3	7	29.1	12	110.2	51	48.4
Mean annual % change in notification rate (2001-2005)	1	32	-2.5%	7	-0.5%	12	+4.3%	51	+2.1%
Foreign origin	2	32	20%	7	1%	12	0%	51	5%
Sex ratio (male to female), nationals	2	32	2.0	7	1.8	10	1.6	49	1.7
Sex ratio (male to female), foreign-born/citizens	2	32	1.4	7	1.3	3	3.1	42	1.4
Age over 64 years, nationals	3	32	21%	7	15%	10	7%	49	11%
Age over 64 years, foreign-born/citizens	4	32	9%	7	25%	2	1%	41	9%
Pulmonary disease	7	31	80%	7	76%	10	85%	48	83%
Pulmonary sputum smear positive cases / 100 000 population	11	31	7.1	7	11.7	10	34.5	48	15.0
No previous history of TB / TB treatment	12	32	80%	7	91%	12	77%	51	78%
Culture positive	13	32	50%	7	34%	6	20%	45	30%
HIV infection among TB cases (latest available data 2001-2005)	15	23	3.0%	4	0.2%	6	1.1%	33	1.7%
TB deaths / 100 000 (median, latest available rates 2001-2004) ‡	31	29	0.7	4	3.4 §	6	19.4	39	0.8
Multidrug resistance (MDR), 2005 ‡									
Primary MDR (median)	22	21	1.2%	3	0.4%	1	6.8%	25	1.1%
Nationals, combined MDR (median)	23	21	0.5%	3	1.1%	1	15.4%	25	0.8%
Foreign-born/citizens, combined MDR (median)	24	20	1.7%	1	0.0%	0	-	21	1.6%
Outcome, new definite pulmonary cases, 2004 ‡									
Success (cure or treatment completion)	27	24	78%	2	79%	7	70%	33	75%
Death	27	24	6%	2	4%	7	5%	33	6%
Failure	27	24	2%	2	1%	7	9%	33	5%
Still on treatment	27	24	3%	2	0%	7	0%	33	2%
Loss to follow up (default, transfer, unknown)	27	24	11%	2	17%	7	16%	33	13%

* Mean value except where otherwise indicated; for definition of geographic areas see Technical Note
† Number of countries with available data and included in the statistics
‡ Including only countries with representative nationwide data.
§ Data from Serbia including Montenegro, now 2 separate countries

Primary MDR: among previously untreated cases; Combined MDR: among all cases tested (see Technical Note)

Table 1. Tuberculosis cases, case rates per 100,000 population and mean annual change in rates, WHO European Region, 2001-2005

Geographic area	2001		2002		2003		2004		2005		Mean annual % change in rate, 2001-2005
Country	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	
EU-15 (pre-2004)											
Austria	1 075	13.3	1 076	13.2	980	12.0	1 061	13.0	954	11.6	-2.9%
Belgium	1 321	12.8	1 294	12.5	1 117	10.8	1 198	11.5	1 144	11.0	-3.4%
Denmark *	511	9.5	419	7.8	393	7.3	385	7.1	424	7.8	-4.3%
Finland	494	9.5	473	9.1	412	7.9	331	6.3	361	6.9	-7.2%
France	6 465	10.6	6 322	10.3	6 098	9.9	5 514	8.9	5 374	8.6	-4.9%
Germany	7 539 †	9.1	7 701	9.3	7 166	8.7	6 542	7.9	6 045	7.3	-5.4%
Greece	617	5.6	582	5.3	620	5.6	774	7.0	767	6.9	5.9%
Ireland	406	10.5	408	10.4	407	10.2	432	10.6	461	11.1	1.5%
Italy	4 505	7.8	4 212	7.3	4 518	7.8	4 220	7.3	4 137	7.1	-2.1%
Luxembourg	32	7.3	32	7.2	54	11.9	31	6.8	37	8.0	9.9%
Netherlands	1 436	9.0	1 401	8.7	1 321	8.2	1 344	8.3	1 157	7.1	-5.5%
Portugal	4 399	42.8	4 501	43.6	4 148	39.9	3 854	36.9	3 536	33.7	-5.7%
Spain	7 453 ‡	18.1	7 626 ‡	18.3	7 467 ‡	17.7	7 766	18.2	7 820	18.2	0.1%
Sweden	428	4.8	407	4.6	408	4.5	461	5.1	569	6.3	7.5%
United Kingdom	7 017	11.9	7 263	12.3	7 220	12.1	7 609	12.8	8 465	14.2	4.5%
Subtotal EU-15	**43 698**	**11.5**	**43 717**	**11.4**	**42 329**	**11.0**	**41 522**	**10.8**	**41 251**	**10.7**	**-1.8%**
New EU countries (since 2004)											
Bulgaria	3 862	48.6	3 335	42.3	3 263	41.7	3 232	41.5	3 302	42.7	-3.0%
Cyprus	40	5.0	20	2.5	35	4.3	30	3.6	37	4.4	7.2%
Czech Republic	1 350	13.2	1 200	11.7	1 162	11.4	1 057	10.3	1 007	9.9	-6.9%
Estonia	812	59.8	713	52.9	623	46.5	594	44.5	519	39.0	-10.1%
Hungary	3 150	30.9	2 838	27.9	2 582	25.4	2 340	23.1	2 024	20.0	-10.2%
Latvia	2 082	88.3	1 855	79.2	1 726	74.1	1 610	69.4	1 443	62.5	-8.2%
Lithuania	2 989	85.9	2 844	82.0	2 821	81.7	2 514	73.0	2 574	75.0	-3.2%
Malta	16	4.1	24	6.1	7	1.8	19	4.8	23	5.7	42.2%
Poland	10 672	27.6	10 475	27.1	10 124	26.2	9 493	24.6	9 280	24.1	-3.4%
Romania	30 440	138.2	33 595	153.1	31 039	142.0	31 034	142.4	29 347	135.2	-0.3%
Slovakia	1 076	19.9	1 053	19.5	983	18.2	705	13.1	760	14.1	-7.3%
Slovenia	371	18.9	350	17.8	293	14.9	263	13.4	278	14.1	-6.6%
Subtotal New EU countries	**56 860**	**54.2**	**58 302**	**55.7**	**54 658**	**52.4**	**52 891**	**50.8**	**50 594**	**48.7**	**-2.6%**
Subtotal all EU ('EU-27')	**100 558**	**20.7**	**102 019**	**20.9**	**96 987**	**19.9**	**94 413**	**19.3**	**91 845**	**18.7**	**-2.5%**
West, non-EU											
Andorra	5	7.6	5	7.5	11	16.5	7	10.5	10	14.9	31.1%
Iceland	13	4.6	8	2.8	5	1.7	12	4.1	11	3.7	12.9%
Israel	564	9.1	511	8.1	529	8.2	519	7.9	406	6.0	-9.2%
Monaco	0	0.0	0	0.0	1	2.9	-	-	-	-	-
Norway	288	6.4	251	5.5	337	7.4	302	6.6	290	6.3	1.3%
San Marino	0	0.0	1	3.6	1	3.6	0	0.0	-	-	-
Switzerland	611	8.5	658	9.1	623	8.6	593	8.2	567	7.8	-1.9%
Total EU & West	**102 039**	**20.2**	**103 453**	**20.5**	**98 494**	**19.4**	**95 846**	**18.8**	**93 129**	**18.3**	**-2.5%**
Balkans											
Albania	572	18.7	612	19.9	561	18.1	581	18.7	540	17.3	-1.7%
Bosnia & Herzegovina	2 551	65.4	2 551	65.1	1 780 §	-	2 382	60.9	2 160	55.3	-5.4%
Croatia	1 505	33.5	1 470	32.6	1 493	33.0	1 297	28.6	1 144	25.1	-6.7%
Macedonia, F.Y.R.	697	34.6	730	36.1	697	34.4	680	33.5	658	32.3	-1.6%
Montenegro	-	-	-	-	-	-	-	-	170	27.3	-
Serbia ||	2 888 ¶	34.7	3 033 ¶	37.4	2 949 ¶	36.2	2 824 ¶	34.7	2 366	31.8	-2.0%
Turkey	18 890	27.3	19 028	27.1	18 590	26.1	19 799	27.4	20 535	28.1	0.8%
Total Balkans	**27 103**	**29.8**	**27 424**	**29.8**	**26 070**	**28.0**	**27 563**	**29.3**	**27 573**	**29.1**	**-0.5%**
East											
Armenia	1 401	45.7	1 455	47.7	1 570	51.7	1 701	56.2	2 322	77.0	14.6%
Azerbaijan	4 923	60.0	5 348	64.8	3 931	47.4	6 501	77.8	7 920	94.2	16.6%
Belarus	5 505 **	55.2	5 139	51.8	5 963	60.4	6 490	66.2	6 357	65.2	4.6%
Georgia ††	5 876	125.9	6 345	137.5	5 993	131.3	5 967	132.1	6 448	144.1	3.6%
Kazakhstan	31 254	209.2	32 936	221.3	32 169	216.5	32 131	216.5	31 187	210.4	0.2%
Kyrgyzstan	6 901	137.5	6 794	133.6	7 025	136.6	6 641	127.6	6 765	128.5	-1.6%
Moldova, Republic of	3 820	89.7	4 149	97.7	5 027	118.8	6 008	142.4	6 278	149.3	13.8%
Russian Federation	138 432	94.8	134 812	92.8	152 244	105.3	152 438	105.9	156 047	109.0	3.7%
Tajikistan	3 508	56.3	4 052	64.4	4 883	76.8	5 122	79.7	7 142	109.8	18.8%
Turkmenistan	4 922	107.8	4 635	100.1	4 759	101.3	4 172	87.5	3 291	68.1	-10.4%
Ukraine	36 784	75.7	40 175	83.6	40 659	85.6	38 403	81.7	43 367	93.3	5.6%
Uzbekistan	18 106	72.2	27 009	106.1	26 172	101.3	25 714	98.1	28 891	108.6	12.5%
Total East	**261 432**	**93.2**	**272 849**	**97.5**	**290 395**	**104.1**	**291 288**	**104.7**	**306 015**	**110.2**	**4.3%**
Total WHO European Region	**390 574**	**44.6**	**403 726**	**46.0**	**414 959**	**47.2**	**414 697**	**47.1**	**426 717**	**48.4**	**2.1%**

* Excluding Greenland (99 cases in 2005, see Technical Note)
† Incomplete notification following change in notification system
‡ New and recurrent respiratory and meningeal cases
§ Excluding Republika Srpska
|| Excluding Kosovo (1 102 cases in 2005, see Technical Note)
¶ Including cases from Montenegro
** New cases only
†† Excluding cases from Abkhazia and Southern Ossetia

Table 2. Tuberculosis cases by geographic origin and sex ratio, WHO European Region, 2005

Geographic area	Criterion	Origin: National			Foreign			Unknown			Total	
Country		N	(%)	Sex ratio (M:F)*	N	(%)	Sex ratio (M:F)*	N	(%)	Sex ratio (M:F)*	N	Sex ratio (M:F)*
EU & West												
Austria	**citizenship**	534	(56)	1.71	420	(44)	2.39	0	(0)	-	954	1.97
Belgium	**citizenship**	563	(49)	1.86	581	(51)	1.42	0	(0)	-	1 144	1.62
Bulgaria	**citizenship**	3 302	(100)	1.99	0	(0)	-	0	(0)	-	3 302	1.99
Cyprus	birthplace	12	(32)	1.00	25	(68)	3.17	0	(0)	-	37	2.08
Czech Republic	birthplace	877	(87)	1.80	130	(13)	1.50	0	(0)	-	1 007	1.76
Denmark	birthplace †	166	(39)	2.13	258	(61)	1.22	0	(0)	-	424	1.51
Estonia	birthplace	435	(84)	1.88	84	(16)	2.23	0	(0)	-	519	1.93
Finland	birthplace	308	(85)	1.39	36	(10)	0.71	17	(5)	2.40	361	1.33
France	birthplace	2 607	(49)	1.43	2 433	(45)	1.58	334	(6)	1.32	5 374	1.49
Germany	birthplace	3 177	(53)	1.68	2 622	(43)	1.34	246	(4)	2.01	6 045	1.53
Greece	birthplace	491	(64)	1.83	219	(29)	1.58	57	(7)	1.85	767	1.76
Hungary	birthplace	1 911	(94)	2.18	62	(3)	2.10	51	(3)	2.64	2 024	2.19
Ireland	birthplace	288	(62)	1.37	142	(31)	1.65	31	(7)	2.33	461	1.50
Italy	birthplace	2 285	(55)	1.47	1 809	(44)	1.61	43	(1)	0.71	4 137	1.52
Latvia	birthplace	1 333	(92)	2.40	84	(6)	1.47	26	(2)	1.89	1 443	2.32
Lithuania	birthplace	2 486	(97)	2.21	88	(3)	1.84	0	(0)	-	2 574	2.19
Luxembourg	birthplace	9	(24)	2.00	25	(68)	1.50	3	(8)	N/M	37	1.50
Malta	**citizenship**	6	(26)	5.00	17	(74)	16.00	0	(0)	-	23	10.50
Netherlands	birthplace	374	(32)	1.49	764	(66)	1.43	19	(2)	0.90	1 157	1.44
Poland	**citizenship**	9 263	(100)	1.90	17	(0)	1.83	0	(0)	-	9 280	1.90
Portugal	birthplace	3 097	(88)	2.11	413	(12)	2.01	26	(1)	1.60	3 536	2.09
Romania	birthplace	29 345	(100)	2.29	2	(0)	N/F	0	(0)	-	29 347	2.29
Slovakia	birthplace	733	(96)	1.52	27	(4)	8.00	0	(0)	-	760	1.59
Slovenia	birthplace	230	(83)	1.28	48	(17)	2.20	0	(0)	-	278	1.40
Spain	birthplace	5 024	(64)	1.89	1 448	(19)	1.87	1 348	(17)	2.04	7 820	1.91
Sweden	birthplace	154	(27)	1.20	415	(73)	1.09	0	(0)	-	569	1.12
United Kingdom	birthplace	2 184	(26)	1.56	5 392	(64)	1.13	889	(11)	1.34	8 465	1.25
Subtotal EU		**71 194**	**(78)**	**2.00**	**17 561**	**(19)**	**1.41**	**3 090**	**(3)**	**1.68**	**91 845**	**1.86**
Andorra	birthplace	2	(20)	N/M	8	(80)	0.60	0	(0)	-	10	0.43
Iceland	birthplace	4	(36)	3.00	7	(64)	2.50	0	(0)	-	11	2.67
Israel	birthplace	74	(18)	1.18	332	(82)	1.27	0	(0)	-	406	1.26
Monaco	-	-	-	-	-	-	-	-	-	-	-	-
Norway	birthplace	64	(22)	1.67	226	(78)	0.97	0	(0)	-	290	1.09
San Marino	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	birthplace	154	(27)	1.52	341	(60)	1.12	72	(13)	1.18	567	1.22
Total EU & West		**71 492**	**(77)**	**2.00**	**18 475**	**(20)**	**1.39**	**3 162**	**(3)**	**1.67**	**93 129**	**1.84**
Balkans												
Albania	**citizenship**	536	(99)	2.01	4	(1)	N/F	0	(0)	-	540	2.03
Bosnia & Herzegovina	**citizenship**	2 160	(100)	1.17	0	(0)	-	0	(0)	-	2 160	1.17
Croatia	birthplace	525	(46)	1.95	101	(9)	1.81	518	(45)	1.50	1 144	1.72
Macedonia, F.Y.R.	**citizenship**	658	(100)	1.46	0	(0)	-	0	(0)	-	658	1.46
Montenegro	**citizenship**	168	(99)	1.58	2	(1)	1.00	0	(0)	-	170	1.58
Serbia	**citizenship**	2 326	(98)	1.63	39	(2)	1.17	1	(0)	N/M	2 366	1.62
Turkey	**citizenship**	20 472	(100)	1.87	63	(0)	0.80	0	(0)	-	20 535	1.86
Total Centre		**26 845**	**(97)**	**1.77**	**209**	**(1)**	**1.32**	**519**	**(2)**	**1.50**	**27 573**	**1.76**
East												
Armenia	**citizenship**	2 322	(100)	4.03	0	(0)	-	0	(0)	-	2 322	4.03
Azerbaijan	**citizenship**	7 920	(100)	2.03	0	(0) ‡	-	0	(0)	-	7 920	2.03
Belarus §	**citizenship**	6 357	(100)	2.55	0	(0) ‡	-	0	(0)	-	6 357	2.55
Georgia	**citizenship**	6 448	(100)	2.57	0	(0) ‡	-	0	(0)	-	6 448	2.57
Kazakhstan	**citizenship**	31 187	(100)	1.36	0	(0) ‡	-	0	(0)	-	31 187	1.36
Kyrgyzstan §	**citizenship**	6 765	(100)	1.35	0	(0) ‡	-	0	(0)	-	6 765	1.35
Moldova, Republic of	**citizenship**	6 239	(99)	3.10	39	(1)	3.88	0	(0)	-	6 278	3.10
Russian Federation §	**citizenship**	133 007	(99)	-	896	(1)	3.07	0	(0)	-	133 903	-
Tajikistan §	**citizenship**	7 142	(100)	1.29	0	(0) ‡	-	0	(0)	-	7 142	1.29
Turkmenistan	birthplace	3 291	(100)	1.88	0	(0) ‡	-	0	(0)	-	3 291	1.88
Ukraine	-	43 367	(100)	-	0	(0) ‡	-	0	(0)	-	43 367	-
Uzbekistan	**citizenship**	28 891	(100)	1.29	0	(0) ‡	-	0	(0)	-	28 891	1.29
Total East		**282 936**	**(100)**	**1.59**	**935**	**(0)**	**3.10**	**0**	**(0)**	**-**	**283 871**	**1.60**
Total WHO European Region		**381 273**	**(94)**	**1.75**	**19 619**	**(5)**	**1.44**	**3 681**	**(1)**	**1.64**	**404 573**	**1.71**

* Ratio calculated on cases with available information on sex. N/F = no females in sub-group; N/M = no males in sub-group.

† By birthplace of parents for Danish-born cases under 26 years of age

‡ Cases of foreign origin not included in reporting system

§ Sex ratio calculated on cases not previously treated for TB (includes also previous TB history unknown in Belarus and relapses in Russian Federation)

Table 3. Tuberculosis cases of national origin, by age group, WHO European Region, 2005

NATIONAL ORIGIN (age-groups in years)

Geographic area	0-4		5-14		15-44		45-64		>64		Unknown		Total
Country	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
EU & West													
Austria	12	(2)	6	(1)	148	(28)	189	(35)	176	(33)	3	(1)	534
Belgium	19	(3)	11	(2)	168	(30)	150	(27)	215	(38)	0	(0)	563
Bulgaria	62	(2)	118	(4)	1 399	(42)	1 080	(33)	643	(19)	0	(0)	3 302
Cyprus	3	(25)	0	(0)	2	(17)	1	(8)	6	(50)	0	(0)	12
Czech Republic	2	(0)	4	(0)	191	(22)	312	(36)	368	(42)	0	(0)	877
Denmark *	0	(0)	7	(4)	66	(40)	68	(41)	25	(15)	0	(0)	166
Estonia	0	(0)	1	(0)	221	(51)	169	(39)	44	(10)	0	(0)	435
Finland	0	(0)	1	(0)	27	(9)	91	(30)	189	(61)	0	(0)	308
France	97	(4)	82	(3)	896	(34)	628	(24)	904	(35)	0	(0)	2 607
Germany	98	(3)	55	(2)	791	(25)	977	(31)	1 256	(40)	0	(0)	3 177
Greece	8	(2)	29	(6)	115	(23)	131	(27)	203	(41)	5	(1)	491
Hungary	3	(0)	2	(0)	477	(25)	936	(49)	493	(26)	0	(0)	1 911
Ireland	9	(3)	13	(5)	103	(36)	81	(28)	82	(28)	0	(0)	288
Italy	58	(3)	53	(2)	546	(24)	557	(24)	997	(44)	74	(3)	2 285
Latvia	31	(2)	36	(3)	700	(53)	445	(33)	121	(9)	0	(0)	1 333
Lithuania	18	(1)	71	(3)	1 109	(45)	936	(38)	351	(14)	1	(0)	2 486
Luxembourg	1	(11)	0	(0)	1	(11)	4	(44)	3	(33)	0	(0)	9
Malta	0	(0)	0	(0)	0	(0)	1	(17)	5	(83)	0	(0)	6
Netherlands	15	(4)	16	(4)	117	(31)	99	(26)	127	(34)	0	(0)	374
Poland	26	(0)	73	(1)	2 863	(31)	3 765	(41)	2 536	(27)	0	(0)	9 263
Portugal	42	(1)	52	(2)	1 697	(55)	769	(25)	523	(17)	14	(0)	3 097
Romania	383	(1)	727	(2)	15 269	(52)	9 784	(33)	3 172	(11)	10	(0)	29 345
Slovakia	7	(1)	15	(2)	185	(25)	258	(35)	268	(37)	0	(0)	733
Slovenia	2	(1)	5	(2)	81	(35)	55	(24)	87	(38)	0	(0)	230
Spain	195	(4)	131	(3)	2 467	(49)	1 086	(22)	1 113	(22)	32	(1)	5 024
Sweden	22	(14)	7	(5)	19	(12)	22	(14)	84	(55)	0	(0)	154
United Kingdom	123	(6)	145	(7)	886	(41)	473	(22)	557	(26)	0	(0)	2 184
Subtotal EU	**1 236**	**(2)**	**1 660**	**(2)**	**30 544**	**(43)**	**23 067**	**(32)**	**14 548**	**(20)**	**139**	**(0)**	**71 194**
Andorra	0	(0)	0	(0)	2	(100)	0	(0)	0	(0)	0	(0)	2
Iceland	0	(0)	0	(0)	1	(25)	1	(25)	2	(50)	0	(0)	4
Israel	8	(11)	7	(9)	27	(36)	15	(20)	17	(23)	0	(0)	74
Monaco	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	3	(5)	2	(3)	9	(14)	16	(25)	34	(53)	0	(0)	64
San Marino	-	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	8	(5)	4	(3)	32	(21)	35	(23)	75	(49)	0	(0)	154
Total EU & West	**1 255**	**(2)**	**1 673**	**(2)**	**30 615**	**(43)**	**23 134**	**(32)**	**14 676**	**(21)**	**139**	**(0)**	**71 492**
Balkans													
Albania	6	(1)	26	(5)	196	(37)	175	(33)	133	(25)	0	(0)	536
Bosnia & Herzegovina	5	(0)	31	(1)	729	(34)	600	(28)	793	(37)	2	(0)	2 160
Croatia	1	(0)	14	(3)	171	(33)	181	(34)	158	(30)	0	(0)	525
Macedonia, F.Y.R.	25	(4)	65	(10)	299	(45)	163	(25)	104	(16)	2	(0)	658
Montenegro	0	(0)	0	(0)	69	(41)	55	(33)	44	(26)	0	(0)	168
Serbia	5	(0)	14	(1)	760	(33)	796	(34)	750	(32)	1	(0)	2 326
Turkey	293	(1)	942	(5)	12 564	(61)	4 716	(23)	1 957	(10)	0	(0)	20 472
Total Balkans	**335**	**(1)**	**1 092**	**(4)**	**14 788**	**(55)**	**6 686**	**(25)**	**3 939**	**(15)**	**5**	**(0)**	**26 845**
East													
Armenia	31	(1)	76	(3)	1 602	(69)	477	(21)	136	(6)	0	(0)	2 322
Azerbaijan	97	(1)	318	(4)	4 982	(63)	2 018	(25)	505	(6)	0	(0)	7 920
Belarus †	16	(0)	49	(1)	2 877	(54)	1 779	(34)	587	(11)	0	(0)	5 308
Georgia	69	(1)	335	(5)	3 727	(58)	1 634	(25)	678	(11)	5	(0)	6 448
Kazakhstan	450	(1)	1 335	(4)	21 776	(70)	6 230	(20)	1 396	(4)	0	(0)	31 187
Kyrgyzstan †	133	(2)	649	(11)	3 718	(63)	956	(16)	462	(8)	0	(0)	5 918
Moldova, Republic of	-	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation ‡	1 110	(1)	2 347	(2)	80 074	(60)	40 171	(30)	9 305	(7)	0	(0)	133 007
Tajikistan †	79	(2)	336	(7)	3 638	(71)	773	(15)	269	(5)	0	(0)	5 095
Turkmenistan	16	(0)	157	(5)	2 368	(72)	641	(19)	109	(3)	0	(0)	3 291
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	285	(1)	2 116	(7)	16 441	(57)	7 635	(26)	2 414	(8)	0	(0)	28 891
Total East	**2 286**	**(1)**	**7 718**	**(3)**	**141 203**	**(62)**	**62 314**	**(27)**	**15 861**	**(7)**	**5**	**(0)**	**229 387**
Total WHO European Region	**3 876**	**(1)**	**10 483**	**(3)**	**186 606**	**(57)**	**92 134**	**(28)**	**34 476**	**(11)**	**149**	**(0)**	**327 724**

* Excluding native cases < 26 years old whose parents were born outside Denmark

† Restricted to previously untreated cases (including also cases with unknown treatment history in Belarus)

‡ Restricted to previously untreated cases and relapses

Table 4. Tuberculosis cases of foreign origin, by age group, WHO European Region, 2005

FOREIGN ORIGIN (age-groups in years)

Geographic area	0-4		5-14		15-44		45-64		>64		Unknown		Total
Country	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
EU & West													
Austria	10	(2)	12	(3)	292	(70)	82	(20)	24	(6)	0	(0)	420
Belgium	23	(4)	20	(3)	401	(69)	79	(14)	58	(10)	0	(0)	581
Bulgaria	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0
Cyprus	0	(0)	0	(0)	23	(92)	2	(8)	0	(0)	0	(0)	25
Czech Republic	0	(0)	0	(0)	104	(80)	18	(14)	8	(6)	0	(0)	130
Denmark *	11	(4)	20	(8)	168	(65)	45	(17)	14	(5)	0	(0)	258
Estonia	0	(0)	0	(0)	17	(20)	43	(51)	24	(29)	0	(0)	84
Finland	0	(0)	4	(11)	28	(78)	3	(8)	1	(3)	0	(0)	36
France	26	(1)	72	(3)	1 479	(61)	586	(24)	270	(11)	0	(0)	2 433
Germany	20	(1)	46	(2)	1 581	(60)	595	(23)	380	(14)	0	(0)	2 622
Greece	6	(3)	16	(7)	163	(74)	21	(10)	6	(3)	7	(3)	219
Hungary	0	(0)	0	(0)	47	(76)	11	(18)	4	(6)	0	(0)	62
Ireland	3	(2)	2	(1)	119	(84)	13	(9)	4	(3)	1	(1)	142
Italy	14	(1)	35	(2)	1 453	(80)	236	(13)	33	(2)	38	(2)	1 809
Latvia	0	(0)	0	(0)	29	(35)	42	(50)	13	(15)	0	(0)	84
Lithuania	0	(0)	1	(1)	32	(36)	31	(35)	24	(27)	0	(0)	88
Luxembourg	0	(0)	0	(0)	16	(64)	8	(32)	1	(4)	0	(0)	25
Malta	0	(0)	0	(0)	16	(94)	1	(6)	0	(0)	0	(0)	17
Netherlands	3	(0)	15	(2)	525	(69)	152	(20)	67	(9)	2	(0)	764
Poland	0	(0)	0	(0)	16	(94)	0	(0)	1	(6)	0	(0)	17
Portugal	2	(0)	5	(1)	310	(75)	88	(21)	7	(2)	1	(0)	413
Romania	0	(0)	0	(0)	2	(100)	0	(0)	0	(0)	0	(0)	2
Slovakia	0	(0)	0	(0)	17	(63)	4	(15)	6	(22)	0	(0)	27
Slovenia	0	(0)	0	(0)	19	(40)	22	(46)	7	(15)	0	(0)	48
Spain	36	(2)	39	(3)	1 166	(81)	161	(11)	28	(2)	18	(1)	1 448
Sweden	1	(0)	8	(2)	293	(71)	72	(17)	41	(10)	0	(0)	415
United Kingdom	36	(1)	118	(2)	3 753	(70)	920	(17)	563	(10)	2	(0)	5 392
Subtotal EU	**191**	**(1)**	**413**	**(2)**	**12 069**	**(69)**	**3 235**	**(18)**	**1 584**	**(9)**	**69**	**(0)**	**17 561**
Andorra	0	(0)	0	(0)	5	(63)	3	(38)	0	(0)	0	(0)	8
Iceland	0	(0)	0	(0)	6	(86)	0	(0)	1	(14)	0	(0)	7
Israel	9	(3)	16	(5)	123	(37)	82	(25)	102	(31)	0	(0)	332
Monaco	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	2	(1)	11	(5)	178	(79)	26	(12)	9	(4)	0	(0)	226
San Marino	-	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	2	(1)	7	(2)	246	(72)	54	(16)	32	(9)	0	(0)	341
Total EU & West	**204**	**(1)**	**447**	**(2)**	**12 627**	**(68)**	**3 400**	**(18)**	**1 728**	**(9)**	**69**	**(0)**	**18 475**
Balkans													
Albania	0	(0)	1	(25)	1	(25)	2	(50)	0	(0)	0	(0)	4
Bosnia & Herzegovina	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0
Croatia	0	(0)	3	(3)	36	(36)	25	(25)	37	(37)	0	(0)	101
Macedonia, F.Y.R.	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0
Montenegro	0	(0)	0	(0)	0	(0)	1	(50)	1	(50)	0	(0)	2
Serbia	0	(0)	0	(0)	17	(44)	10	(26)	12	(31)	0	(0)	39
Turkey	0	(0)	0	(0)	60	(95)	1	(2)	2	(3)	0	(0)	63
Total Balkans	**0**	**(0)**	**4**	**(2)**	**114**	**(55)**	**39**	**(19)**	**52**	**(25)**	**0**	**(0)**	**209**
East													
Armenia	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	-	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-	-	-
Moldova, Republic of	-	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation †	32	(4)	56	(6)	660	(74)	135	(15)	13	(1)	0	(0)	896
Tajikistan	-	-	-	-	-	-	-	-	-	-	-	-	-
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-	-
Total East	**32**	**(4)**	**56**	**(6)**	**660**	**(74)**	**135**	**(15)**	**13**	**(1)**	**0**	**(0)**	**896**
Total WHO European Region	**236**	**(1)**	**507**	**(3)**	**13 401**	**(68)**	**3 574**	**(18)**	**1 793**	**(9)**	**69**	**(0)**	**19 580**

* Including native cases < 26 years old whose parents were born outside Denmark

† Restricted to previously untreated cases and relapses

Table 5. Tuberculosis cases of foreign origin by area of origin, WHO European Region*, 2005

Geographic area		Area of origin												
		WHO European Region												
		EU & West		Balkans		East		Rest of Asia		Africa		Other / unknown †		Total
Country	Criterion	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
EU & West														
Austria	**citizenship**	30	(7)	154	(37)	93	(22)	75	(18)	59	(14)	9	(2)	420
Belgium	**citizenship**	72	(12)	51	(9)	30	(5)	91	(16)	324	(56)	13	(2)	581
Cyprus	birthplace	5	(20)	0	(0)	3	(12)	13	(52)	4	(16)	0	(0)	25
Czech Republic	birthplace	25	(19)	1	(1)	54	(42)	45	(35)	5	(4)	0	(0)	130
Denmark	birthplace ‡	5	(2)	8	(3)	1	(0)	89	(34)	126	(49)	29	(11)	258
Estonia	birthplace	6	(7)	0	(0)	76	(90)	0	(0)	0	(0)	2	(2)	84
Finland	birthplace	1	(3)	0	(0)	1	(3)	16	(44)	18	(50)	0	(0)	36
Germany	birthplace	322	(12)	628	(24)	623	(24)	602	(23)	410	(16)	37	(1)	2 622
Greece	birthplace	31	(14)	50	(23)	43	(20)	49	(22)	22	(10)	24	(11)	219
Hungary	birthplace	41	(66)	3	(5)	7	(11)	5	(8)	5	(8)	1	(2)	62
Ireland	birthplace	26	(18)	0	(0)	3	(2)	60	(42)	30	(21)	23	(16)	142
Italy	birthplace	410	(23)	51	(3)	69	(4)	386	(21)	647	(36)	246	(14)	1 809
Latvia	birthplace	9	(11)	0	(0)	75	(89)	0	(0)	0	(0)	0	(0)	84
Lithuania	birthplace	5	(6)	0	(0)	80	(91)	2	(2)	0	(0)	1	(1)	88
Luxembourg	birthplace	16	(64)	2	(8)	0	(0)	0	(0)	6	(24)	1	(4)	25
Malta	**citizenship**	0	(0)	1	(6)	0	(0)	1	(6)	15	(88)	0	(0)	17
Netherlands	birthplace	30	(4)	59	(8)	17	(2)	206	(27)	371	(49)	81	(11)	764
Portugal	birthplace	42	(10)	0	(0)	24	(6)	22	(5)	286	(69)	39	(9)	413
Romania	birthplace	0	(0)	0	(0)	1	(50)	1	(50)	0	(0)	0	(0)	2
Slovakia	birthplace	6	(22)	1	(4)	8	(30)	10	(37)	1	(4)	1	(4)	27
Slovenia	birthplace	1	(2)	46	(96)	1	(2)	0	(0)	0	(0)	0	(0)	48
Sweden	birthplace	30	(7)	51	(12)	8	(2)	132	(32)	177	(43)	17	(4)	415
United Kingdom	birthplace	179	(3)	53	(1)	15	(0)	2 779	(52)	2 004	(37)	362	(7)	5 392
Subtotal EU		**1 292**	**(9)**	**1 159**	**(8)**	**1 232**	**(9)**	**4 584**	**(34)**	**4 510**	**(33)**	**886**	**(6)**	**13 663**
Andorra	birthplace	7	(88)	0	(0)	0	(0)	0	(0)	1	(13)	0	(0)	8
Iceland	birthplace	0	(0)	0	(0)	0	(0)	6	(86)	1	(14)	0	(0)	7
Switzerland	birthplace	57	(17)	74	(22)	6	(2)	86	(25)	101	(30)	17	(5)	341
Total EU & West		**1 356**	**(10)**	**1 233**	**(9)**	**1 238**	**(9)**	**4 676**	**(33)**	**4 613**	**(33)**	**903**	**(6)**	**14 019**
Balkans														
Albania	**citizenship**	1	(25)	3	(75)	0	(0)	0	(0)	0	(0)	0	(0)	4
Bosnia & Herzegovina	**citizenship**	0	-	0	-	0	-	0	-	0	-	0	-	0
Croatia	birthplace	5	(5)	96	(95)	0	(0)	0	(0)	0	(0)	0	(0)	101
Macedonia, F.Y.R.	**citizenship**	0	-	0	-	0	-	0	-	0	-	0	-	0
Serbia	**citizenship**	2	(5)	36	(92)	0	(0)	0	(0)	0	(0)	1	(3)	39
Turkey	**citizenship**	9	(14)	2	(3)	35	(56)	4	(6)	13	(21)	0	(0)	63
Total Balkans		**17**	**(8)**	**137**	**(66)**	**35**	**(17)**	**4**	**(2)**	**13**	**(6)**	**1**	**(0)**	**207**

* Countries with case-based data on country of origin

† 565 cases from America and Oceania

‡ By birthplace of parents for Danish-born cases under 26 years of age

Table 6. Tuberculosis cases by geographic origin, EU & West*, 2000-2005

Country	Criterion	2000	2001	2002	2003	2004	2005
A. National origin							
Austria	**citizenship**	890	804	770	640	624	534
Belgium	**citizenship**	758	714	637	512	564	563
Bulgaria	**citizenship**	-	-	3 335	3 263	3 232	3 302
Cyprus	birthplace	-	15	13	13	7	12
Czech Republic	birthplace	1 299	1 157	1 036	1 036	908	877
Denmark	birthplace †	198	174	154	158	148	166
Estonia	birthplace	608	630	573	493	454	435
Finland	birthplace	490	427	422	359	287	308
France	birthplace	3 198	2 870	2 657	2 815	2 668	2 607
Germany	birthplace	-	3 781	4 140	3 851	3 421	3 177
Hungary	birthplace	3 521	3 077	2 781	2 509	2 268	1 911
Ireland	birthplace	354	328	270	300	290	288
Italy	birthplace	3 511	3 063	2 890	2 846	2 520	2 285
Latvia	birthplace	1 893	1 931	1 713	1 605	1 465	1 333
Lithuania	birthplace	2 821	2 815	2 711	2 693	2 427	2 486
Malta	**citizenship**	13	13	15	3	7	6
Netherlands	birthplace ‡	368	383	348	351	368	316
Portugal	birthplace	4 047	3 903	3 928	3 641	3 392	3 097
Romania	birthplace	-	-	33 588	31 039	31 032	29 345
Slovakia	birthplace	1 103	1 063	1 041	967	690	733
Slovenia	birthplace	286	287	273	250	209	230
Sweden	birthplace	151	142	114	103	115	154
United Kingdom §	birthplace	1 957	2 106	1 999	2 011	2 157	2 184
Subtotal EU				**65 408**	**61 458**	**59 253**	**56 349**
Andorra	birthplace	-	-	3	1	0	2
Iceland	birthplace	8	6	5	2	4	4
Israel	birthplace	91	87	79	94	99	74
Norway	birthplace	70	82	60	70	63	64
Switzerland	birthplace	228	192	189	167	153	154
Total EU & West				**65 744**	**61 792**	**59 572**	**56 647**
B. Foreign origin							
Austria	**citizenship**	335	271	306	340	437	420
Belgium	**citizenship**	508	604	657	605	634	581
Bulgaria	**citizenship**	-	-	0	0	0	0
Cyprus	birthplace	-	25	7	22	23	25
Czech Republic	birthplace	143	193	164	126	149	130
Denmark	birthplace †	350	334	265	235	237	258
Estonia	birthplace	183	182	140	130	138	84
Finland	birthplace	47	58	43	38	29	36
France	birthplace	2 193	2 305	2 564	2 572	2 488	2 433
Germany	birthplace	-	2 741	2 991	3 014	2 884	2 622
Hungary	birthplace	56	57	47	51	44	62
Ireland	birthplace	49	65	123	89	129	142
Italy	birthplace	1 201	1 391	1 293	1 459	1 664	1 809
Latvia	birthplace	147	122	115	93	119	84
Lithuania	birthplace	160	174	133	128	87	88
Malta	**citizenship**	**5**	**3**	**9**	**4**	**12**	**17**
Netherlands	birthplace ‡	1 074	1 109	1 069	966	955	830
Portugal	birthplace	434	491	567	503	455	413
Romania	birthplace	-	-	7	0	2	2
Slovakia	birthplace	8	13	12	16	15	27
Slovenia	birthplace	94	84	77	43	54	48
Sweden	birthplace	305	286	293	305	343	415
United Kingdom §	birthplace	3 327	3 551	4 084	4 497	4 783	5 392
Subtotal EU				**14 966**	**15 236**	**15 681**	**15 918**
Andorra	birthplace	-	-	2	10	6	8
Iceland	birthplace	5	7	3	3	8	7
Israel	birthplace	500	477	432	435	420	332
Norway	birthplace	167	206	191	267	239	226
Switzerland	birthplace	341	338	399	373	338	341
Total EU & West				**15 993**	**16 324**	**16 692**	**16 832**

* Countries with at least 80% of cases with information on origin in all years and data for 4 consecutive years or more using the same criterion of origin

† By birthplace of parents for Danish-born cases under 26 years of age

‡ If both case and mother (or father since 2005) born in the Netherlands considered native, otherwise foreign; data differ from elsewhere in this report

§ 2000-2002 excluding Scotland

Table 7. Tuberculosis cases by site of disease, WHO European Region, 2005

Geographic area	Pulmonary						Extrapulmonary only		No site reported		Total
	Pulmonary only		Pulmonary + extrapulmonary		Total Pulmonary						
Country	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
EU & West											
Austria	692	(73)	84	(9)	776	**(81)**	178	(19)	0	(0)	954
Belgium	723	(63)	112	(10)	835	**(73)**	309	(27)	0	(0)	1 144
Bulgaria *†	-	-	-	-	2 926	**(89)**	376	(11)	0	(0)	3 302
Cyprus	23	(62)	1	(3)	24	**(65)**	13	(35)	0	(0)	37
Czech Republic	778	(77)	22	(2)	800	**(79)**	207	(21)	0	(0)	1 007
Denmark	287	(68)	8	(2)	295	**(70)**	129	(30)	0	(0)	424
Estonia	456	(88)	12	(2)	468	**(90)**	51	(10)	0	(0)	519
Finland †	-	-	-	-	263	**(73)**	98	(27)	0	(0)	361
France	3 150	(59)	650	(12)	3 800	**(71)**	1 458	(27)	116	(2)	5 374
Germany	4 119	(68)	490	(8)	4 609	**(76)**	1 275	(21)	161	(3)	6 045
Greece	519	(68)	65	(8)	584	**(76)**	116	(15)	67	(9)	767
Hungary	1 878	(93)	17	(1)	1 895	**(94)**	129	(6)	0	(0)	2 024
Ireland	288	(62)	31	(7)	319	**(69)**	106	(23)	36	(8)	461
Italy	2 974	(72)	28	(1)	3 002	**(73)**	1 119	(27)	16	(0)	4 137
Latvia	1 233	(85)	62	(4)	1 295	**(90)**	148	(10)	0	(0)	1 443
Lithuania	2 211	(86)	0	(0)	2 211	**(86)**	363	(14)	0	(0)	2 574
Luxembourg	34	(92)	0	(0)	34	**(92)**	3	(8)	0	(0)	37
Malta	14	(61)	2	(9)	16	**(70)**	6	(26)	1	(4)	23
Netherlands	623	(54)	133	(11)	756	**(65)**	401	(35)	0	(0)	1 157
Poland †	-	-	-	-	8 459	**(91)**	821	(9)	0	(0)	9 280
Portugal	2 331	(66)	233	(7)	2 564	**(73)**	967	(27)	5	(0)	3 536
Romania	23 436	(80)	2 138	(7)	25 574	**(87)**	3 771	(13)	2	(0)	29 347
Slovakia	581	(76)	38	(5)	619	**(81)**	141	(19)	0	(0)	760
Slovenia	210	(76)	36	(13)	246	**(88)**	32	(12)	0	(0)	278
Spain †	-	-	-	-	6 841	**(87)**	979	(13)	0	(0)	7 820
Sweden	304	(53)	55	(10)	359	**(63)**	210	(37)	0	(0)	569
United Kingdom †	-	-	-	-	4 725	**(56)**	3 678	(43)	62	(1)	8 465
Subtotal EU	**-**	**-**	**-**	**-**	**74 295**	**(81)**	**17 084**	**(19)**	**466**	**(1)**	**91 845**
Andorra	6	(60)	0	(0)	6	**(60)**	4	(40)	0	(0)	10
Iceland	2	(18)	3	(27)	5	**(45)**	6	(55)	0	(0)	11
Israel †	-	-	-	-	308	**(76)**	98	(24)	0	(0)	406
Monaco	-	-	-	-	-	**-**	-	-	-	-	-
Norway	162	(56)	14	(5)	176	**(61)**	107	(37)	7	(2)	290
San Marino	-	-	-	-	-	**-**	-	-	-	-	-
Switzerland	308	(54)	91	(16)	399	**(70)**	168	(30)	0	(0)	567
Total EU & West	**-**	**-**	**-**	**-**	**75 189**	**(81)**	**17 467**	**(19)**	**473**	**(1)**	**93 129**
Balkans											
Albania	360	(67)	0	(0)	360	**(67)**	180	(33)	0	(0)	540
Bosnia & Herzegovina	1 816	(84)	80	(4)	1 896	**(88)**	264	(12)	0	(0)	2 160
Croatia	989	(86)	48	(4)	1 037	**(91)**	107	(9)	0	(0)	1 144
Macedonia, F.Y.R.	500	(76)	11	(2)	511	**(78)**	147	(22)	0	(0)	658
Montenegro †	-	-	-	-	157	**(92)**	13	(8)	0	(0)	170
Serbia	2 072	(88)	34	(1)	2 106	**(89)**	260	(11)	0	(0)	2 366
Turkey	14 462	(70)	525	(3)	14 987	**(73)**	5 548	(27)	0	(0)	20 535
Total Balkans	**-**	**-**	**-**	**-**	**21 054**	**(76)**	**6 519**	**(24)**	**0**	**(0)**	**27 573**
East †											
Armenia	-	-	-	-	1 957	**(84)**	365	(16)	0	(0)	2 322
Azerbaijan	-	-	-	-	7 269	**(92)**	651	(8)	0	(0)	7 920
Belarus *	-	-	-	-	5 938	**(93)**	387	(6)	32	(0)	6 357
Georgia	-	-	-	-	5 076	**(79)**	1 370	(21)	2	(0)	6 448
Kazakhstan	-	-	-	-	30 020	**(96)**	1 167	(4)	0	(0)	31 187
Kyrgyzstan	-	-	-	-	4 960	**(73)**	1 805	(27)	0	(0)	6 765
Moldova, Republic of	-	-	-	-	5 664	**(90)**	614	(10)	0	(0)	6 278
Russian Federation	-	-	-	-	132 171	**(85)**	14 961	(10)	8 915	(6)	156 047
Tajikistan	-	-	-	-	5 718	**(80)**	1 424	(20)	0	(0)	7 142
Turkmenistan	-	-	-	-	2 635	**(80)**	656	(20)	0	(0)	3 291
Ukraine	-	-	-	-	-	**-**	-	-	-	-	-
Uzbekistan	-	-	-	-	22 018	**(76)**	6 873	(24)	0	(0)	28 891
Total East	**-**	**-**	**-**	**-**	**223 426**	**(85)**	**30 273**	**(12)**	**8 949**	**(3)**	**262 648**
Total WHO European Region	**-**	**-**	**-**	**-**	**319 669**	**(83)**	**54 259**	**(14)**	**9 422**	**(2)**	**383 350**

* Cases classified by respiratory rather than pulmonary classification

† Reporting does not distinguish cases with pulmonary site alone from cases with both pulmonary and extrapulmonary disease

Table 8. Tuberculosis cases by area of origin and site of disease, WHO European Region*, 2005

Origin Geographic area of origin	Pulmonary†		Extrapulmonary		No site reported		Total
	N	(%)	N	(%)	N	(%)	
National (total)	**63 239**	**(81)**	**14 463**	**(19)**	**133**	**(0)**	**77 835**
EU & West	42 983	(84)	8 042	(16)	133	(0)	51 158
Balkans	20 256	(76)	6 421	(24)	0	(0)	26 677
Foreign (total)	**9 023**	**(63)**	**5 080**	**(36)**	**123**	**(1)**	**14 226**
EU & West	1 166	(85)	200	(15)	7	(1)	1 373
Balkans	1 058	(77)	297	(22)	15	(1)	1 370
East	1 129	(89)	128	(10)	16	(1)	1 273
Indian subcontinent ‡	1 415	(45)	1 734	(55)	27	(1)	3 176
Rest of Asia	890	(59)	601	(40)	13	(1)	1 504
Africa	2 751	(59)	1 841	(40)	34	(1)	4 626
America & Oceania	414	(73)	149	(26)	2	(0)	565
Unknown	200	(59)	130	(38)	9	(3)	339
Unknown	**1 314**	**(66)**	**591**	**(30)**	**94**	**(5)**	**1 999**
Total	**73 576**	**(78)**	**20 134**	**(21)**	**350**	**(0)**	**94 060**

* Pooled cases from 32 countries in the EU & West and Balkans with case-based data on country of origin (same countries of report and criterion of origin as in Table 5)
† May include cases with both pulmonary and extrapulmonary sites of disease
‡ Includes the following Asian countries: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka

Table 9. Paediatric and adult cases with TB meningitis or disseminated TB, by origin, WHO European Region*, 2005.

Geographic area	Origin								
	National			Foreign			Total†		
Country	0-14	15+	Total	0-14	15+	Total	N	% of all TB cases	Rate / 100,000 population
EU & West									
Austria	0	18	**18**	0	3	**3**	**21**	2.2%	0.3
Belgium	3	23	**26**	1	41	**42**	**68**	5.9%	0.7
Cyprus	0	0	**0**	0	0	**0**	**0**	0.0%	0.0
Czech Republic	0	30	**30**	0	1	**1**	**31**	3.1%	0.3
Estonia	0	2	**2**	0	1	**1**	**3**	0.6%	0.2
Germany	7	50	**57**	1	58	**59**	**119**	2.0%	0.1
Hungary	0	9	**9**	0	0	**0**	**9**	0.4%	0.1
Ireland	2	5	**7**	0	4	**4**	**11**	2.4%	0.3
Italy	2	33	**35**	1	19	**20**	**58**	1.4%	0.1
Latvia	0	14	**14**	0	0	**0**	**14**	1.0%	0.6
Lithuania	0	3	**3**	0	1	**1**	**4**	0.2%	0.1
Luxembourg	0	0	**0**	0	0	**0**	**0**	0.0%	0.0
Malta	0	0	**0**	0	0	**0**	**0**	0.0%	0.0
Portugal	3	118	**121**	0	30	**30**	**152**	4.3%	1.4
Romania	72	351	**423**	0	0	**0**	**423**	1.4%	1.9
Slovakia	0	6	**6**	0	0	**0**	**6**	0.8%	0.1
Slovenia	0	11	**11**	0	1	**1**	**12**	4.3%	0.6
Subtotal EU	**89**	**673**	**762**	**3**	**159**	**162**	**931**	**1.7%**	**0.4**
Andorra	0	0	**0**	0	0	**0**	**0**	0.0%	0.0
Iceland	0	0	**0**	0	0	**0**	**0**	0.0%	0.0
Norway	0	3	**3**	0	2	**2**	**5**	1.7%	0.1
Switzerland	0	5	**5**	1	8	**9**	**14**	2.5%	0.2
Total EU & West	**89**	**681**	**770**	**4**	**169**	**173**	**950**	**1.7%**	**0.4**
Balkans									
Albania	0	1	**1**	0	0	**0**	**1**	0.2%	0.0
Bosnia & Herzegovina	1	3	**4**	0	0	**0**	**4**	0.2%	0.1
Croatia	0	4	**4**	0	1	**1**	**11**	1.0%	0.2
Macedonia, F.Y.R.	1	1	**2**	0	0	**0**	**2**	0.3%	0.1
Serbia	0	4	**4**	0	0	**0**	**4**	0.2%	0.1
Turkey	60	211	**271**	0	1	**1**	**272**	1.3%	0.4
Total Balkans	**62**	**224**	**286**	**0**	**2**	**2**	**294**	**1.1%**	**0.3**

* Including only countries reporting case-based information on localisation of extrapulmonary disease

† Including cases with origin unknown

Table 10. Extrapulmonary TB cases and pulmonary-to-extrapulmonary ratio, WHO European Region, 1999-2005*

Geographic area Country	1999 Extrapulmonary cases	1999 P:E ratio†	2001 Extrapulmonary cases	2001 P:E ratio†	2003 Extrapulmonary cases	2003 P:E ratio†	2005 Extrapulmonary cases	2005 P:E ratio†
EU & West								
Austria	229	4.4	204	4.3	159	5.2	178	4.4
Belgium	311	3.1	343	2.8	280	3.0	309	2.7
Bulgaria	-	-	-	-	-	-	-	-
Cyprus	-	-	-	-	6	4.8	13	1.9
Czech Republic	-	-	288	3.7	251	3.6	207	3.9
Denmark	191	1.8	165	2.1	107	2.7	129	2.3
Estonia	67	10.3	92	7.8	66	8.4	51	9.2
Finland	184	2.1	178	1.8	120	2.4	98	2.7
France	1 760	2.7	1 634	2.9	1 622	2.7	1 458	2.6
Germany	-	-	-	-	1 390	4.0	1 275	3.6
Greece	125	6.6	71	7.7	87	6.1	-	-
Hungary	232	15.9	217	13.5	179	13.4	129	14.7
Ireland	-	-	86	3.5	102	2.9	-	-
Italy	1 125	2.9	1 227	2.7	1 159	2.9	1 119	2.7
Latvia	-	-	326	5.4	183	8.4	148	8.8
Lithuania	630	3.6	509	4.9	429	5.6	363	6.1
Luxembourg	1	41.0	7	3.6	3	17.0	3	11.3
Malta	3	6.3	1	15.0	3	1.3	6	2.7
Netherlands	576	1.7	486	2.0	453	1.9	401	1.9
Poland	-	-	-	-	913	10.1	821	10.3
Portugal	1 498	2.4	1 209	2.6	1 124	2.7	967	2.7
Romania	3 718	6.2	4 022	6.6	4 080	6.6	3 771	6.8
Slovakia	225	4.4	197	4.5	206	3.8	141	4.4
Slovenia	75	4.8	65	4.7	44	5.7	32	7.7
Spain	-	-	-	-	-	-	979	7.0
Sweden	150	2.3	149	1.9	152	1.7	210	1.7
United Kingdom	2 345	1.4 ‡	2 665	1.5 ‡	2 973	1.4	3 678	1.3
All EU		**3.8**		**4.0**		**4.3**		**4.3**
Andorra	3	2.0	1	4.0	2	4.5	4	1.5
Iceland	3	3.0	5	1.6	2	1.5	6	0.8
Israel	151	2.4	136	3.2	110	3.8	98	3.1
Monaco	1	2.0	0	-	-	-	-	-
Norway	110	1.5	84	2.4	125	1.7	107	1.6
San Marino	-	-	-	-	-	-	-	-
Switzerland	207	2.7	156	2.9	158	2.9	168	2.4
All EU & West		**3.8**		**4.0**		**4.3**		**4.2**
Balkans								
Albania	261	1.9	217	1.6	199	1.8	180	2.0
Bosnia & Herzegovina	326	8.4	298	7.6	223	7.0 §	264	7.2
Croatia	205	7.6	163	8.2	169	7.8	107	9.7
Macedonia, F.Y.R.	-	-	141	3.9	168	3.2	147	3.5
Montenegro	-	-	-	-	-	-	13	12.1
Serbia	-	-	-	-	-	-	260	8.1
Turkey	-	-	-	-	5 041	2.6	5 548	2.7
All Balkans		**6.1**		**5.5**		**2.9**		**3.2**
East								
Armenia	117	11.8	157	7.9	263	5.0	365	5.4
Azerbaijan	-	-	956	4.2	735	4.4	651	11.2
Belarus	-	-	-	-	-	-	-	-
Georgia	1 719	2.8	1 172	4.0	1 333	3.5	1 370	3.7
Kazakhstan	-	-	-	-	1 182	26.2	1 167	25.7
Kyrgyzstan	-	-	-	-	2 149	2.3	1 805	2.8
Moldova, Republic of	-	-	655	4.8	687	6.3	614	9.2
Russian Federation	-	-	-	-	4 934	29.9	-	-
Tajikistan	-	-	381	8.2	-	-	1 424	4.0
Turkmenistan	-	-	951	4.2	976	3.9	656	4.0
Ukraine	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	-	2 260	10.6	6 873	3.2
All East		**3.4**		**4.7**		**15.5**		**5.7**
All WHO European Region		**3.8**		**4.2**		**8.5**		**4.6**

* Data not included if site of disease was reported for less than 95% of cases notified or if respiratory classification of disease was used

† Pulmonary may include cases with both pulmonary and extrapulmonary disease (see also Table 7 for 2005 data)

‡ Excluding cases from Scotland

§ Excluding Republika Srpska

Table 11. Pulmonary smear positive tuberculosis cases, WHO European Region, 1999-2005*

Geographic area	1999			2002			2005		
Country	N	% of all pulmonary cases	/ 100 000 population	N	% of all pulmonary cases	/ 100 000 population	N	% of all pulmonary cases	/ 100 000 population
EU & West									
Austria	362	(36)	4.5	279	(32)	3.4	244	(31)	3.0
Belgium	417	(44)	4.1	452	(46)	4.4	401	(48)	3.8
Bulgaria	-	-	-	-	-	-	-	-	-
Cyprus	-	-	-	10	(71)	1.2	9	(38)	1.1
Czech Republic	-	-	-	331	(36)	3.2	321	(40)	3.1
Denmark	113	(33)	2.1	145	(47)	2.7	136	(46)	2.5
Estonia	305	(44)	22.1	298	(47)	22.1	201	(43)	15.1
Finland	180	(47)	3.5	136	(46)	2.6	134	(51)	2.6
France	2 631	(55)	4.3	2 558	(56)	4.2	2 119	(56)	3.4
Germany	-	-	-	2 043	(34)	2.5	1 491	(32)	1.8
Greece	412	(50)	3.8	231	(46)	2.1	226	(39)	2.0
Hungary	826	(22)	8.1	665	(25)	6.5	504	(27)	5.0
Ireland	124	(38)	3.3	122	(40)	3.1	141	(44)	3.4
Italy	1 637	(50)	2.8	1 476	(46)	2.6	1 371	(46)	2.4
Latvia	-	-	-	828	(51)	35.3	673	(52)	29.2
Lithuania	984	(43)	27.9	1 202	(51)	34.7	1 324	(60)	38.6
Luxembourg	8	(20)	1.9	18	(64)	4.0	14	(41)	3.0
Malta	5	(26)	1.3	5	(26)	1.3	5	(31)	1.2
Netherlands	345	(36)	2.2	356	(40)	2.2	252	(33)	1.5
Poland	-	-	-	3 432	(36)	8.9	3 258	(39)	8.5
Portugal	2 075	(57)	20.4	2 149	(65)	20.8	1 467	(57)	14.0
Romania	12 788	(55)	57.6	16 382	(55)	74.7	15 968	(62)	73.5
Slovakia	307	(31)	5.7	242	(29)	4.5	186	(30)	3.4
Slovenia	191	(53)	9.7	147	(50)	7.5	127	(52)	6.5
Spain	-	-	-	-	-	-	2 686	(39)	6.2
Sweden	129	(38)	1.5	121	(46)	1.4	143	(40)	1.6
United Kingdom	1 051	(31)	1.8	1 374	(34)	2.3	1 892	(40)	3.2
Subtotal EU	**24 890**	**(48)**	**8.3**	**35 002**	**(47)**	**8.0**	**35 293**	**(49)**	**7.3**
Andorra	3	(50)	4.6	3	(75)	4.5	5	(83)	7.4
Iceland	4	(44)	1.4	2	(33)	0.7	2	(40)	0.7
Israel	190	(51)	3.2	188	(48)	3.0	98	(32)	1.5
Monaco	2	(100)	6.1	0	-	0.0	-	-	-
Norway	34	(21)	0.8	35	(23)	0.8	51	(29)	1.1
San Marino	0	-	0.0	0	-	0.0	-	-	-
Switzerland	130	(23)	1.8	145	(29)	2.0	117	(29)	1.6
Total EU & West	**25 253**	**(48)**	**7.9**	**35 375**	**(47)**	**7.8**	**35 566**	**(49)**	**7.1**
Balkans									
Albania	184	(37)	6.0	253	(62)	8.2	213	(59)	6.8
Bosnia & Herzegovina	931	(34)	24.8	899	(40)	22.9	700	(37)	17.9
Croatia	545	(35)	12.0	494	(37)	11.0	417	(40)	9.2
Macedonia, F.Y.R.	-	-	-	240	(43)	11.9	223	(44)	11.0
Montenegro	-	-	-	-	-	-	74	(47)	11.9
Serbia	-	-	-	-	-	-	981	(47)	13.2
Turkey	-	-	-	-	-	-	8 505	(57)	11.6
Total Balkans	**1 660**	**(34)**	**14.6**	**1 886**	**(41)**	**13.9**	**11 113**	**(53)**	**11.7**
East									
Armenia	641	(46)	20.7	573	(45)	18.8	908	(46)	30.1
Azerbaijan	-	-	-	1 981	(43)	24.0	2 875	(40)	34.2
Belarus	-	-	-	-	-	-	-	-	-
Georgia	1 399	(29)	29.3	1 638	(33)	35.5	2 597	(51)	58.0
Kazakhstan	-	-	-	15 115	(48)	101.5	12 501	(42)	84.3
Kyrgyzstan	-	-	-	1 945	(45)	38.3	2 526	(51)	48.0
Moldova, Republic of	-	-	-	1 482	(42)	34.9	2 878	(51)	68.4
Russian Federation	-	-	-	-	-	-	39 278	(30)	27.4
Tajikistan	-	-	-	-	-	-	2 534	(44)	38.9
Turkmenistan	-	-	-	1 796	(44)	38.8	1 104	(42)	22.8
Ukraine	-	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	8 501	(36)	33.4	9 262	(42)	34.8
Total East	**2 040**	**(33)**	**25.9**	**33 031**	**(42)**	**47.0**	**76 463**	**(35)**	**34.5**
Total WHO European Region	**28 953**	**(46)**	**8.6**	**70 292**	**(44)**	**13.0**	**123 142**	**(40)**	**15.0**

* Data for countries using respiratory classification of disease not included.

Table 12. Tuberculosis cases by history of previous TB diagnosis or anti-TB treatment*, WHO European Region, 1999 & 2005

Geographic area	1999						2005					
	Never treated or diagnosed		Previously treated or diagnosed		Unknown TB history		Never treated or diagnosed		Previously treated or diagnosed		Unknown TB history	
Country	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
EU & West												
Austria	1 126	(90)	25	(2)	94	(8)	900	(94)	26	(3)	28	(3)
Belgium	*983*	*(77)*	*146*	*(11)*	*141*	*(11)*	*878*	*(77)*	*68*	*(6)*	*198*	*(17)*
Bulgaria	3 242	(92)	288	(8)	0	(0)	3 101	(94)	201	(6)	0	(0)
Cyprus	-	-	-	-	-	-	33	(89)	3	(8)	1	(3)
Czech Republic	1 431	(88)	61	(4)	139	(9)	973	(97)	34	(3)	0	(0)
Denmark	*502*	*(94)*	*34*	*(6)*	*0*	*(0)*	*395*	*(93)*	*29*	*(7)*	*0*	*(0)*
Estonia	642	(85)	112	(15)	0	(0)	425	(82)	94	(18)	0	(0)
Finland	473	(84)	34	(6)	59	(10)	*231*	*(64)*	*22*	*(6)*	*108*	*(30)*
France	*4 196*	*(63)*	*622*	*(9)*	*1 856*	*(28)*	4 453	(83)	376	(7)	545	(10)
Germany	-	-	-	-	-	-	4 591	(76)	499	(8)	955	(16)
Greece	897	(94)	55	(6)	0	(0)	582	(76)	75	(10)	110	(14)
Hungary	*3 193*	*(82)*	*721*	*(18)*	*0*	*(0)*	1 660	(82)	347	(17)	17	(1)
Ireland	*158*	*(34)*	*33*	*(7)*	*278*	(59)	*277*	*(60)*	*44*	*(10)*	*140*	*(30)*
Italy	*1 709*	*(39)*	*320*	*(7)*	*2 400*	*(54)*	3 438	(83)	294	(7)	405	(10)
Latvia	1 673	(85)	295	(15)	0	(0)	1 238	(86)	205	(14)	0	(0)
Lithuania	2 558	(88)	345	(12)	0	(0)	2 108	(82)	460	(18)	6	(0)
Luxembourg	38	(90)	4	(10)	0	(0)	36	(97)	0	(0)	1	(3)
Malta	22	(100)	0	(0)	0	(0)	22	(96)	1	(4)	0	(0)
Netherlands	*1 375*	*(90)*	*160*	*(10)*	*0*	*(0)*	974	(84)	44	(4)	139	(12)
Poland	10 709	(88)	1 470	(12)	0	(0)	*8 203*	*(88)*	*1 077*	*(12)*	*0*	*(0)*
Portugal	4 599	(89)	561	(11)	0	(0)	3 186	(90)	350	(10)	0	(0)
Romania	23 320	(87)	3 544	(13)	6	(0)	22 408	(76)	6 939	(24)	0	(0)
Slovakia	970	(80)	218	(18)	30	(2)	627	(83)	108	(14)	25	(3)
Slovenia	391	(89)	47	(11)	0	(0)	249	(90)	29	(10)	0	(0)
Spain	6 177	(74) †	387	(5) †	1 829	(22) †	6 185	(79)	539	(7)	1 096	(14)
Sweden	456	(92)	22	(4)	15	(3)	539	(95)	30	(5)	0	(0)
United Kingdom	*4 286*	*(74)* ‡	*464*	*(8)* ‡	*1 041*	*(18)* ‡	*6 029*	*(71)*	*553*	*(7)*	*1 883*	*(22)*
Subtotal EU	**75 126**	**(81)**	**9 968**	**(11)**	**7 888**	**(8)**	**73 741**	**(80)**	**12 447**	**(14)**	**5 657**	**(6)**
Andorra	9	(100)	0	(0)	0	(0)	10	(100)	0	(0)	0	(0)
Iceland	9	(75)	3	(25)	0	(0)	10	(91)	1	(9)	0	(0)
Israel	*481*	*(93)*	*39*	*(8)*	*0*	*(0)*	386	(95)	7	(2)	13	(3)
Monaco	0	(0)	3	(100)	0	(0)	-	-	-	-	-	-
Norway	*212*	*(78)*	*61*	*(22)*	*0*	*(0)*	259	(89)	15	(5)	16	(6)
San Marino	0	-	0	-	0	-	-	-	-	-	-	-
Switzerland	534	(69)	79	(10)	159	(21)	407	(72)	44	(8)	116	(20)
Total EU & West	**76 371**	**(81)**	**10 153**	**(11)**	**8 047**	**(9)**	**74 813**	**(80)**	**12 514**	**(13)**	**5 802**	**(6)**
Balkans												
Albania	722	(94)	43	(6)	0	(0)	497	(92)	43	(8)	0	(0)
Bosnia & Herzegovina	2 712	(88)	363	(12)	0	(0)	2 004	(93)	156	(7)	0	(0)
Croatia	*1 622*	*(92)*	*146*	*(8)*	*2*	*(0)*	1 043	(91)	94	(8)	7	(1)
Macedonia, F.Y.R.	532	(92)	44	(8)	0	(0)	555	(84)	103	(16)	0	(0)
Montenegro	-	- §	-	- §	-	- §	143	(84)	27	(16)	0	(0)
Serbia	2 399	(91) §	247	(9) §	0	(0) §	*2 106*	*(89)*	*260*	*(11)*	*0*	*(0)*
Turkey	18 752	(85)	3 336	(15)	0	(0)	18 753	(91)	1 782	(9)	0	(0)
Total Balkans	**26 739**	**(86)**	**4 179**	**(14)**	**2**	**(0)**	**25 101**	**(91)**	**2 465**	**(9)**	**7**	**(0)**
East												
Armenia	1 434	(96)	65	(4)	0	(0)	1 886	(81)	327	(14)	109	(5)
Azerbaijan	4 559	(98)	70	(2)	0	(0)	4 720	(60)	3 200	(40)	0	(0)
Belarus	6 729	(92)	610	(8)	0	(0)	5 276	(83)	1 049	(17)	32	(1)
Georgia	4 478	(68)	2 068	(32)	0	(0)	4 243	(66)	2 152	(33)	53	(1)
Kazakhstan	20 912	(83)	4 148	(17)	0	(0)	22 303	(72)	8 884	(28)	0	(0)
Kyrgyzstan	6 376	(98)	125	(2)	0	(0)	5 918	(87)	847	(13)	0	(0)
Moldova, Republic of	2 648	(90)	299	(10)	0	(0)	4 501	(72)	1 777	(28)	0	(0)
Russian Federation	124 044	(92)	11 010	(8)	0	(0)	119 226	(76)	36 821	(24)	0	(0)
Tajikistan	-	-	-	-	-	-	5 095	(71)	1 805	(25)	242	(3)
Turkmenistan	4 010	(98)	82	(2)	0	(0)	3 149	(96)	142	(4)	0	(0)
Ukraine	27 118	(82)	5 761	(18)	0	(0)	38 403	(89)	4 964	(11)	0	(0)
Uzbekistan	15 080	(89)	1 879	(11)	0	(0)	19 876	(69)	9 015	(31)	0	(0)
Total East	**217 388**	**(89)**	**26 117**	**(11)**	**0**	**(0)**	**234 596**	**(77)**	**70 983**	**(23)**	**436**	**(0)**
Total WHO European Region	**320 498**	**(87)**	**40 449**	**(11)**	**8 049**	**(2)**	**334 510**	**(78)**	**85 962**	**(20)**	**6 245**	**(1)**

* Distribution of cases by previous anti-TB treatment, except where italicised (previous diagnosis).

† New and recurrent respiratory and meningeal cases only

‡ Excluding Scotland

§ Cases from Montenegro included with Serbia

Table 13. Tuberculosis cases confirmed by culture, WHO European Region, 1999-2005*

Geographic area	1999		2002		2005*	
Country	Culture confirmed cases	% of all TB cases reported	Culture confirmed cases	% of all TB cases reported	Culture confirmed cases	% of all TB cases reported
EU & West						
Austria	849	(68)	701	(65)	634	(66)
Belgium	926	(73)	1 014	(78)	849	(74)
Bulgaria	-	-	1 626	(49)	1 254	(38)
Cyprus	-	-	13	(65)	19	(51)
Czech Republic	830	(51)	758	(63)	645	(64)
Denmark	428	(80)	311	(74)	326	(77)
Estonia	528	(70)	534	(75)	390	(75)
Finland	477	(84)	391	(83)	316	(88)
France	1 683	(25)	1 839	(29)	2 163	(40)
Germany	3 963	(67) †	4 966	(64)	4 058	(67)
Greece	396	(42)	271	(47)	213	(28)
Hungary	1 206	(31)	959	(34)	784	(39)
Ireland	260	(55)	253	(62)	205	(44)
Italy	2 164	(49) ‡	1 600	(38)	1 594	(39)
Latvia	1 206	(61)	1 296	(70)	1 096	(76)
Lithuania	1 420	(49)	1 544	(54)	1 739	(68)
Luxembourg	42	(100)	32	(100)	37	(100)
Malta	13	(59)	14	(58)	10	(43)
Netherlands	943	(61)	768	(55)	758	(66)
Poland	6 700	(55)	5 663	(54)	5 409	(58)
Portugal	1 624	(31)	2 571	(57)	1 813	(51)
Romania	13 495	(50)	18 547	(55)	11 788	(40)
Slovakia	645	(53)	504	(48)	357	(47)
Slovenia	350	(80)	292	(83)	245	(88)
Spain	3 817	(45) §	3 837	(50) §	3 686	(47)
Sweden	412	(84)	353	(87)	446	(78)
United Kingdom	3 400	(54)	4 162	(57)	5 086	(60)
Subtotal EU	**47 777**	**(50)**	**54 819**	**(54)**	**45 920**	**(50)**
Andorra	3	(33)	2	(40)	9	(90)
Iceland	8	(67)	6	(75)	8	(73)
Israel	300	(58)	344	(67)	217	(53)
Monaco	2	(67)	0	-	-	-
Norway	186	(68)	192	(76)	214	(74)
San Marino	0	-	1	(100)	-	-
Switzerland	615	(80)	519	(79)	463	(82)
Total EU & West	**48 891**	**(99)**	**55 883**	**(54)**	**46 831**	**(50)**
Balkans						
Albania	138	(18)	232	(38)	196	(36)
Bosnia & Herzegovina	1 748	(57)	1 494	(59)	1 142	(53)
Croatia	871	(49)	844	(57)	640	(56)
Macedonia, F.Y.R.	-	-	142	(19)	160	(24)
Montenegro	-	-	-	-	107	(63)
Serbia	-	-	1 786	(59)	1 233	(52)
Turkey	-	-	-	-	5 793	(28)
Total Balkans	**2 757**	**(49)**	**4 498**	**(54)**	**9 271**	**(34)**
East						
Armenia	576	(38)	-	-	-	-
Azerbaijan	210	(5)	1 040	(19)	-	-
Belarus	-	-	-	-	2 295	(36)
Georgia	1 147	(18)	-	-	257	(4)
Kazakhstan	-	-	3 122	(9)	5 955	(19)
Kyrgyzstan	-	-	-	-	993	(15)
Moldova, Republic of	1 026	(35)	-	-	1 881	(30)
Russian Federation	-	-	-	-	31 224	(20)
Tajikistan	-	-	-	-	-	-
Turkmenistan	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-
Uzbekistan	-	-	-	-	-	-
Total East	**2 959**	**(19)**	**4 162**	**(11)**	**42 605**	**(20)**
Total WHO European Region	**54 607**	**(46)**	**64 543**	**(43)**	**98 707**	**(30)**

* In italics countries where culture was not routine (or not known to be routine) in diagnosis of pulmonary TB in 2004-2005. Reporting of culture results for 2005 often incomplete at time of data collection.

† Results from a national sample of TB cases notified

‡ Among pulmonary cases only (N=3 289)

§ New and recurrent respiratory and meningeal cases

Table 14. Tuberculosis cases by *M. tuberculosis* complex species, WHO European Region, 2005*

Geographic area	*M. tuberculosis*		*M. bovis*		*M. africanum*		Unknown / not done		Total culture
Country	N	(%)	N	(%)	N	(%)	N	(%)	positive
EU & West									
Austria	141	(22.2)	6	(0.9)	0	(0.0)	487	(76.8)	634
Belgium	846	(99.6)	2	(0.2)	1	(0.1)	0	(0.0)	849
Cyprus	17	(89.5)	0	(0.0)	0	(0.0)	2	(10.5)	19
Czech Republic	626	(97.1)	1	(0.2)	0	(0.0)	18	(2.8)	645
Denmark	326	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	326
Estonia	146	(37.4)	0	(0.0)	0	(0.0)	244	(62.6)	390
Finland	316	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	316
Germany	3 380	(83.3)	49	(1.2)	15	(0.4)	614	(15.1)	4 058
Hungary	784	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	784
Ireland	176	(85.9)	3	(1.5)	0	(0.0)	26	(12.7)	205
Italy	1 493	(93.7)	3	(0.2)	6	(0.4)	92	(5.8)	1 594
Latvia	1 096	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1 096
Lithuania	1 739	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1 739
Luxembourg	36	(97.3)	0	(0.0)	1	(2.7)	0	(0.0)	37
Malta	9	(90.0)	1	(10.0)	0	(0.0)	0	(0.0)	10
Netherlands	731	(96.4)	9	(1.2)	0	(0.0)	18	(2.4)	758
Romania	11 583	(98.3)	0	(0.0)	0	(0.0)	205	(1.7)	11 788
Slovakia	352	(98.6)	0	(0.0)	0	(0.0)	5	(1.4)	357
Slovenia	245	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	245
Sweden	441	(98.9)	4	(0.9)	0	(0.0)	1	(0.2)	446
United Kingdom	4 962	(97.6)	26	(0.5)	15	(0.3)	83	(1.6)	5 086
Subtotal EU	**29 445**	**(93.8)**	**104**	**(0.3)**	**38**	**(0.1)**	**1 795**	**(5.7)**	**31 382**
Andorra	9	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	9
Iceland	8	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	8
Norway	209	(97.7)	2	(0.9)	3	(1.4)	0	(0.0)	214
Switzerland	419	(90.5)	4	(0.9)	8	(1.7)	32	(6.9)	463
Total EU & West	**30 090**	**(93.8)**	**110**	**(0.3)**	**49**	**(0.2)**	**1 827**	**(5.7)**	**32 076**
Balkans									
Albania	176	(89.8)	0	(0.0)	0	(0.0)	20	(10.2)	196
Bosnia & Herzegovina	1 142	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1 142
Macedonia, F.Y.R.	15	(9.4)	0	(0.0)	0	(0.0)	145	(90.6)	160
Turkey	908	(15.7)	0	(0.0)	0	(0.0)	4 885	(84.3)	5 793
Total Balkans	**2 241**	**(30.7)**	**0**	**(0.0)**	**0**	**(0.0)**	**5 050**	**(69.3)**	**7 291**

* Including only case-based data on species identification among culture positive cases.

Table 15. Tuberculosis cases with HIV infection, WHO European Region*, 2000-2005

Geographic area / Country	% unknown HIV status (latest year with data)	2000			2001			2002			2003			2004			2005		
		TB	HIV +		TB	HIV +		TB	HIV +		TB	HIV +		TB	HIV +		TB	HIV +	
		cases	N	(%)	cases	N	(%)	cases	N	(%)	cases	N	(%)	cases	N	(%)	cases	N	(%)
EU & West																			
Belgium	18%	1 313	52	(4.0)	1 321	60	(4.5)	1 320	51	(3.9)	1 117	70	(6.3)	1 198	55	(4.6)	1 144	52	(4.5)
Bulgaria	>99%	-	-	-	-	-	-	-	-	-	-	-	-	3 232	10	(0.3)	-	-	-
Czech Rep.	>99%	1 200	2	(0.2)	1 350	2	(0.1)	1 200	0	(0.0)	1 162	2	(0.2)	-	-	-	-	-	-
Denmark	98%	548	11	(2.0)	511	11	(2.2)	-	-	-	393	11	(2.8)	385	7	(1.8)	424	9	(2.1)
Estonia	9%	791	1	(0.1)	812	7	(0.9)	713	20	(2.8)	623	18	(2.9)	594	26	(4.4)	519	33	(6.4)
France	59%	6 714	327	(4.9)	6 465	364	(5.6)	-	-	-	-	-	-	-	-	-	-	-	-
Finland	Unknown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	361	3	(0.8)
Ireland	99%	395	7	(1.8)	381	7	(1.8)	408	19	(4.7)	407	2	(0.5)	431	13	(3.0)	461	2	(0.4)
Italy	0%	-	-	-	-	-	-	-	-	-	-	-	-	404	11	(2.7) †	-	-	
Latvia	96%	2 009	14	(0.7)	2 022	27	(1.3)	1 818	25	(1.4)	1 726	40	(2.3)	1 610	40	(2.5)	1 443	51	(3.5)
Lithuania	Unknown	2 668	2	(0.1)	2 606	3	(0.1)	2 420	1	(0.0)	-	-	-	2 514	8	(0.3)	2 574	7	(0.3)
Malta	0%	18	0	(0.0)	16	0	(0.0)	24	0	(0.0)	7	1	(14.3)	19	1	(5.3)	23	0	(0.0)
Netherlands	78%	1 404	66	(4.7)	1 436	67	(4.7)	1 401	62	(4.4)	1 321	65	(4.9)	1 344	46	(3.4)	1 157	61	(5.3)
Poland	>99%	-	-	-	-	-	-	-	-	-	10 124	15	(0.1)	-	-	-	-	-	-
Portugal	50%	4 494	700	(15.6)	4 387	680	(15.5)	4 431	727	(16.4)	4 148	669	(16.1)	3 854	607	(15.7)	3 536	546	(15.4)
Romania	63%	-	-	-	-	-	-	-	-	-	31 039	161	(0.5)	31 034	144	(0.5)	29 347	187	(0.6)
Slovakia	23%	1 111	0	(0.0)	1 076	0	(0.0)	1 053	0	(0.0)	983	1	(0.1)	705	0	(0.0)	760	1	(0.1)
Slovenia	76%	380	2	(0.5)	372	2	(0.5)	349	1	(0.3)	293	1	(0.3)	263	3	(1.1)	278	0	(0.0)
Spain	55%	8 395	815	(9.7) ‡	7 453	599	(8.0) ‡	7 626	926	(12.1) ‡	7 467	714	(9.6) ‡	7 766	436	(5.6)	7 820	394	(5.0)
United Kingdom § ‖	Unknown	5 990	253	(4.2)	6 211	314	(5.1)	6 497	459	(7.1)	6 584	548	(8.3)	-	-	-	-	-	-
Andorra	20%	-	-	-	-	-	-	-	-	-	11	0	(0.0)	7	0	(0.0)	10	0	(0.0)
Iceland	18%	13	0	(0.0)	13	0	(0.0)	8	1	(12.5)	5	1	(20.0)	12	1	(8.3)	11	1	(9.1)
Israel §	Unknown	591	28	(4.7)	564	25	(4.4)	511	24	(4.7)	529	36	(6.8)	519	13	(2.5)	406	22	(5.4)
Balkans																			
Albania	>99%	631	1	(0.2)	572	3	(0.5)	612	3	(0.5)	-	-	-	581	1	(0.2)	540	1	(0.2)
Macedonia, F.Y.R.	94%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	658	2	(0.3)
Montenegro	95%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	0	(0.0)
Serbia	>99%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 366	3	(0.1)
East																			
Armenia	98%	-	-	-	1 343	0	(0.0)	1 393	3	(0.2)	1 570	1	(0.1)	269	8	(3.0) †	2 322	46	(2.0)
Azerbaijan §	Unknown	5 113	5	(0.1)	4 877	12	(0.2)	4 428	7	(0.2)	3 931	8	(0.2)	-	-	-	-	-	-
Belarus §	Unknown	-	-	-	5 505	33	(0.6) ¶	5 139	36	(0.7)	-	-	-	5 410	25	(0.5) ¶	5 276	32	(0.6) ¶
Georgia	90%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6 448	13	(0.2)
Russian Federation	Unknown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119 226	1 544	(1.3) ¶
Uzbekistan	>99%	-	-	-	-	-	-	-	-	-	26 172	160	(0.6)	25 714	138	(0.5)	28 891	147	(0.5)

* Aggregate data; totals of TB cases may differ from those presented elsewhere in this Report; HIV prevalence may be underestimated due to incomplete HIV testing and/or reporting of HIV serostatus

† Selected cases (DOTS patients in Italy; testing on a sample of cases in Armenia)

‡ Among new and recurrent respiratory and meningeal cases only

§ HIV serostatus attributed through matching of TB and HIV case reports; proportion of cases with unknown HIV serostatus not available

‖ Data for England and Wales only

¶ Among new TB cases only

Table 16. AIDS cases with tuberculosis as initial AIDS indicative disease, WHO European Region, 2005 *

	Total AIDS cases		AIDS-indicative opportunistic infection, unspecified		TB as initial AIDS-indicative disease						AIDS cases with initial AIDS-indicative TB/ total TB cases (%)
					Pulmonary TB †		Extra-pulmonary TB ‡		Total		
	N	Cases / 100 000	N	%	N	%	N	%	N	%	
EU & West											
Austria	66	0.8	6	(9)	8	(12)	1	(2)	9	(14)	0.9 %
Belgium	172	1.7	0	(0)	33	(19)	25	(15)	58	(34)	5.1 %
Bulgaria	19	0.2	0	(0)	12	(63)	0	(0)	12	(63)	0.4 %
Cyprus	-	-	-	-	-	-	-	-	-	-	-
Czech Republic	12	0.1	0	(0)	1	(8)	0	(0)	1	(8)	0.1 %
Denmark	56	1.0	0	(0)	7	(13)	1	(2)	8	(14)	1.9 %
Estonia	30	2.3	0	(0)	8	(27)	0	(0)	8	(27)	1.5 %
Finland	25	0.5	0	(0)	3	(12)	0	(0)	3	(12)	0.8 %
France	1 329	2.1	0	(0)	143	(11)	105	(8)	248	(19)	4.6 %
Germany	1 103	1.3	0	(0)	35	(3)	64	(6)	99	(9)	1.6 %
Greece	122	1.1	0	(0)	12	(10)	5	(4)	17	(14)	2.2 %
Hungary	33	0.3	1	(3)	4	(12)	0	(0)	4	(12)	0.2 %
Ireland	63	1.5	1	(2)	5	(8)	7	(11)	12	(19)	2.6 %
Italy	1 577	2.7	0	(0)	98	(6)	72	(5)	170	(11)	4.1 %
Latvia	73	3.2	35	(48)	20	(27)	1	(1)	21	(29)	1.5 %
Lithuania	10	0.3	0	(0)	4	(40)	0	(0)	4	(40)	0.2 %
Luxembourg	8	1.7	0	(0)	2	(25)	0	(0)	2	(25)	5.4 %
Malta	3	0.7	1	(33)	0	(0)	0	(0)	0	(0)	0.0 %
Netherlands	198	1.2	198	(100)	-	-	-	-	-	-	-
Poland	188	0.5	9	(5)	29	(15)	8	(4)	37	(20)	0.4 %
Portugal	947	9.0	100	(11)	194	(20)	163	(17)	357	(38)	10.1 %
Romania	270	1.2	270	(100)	-	-	-	-	-	-	-
Slovakia	3	0.1	0	(0)	1	(33)	0	(0)	1	(33)	0.1 %
Slovenia	13	0.7	0	(0)	1	(8)	0	(0)	1	(8)	0.4 %
Spain	2 200	5.1	0	(0)	330	(15)	296	(13)	626	(28)	8.0 %
Sweden	49	0.5	9	(18)	10	(20)	2	(4)	12	(24)	2.1 %
United Kingdom	906	1.5	0	(0)	203	(22)	86	(9)	289	(32)	3.4 %
Subtotal EU	**9 475**	**2.0**	**630**	**(7)**	**1 163**	**(12)**	**836**	**(9)**	**1 999**	**(21)**	**2.2 %**
Andorra	1	1.5	0	(0)	0	(0)	0	(0)	0	(0)	0.0 %
Iceland	1	0.3	0	(0)	0	(0)	0	(0)	0	(0)	0.0 %
Israel	62	0.9	1	(2)	20	(32)	5	(8)	25	(40)	6.2 %
Monaco	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-
San Marino	1	3.6	0	(0)	0	(0)	0	(0)	0	(0)	-
Switzerland	234	3.2	0	(0)	19	(8)	13	(6)	32	(14)	5.6 %
Total EU & West	**9 774**	**2.0**	**631**	**(6)**	**1 202**	**(12)**	**854**	**(9)**	**2 056**	**(21)**	**2.2 %**
Balkans											
Albania	9	0.3	1	(11)	0	(0)	0	(0)	0	(0)	0.0 %
Bosnia & Herzegovina	8	0.2	0	(0)	1	(13)	0	(0)	1	(13)	0.0 %
Croatia	16	0.4	0	(0)	3	(19)	2	(13)	5	(31)	0.4 %
Macedonia, F.Y.R.	12	0.6	0	(0)	5	(42)	0	(0)	5	(42)	0.8 %
Montenegro §	-	-	-	-	-	-	-	-	-	-	-
Serbia §	61	0.8	1	(2)	6	(10)	9	(15)	15	(25)	0.6 %
Turkey	37	0.1	0	(0)	8	(22)	2	(5)	10	(27)	0.0 %
Total Balkans	**143**	**0.2**	**2**	**(1)**	**23**	**(16)**	**13**	**(9)**	**36**	**(25)**	**0.1 %**
East											
Armenia	41	1.4	19	(46)	10	(24)	0	(0)	10	(24)	0.4 %
Azerbaijan	55	0.7	27	(49)	14	(25)	0	(0)	14	(25)	0.2 %
Belarus	128	1.3	2	(2)	29	(23)	7	(5)	36	(28)	0.6 %
Georgia	120	2.7	33	(28)	26	(22)	4	(3)	30	(25)	0.5 %
Kazakhstan	101	0.7	5	(5)	65	(64)	1	(1)	66	(65)	0.2 %
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-
Moldova, Republic of	64	1.5	0	(0)	37	(58)	0	(0)	37	(58)	0.6 %
Russian Federation	n/a	-	-	-	-	-	-	-	-	-	-
Tajikistan	0	-	0	-	0	-	0	-	0	-	0.0 %
Turkmenistan	0	-	0	-	0	-	0	-	0	-	0.0 %
Ukraine	3 930	8.5	114	(3)	2 068	(53)	175	(4)	2 243	(57)	5.2 %
Uzbekistan	11	0.0	0	(0)	3	(27)	0	(0)	3	(27)	0.0 %
Total East	**4 450**	**3.4**	**200**	**(4)**	**2 252**	**(51)**	**187**	**(4)**	**2 439**	**(55)**	**1.7 %**
Total WHO European Region	**14 367**	**2.0**	**833**	**(6)**	**3 477**	**(24)**	**1 054**	**(7)**	**4 531**	**(32)**	**1.7 %**

* Source: EuroHIV, European Non Aggregate AIDS Data Set (ENAADS). Update December 2005, by year of report without adjustment for reporting delay

† In persons over 12 years of age; includes cases with concomitant pulmonary and extrapulmonary TB

‡ At all ages

§ Cases from Montenegro included with Serbia

Table 17. AIDS cases with TB as initial AIDS-indicative disease, by year of diagnosis, WHO European Region, 2000-2005*

Geographic area	Year of diagnosis					
Country	2000	2001	2002	2003	2004	2005
EU & West						
Austria	6	15	15	8	11	14
Belgium	46	44	53	47	38	51
Bulgaria	9	5	3	4	11	12
Cyprus	-	-	-	-	-	-
Czech Republic	1	0	0	0	1	1
Denmark	11	16	10	11	11	5
Estonia	0	1	2	7	10	8
Finland	3	3	9	3	6	4
France	296	318	342	322	263	219
Germany	67	55	64	61	86	53
Greece	22	16	8	22	14	11
Hungary	3	0	1	3	-	4
Ireland	0	2	7	3	13	8
Italy	171	180	168	173	180	159
Latvia	-	23	-	-	-	-
Lithuania	1	3	1	2	4	4
Luxembourg	1	1	0	-	0	2
Malta	0	-	0	0	-	-
Netherlands	-	-	-	-	-	-
Poland	29	33	27	30	34	22
Portugal	540	484	462	380	322	322
Romania	-	-	-	-	-	-
Slovakia	0	0	0	0	0	1
Slovenia	2	1	1	1	0	1
Spain	907	735	649	678	546	399
Sweden	9	8	12	5	9	9
United Kingdom	152	185	261	296	278	235
Andorra	-	-	-	-	-	-
Iceland	0	0	0	1	1	0
Israel	30	27	27	35	17	44
Monaco	0	0	0	0	-	-
Norway	9	6	10	12	-	-
San Marino	0	0	0	-	-	-
Switzerland	21	24	26	15	29	52
Balkans						
Albania	-	-	-	0	-	0
Bosnia & Herzegovina	2	-	-	1	2	1
Croatia	0	2	6	0	0	6
Macedonia, F.Y.R.	0	0	0	0	1	5
Montenegro †	-	-	-	-	-	-
Serbia †	11	8	8	12	8	16
Turkey	9	9	13	14	14	8
East						
Armenia	1	0	-	6	11	-
Azerbaijan	8	10	12	17	14	-
Belarus	0	1	7	11	31	36
Georgia	7	-	24	18	-	-
Kazakhstan	7	15	24	62	44	66
Kyrgyzstan	0	1	9	5	-	-
Moldova, Republic of	0	7	2	31	47	39
Russian Federation	-	-	-	-	-	-
Tajikistan	0	1	0	0	0	0
Turkmenistan	0	0	1	0	0	0
Ukraine	532	-	-	1 079	1 397	-
Uzbekistan	1	4	0	6	10	3

* Source: EuroHIV, European Non Aggregate AIDS Data Set (ENAADS), update December 2005, by year of diagnosis with adjustment for reporting delays (see EuroHIV reports. www.eurohiv.org). Excluding data for years for which specific diagnoses were reported for <80% of AIDS cases.

Table 18. Multidrug resistance (MDR) by previous anti-TB treatment history, WHO European Region, latest available data

Geographic area / Country	Source of data / coverage *	Year	Cases never treated			Cases previously treated		
			Cases with DST results	Multidrug resistant		Cases with DST results	Multidrug resistant	
				N	(%)		N	(%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases								
EU & West								
Austria	Case-linked data	2005	557	11	(2.0)	14	2	(14.3)
Belgium †	Case-linked data	2005	596	7	(1.2)	41	3	(7.3)
Cyprus	Case-linked data	2005	16	1	(0.0)	0	0	-
Denmark †	Case-linked data	2005	308	5	(1.6)	18	0	(0.0)
Estonia	Case-linked data	2005	316	42	(13.3)	71	37	(52.1)
Finland †	Case-linked data	2005	198	2	(1.0)	22	1	(4.5)
France	Sentinel hospital network	2005	1 291	14	(1.1)	112	8	(7.1)
Germany	Case-linked data	2005	2 991	55	(1.8)	245	29	(11.8)
Latvia	Case-linked data	2005	860	91	(10.6)	182	65	(35.7)
Lithuania	Case-linked data	2005	1 294	127	(9.8)	439	209	(47.6)
Luxembourg	Case-linked data	2005	36	0	(0.0)	0	0	-
Netherlands	Case-linked data	2005	644	3	(0.5)	27	0	(0.0)
Poland	Survey	2001	2 716	8	(0.3)	522	43	(8.2)
Romania	Survey	2003-2004	869	25	(2.9)	382	41	(10.7)
Slovenia	Case-linked data	2005	217	0	(0.0)	28	1	(3.6)
Sweden	Case-linked data	2005	427	2	(0.5)	17	2	(11.8)
United Kingdom †	Case-linked data	2005	3 352	23	(0.7)	270	7	(2.6)
Andorra	Case-linked data	2005	9	0	(0.0)	0	0	-
Iceland	Case-linked data	2005	7	0	(0.0)	1	0	(0.0)
Israel	All labs doing DST	2005	211	12	(5.7)	3	0	(0.0)
Norway	Case-linked data	2005	193	3	(1.6)	8	0	(0.0)
Switzerland	Case-linked data	2005	326	2	(0.6)	30	2	(6.7)
Balkans								
Bosnia & Herzegovina	All labs doing DST	2005	1 035	4	(0.4)	106	7	(6.6)
Croatia	Case-linked data	2005	581	4	(0.7)	59	3	(5.1)
Montenegro	NRL	2005	82	0	(0.0)	14	2	(14.3)
East								
Georgia	Survey	2005-2006	799	54	(6.8)	515	141	(27.4)
Kazakhstan	Survey ‡	2001	359	51	(14.2)	319	180	(56.4)
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)								
EU & West								
Bulgaria	Network of regional labs	2005	482	22	(4.6)	691	25	(3.6)
Czech Republic	Case-linked data	2005	466	5	(1.1)	17	5	(29.4)
Greece	Network of selected labs	2005	497	12	(2.4)	-	-	-
Hungary	Case-linked data	2005	442	13	(2.9)	88	13	(14.8)
Ireland	Case-linked data	2005	101	1	(1.0)	6	1	(16.7)
Italy	NRL + regional labs	2005	485	8	(1.6)	79	14	(17.7)
Malta	Case-linked data	2005	10	0	(0.0)	0	0	-
Portugal	Case-linked data	2005	998	12	(1.2)	102	11	(10.8)
Slovakia	Case-linked data	2005	248	4	(1.6)	56	4	(7.1)
Spain	NRL	2005	768	6	(0.8)	308	49	(15.9)
	Survey, Barcelona ‡	2001	133	1	(0.8)	32	4	(12.5)
	Survey, Galicia ‡	2001-2002	360	5	(1.4)	40	3	(7.5)
Balkans								
Albania	Case-linked data (partial coverage)	2005	161	0	(0.0)	12	1	(8.3)
Macedonia, F.Y.R.	Case-linked data	2005	106	0	(0.0)	19	4	(21.1)
Serbia †	Case-linked data (partial coverage)	2005	1 112	4	(0.4)	121	5	(4.1)
Turkey	Case-linked data	2005	3 237	101	(3.1)	508	90	(17.7)
East								
Armenia	NRL	2005	576	86	(14.9)	182	76	(41.8)
Azerbaijan	All labs doing DST	2003	600	8	(1.3)	-	-	-
Belarus	Coverage unknown	2000	2 060	220	(10.7)	-	-	-
Kazakhstan	All labs doing DST	2005	8 321	1 184	(14.2)	8 204	3 433	(41.8)
Kyrgyzstan	NRL (partial coverage)	2005	837	169	(20.2)	152	96	(63.2)
Moldova, Rep. of	All labs doing DST	2002	959	126	(13.1)	321	77	(24.0)
Russian Federation	Coverage unknown	1999	36 217	2 429	(6.7)	-	-	-
	Survey, Orel ‡	2002	379	10	(2.6)	210	89	(42.4)
	Survey, Tomsk ‡	2002	533	73	(13.7)	117	51	(43.6)
Turkmenistan	Survey, Dashoguz Velayat ‡	2001-2002	105	4	(3.8)	98	18	(18.4)
Ukraine	One lab, Kiev	1999	245	19	(7.8)	239	67	(28.0)
Uzbekistan	Survey, Karakalpakstan ‡	2001-2002	106	14	(13.2)	107	43	(40.2)

DST=Drug Susceptibility Testing

NRL=National Reference Laboratory

* Nationwide unless otherwise specified. Case-linked data means DST results provided to EuroTB as part of a case-based individual dataset

† Cases classified according to previous history of tuberculosis (see Technical Note)

‡ Source: WHO report "Anti-TB drug resistance in the world", N° 3, 2004. WHO/HTM/TB/2004.343

Table 19. Laboratory practices and quality assurance for anti-TB Drug Susceptibility Testing (DST), WHO European Region, 2005

Geographic area / Country	No. of labs performing:		DST methods					External quality assurance for DST					
								National *		International			
	Culture	DST	Non-radiometric proportion	Radiometric proportion	Resistance ratio	Absolute concentr.	Other		No. labs		Year	% agreement of results for:	
												Isoniazid	Rifampicin
EU & West													
Austria †	11	9	●	-	-	-	-	no	-	yes	2003	100	100
Belgium	155	19	●	●	-	-	●	yes	18	yes	2005	100	100
Bulgaria	31	18	●	●	-	-	●	no	-	no	-	-	-
Cyprus	1	0 ‡	-	-	-	-	●	no	-	no	-	-	-
Czech Republic	45	14	●	-	-	-	●	yes	14	yes	2006	100	100
Denmark	1	1	-	●	-	-	-	-	-	yes	2005	95	100
Estonia	3	2	-	-	-	-	●	no	-	yes	2005	90	95
Finland	15	2	●	-	-	-	●	no	-	yes	2005	100	90
France	310	110	●	●	-	-	●	yes	30	yes	2004	100	100
Germany	200	63	-	-	-	-	●	yes	63	yes	2005	97	97
Greece	54	3	●	-	-	-	●	no	-	no	-	-	-
Hungary †	20	13	●	-	-	-	●	no	-	yes	2003	100	95
Ireland	13	4	-	●	-	-	●	no	-	yes	2004	100	100
Italy	>200	>200	●	●	-	-	●	yes	20	yes	2005	100	100
Latvia	9	1	-	-	-	●	●	-	-	yes	2005	95	100
Lithuania	5	5	●	●	-	-	-	yes	4	yes	2005	100	95
Luxembourg	1	1	●	●	-	-	-	-	-	no	-	-	-
Malta †	1	0 ‡	-	-	-	-	-	-	-	-	-	-	-
Netherlands	43	15	●	●	-	●	-	no	-	yes	2006	100	100
Poland †	124	79	●	●	-	-	●	yes	all	yes	2004	-	-
Portugal	60	14	●	●	-	-	●	no	-	yes	2005	100	100
Romania	110	65	-	-	-	●	-	yes	20	yes	2005	100	90
Slovakia	16	6	●	-	-	-	●	no	-	yes	2003	90	90
Slovenia	5	1	●	-	-	-	●	-	-	yes	2005	100	100
Spain	-	~200	●	-	-	-	-	-	-	yes	2005	100	100
Sweden	5	5	-	-	-	-	●	yes	5	yes	2005	100	100
United Kingdom	~268	10 §	●	●	●	-	●	yes	7	yes	2004	100	96
Andorra	1	0 ‡	●	-	-	-	●	-	-	no	-	-	-
Iceland †	1	0 ‡	-	-	-	-	-	-	-	-	-	-	-
Israel	19	2	-	-	●	-	●	yes	2	yes	2005	100	100
Norway	13	3	-	●	-	-	●	yes	2	yes	2005	100	100
Switzerland	~35	~15	●	●	-	-	●	yes	10	yes	2005	100	100
Balkans													
Albania	3	1	●	-	-	-	-	-	-	yes	2005	100	100
Bosnia & Herzegovina	8	8	●	-	-	-	●	yes	8	yes	2005	-	-
Croatia	15	7	●	-	-	-	●	yes	7	yes	2005	100	100
Macedonia, F.Y.R.	4	1	●	-	-	-	-	-	-	no	-	-	-
Montenegro	1	1	●	-	-	-	-	-	-	no	-	-	-
Serbia	43	8	●	-	-	-	-	yes	4	yes	2005	100	70
Turkey	26	9	●	●	-	-	-	yes	5	yes	-	100	100
East													
Armenia	2	1	●	-	-	-	-	-	-	yes	2004	100	100
Azerbaijan †	7	7	-	-	-	●	-	no	-	no	-	-	-
Georgia	1	1	●	-	-	-	-	-	-	yes	2004	100	100
Kazakhstan	21	21	-	-	-	●	-	yes	20	yes	2002	100	100
Kyrgyzstan	3	1	-	-	-	●	-	-	-	yes	2005	100	100
Uzbekistan	2	2	●	-	-	-	-	yes	2	yes	2005	97	97

* For countries with more than one DST laboratory
† Information from 2004
‡ DST done abroad (EU country)
§ Including Scotland (1 DST lab)

Table 20. Characteristics of anti-TB drug resistance surveillance, WHO European Region, 2005

Geographic area				Cases included		
Country	Source of data *	Geographic coverage	Culture confirmed cases (%) †	Total culture positive †	DST results (Isoniazid & Rifampicin)	
					N	(%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases						
EU & West						
Austria	Case-linked data	national	66%	634	590	(93)
Belgium	Case-linked data	national	74%	849	768	(90)
Cyprus	Case-linked data	national	51%	19	17	(89)
Denmark	Case-linked data	national	77%	326	326	(100)
Estonia	Case-linked data	national	75%	390	387	(99)
Finland	Case-linked data	national	88%	316	315	(100)
France	Sentinel hospital network	national	-	1 515	1 501	(99)
Germany	Case-linked data	national	67%	4 058	3 779	(93)
Latvia	Case-linked data	national	76%	1 096	1 042	(95)
Lithuania	Case-linked data	national	68%	1 739	1 739	(100)
Luxembourg	Case-linked data	national	100%	37	37	(100)
Netherlands	Case-linked data	national	65%	758	758	(100)
Romania	Survey (2003-2004)	national	-	-	1 251	-
Slovenia	Case-linked data	national	88%	245	245	(100)
Sweden	Case-linked data	national	78%	446	444	(100)
United Kingdom	Case-linked data	national	60%	5 086	4 666	(92)
Andorra	Case-linked data	national	90%	9	9	(100)
Iceland	Case-linked data	national	73%	8	8	(100)
Israel	All labs doing DST	national	53%	217	217	(100)
Norway	Case-linked data	national	74%	214	214	(100)
Switzerland	Case-linked data	national	82%	463	457	(99)
Balkans						
Bosnia & Herzegovina	All labs doing DST	national	53%	1 142	1 141	(100)
Croatia	Case-linked data	national	56%	640	640	(100)
Montenegro	NRL	national	63%	107	100	(93)
East						
Georgia	Survey (2005-2006)	national	-	1 422	1 422	(100)
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)						
EU & West						
Bulgaria	Network of regional labs	partial	47%	1 173	1 173	(100)
Czech Republic	Case-linked data	national	64%	645	483	(75)
Greece	Network of selected labs	national	78%	600	600	(100)
Hungary	Case-linked data	national	39%	784	536	(68)
Ireland	Case-linked data	national	44%	205	146	(71)
Italy	NRL + regional labs	partial	-	585	585	(100)
Malta	Case-linked data	national	43%	10	10	(100)
Portugal	Case-linked data	national	51%	1 813	1 100	(61)
Slovakia	Case-linked data	national	47%	357	311	(87)
Spain	NRL	national	-	1 711	1 711	(100)
Balkans						
Albania	Case-linked data	partial	-	196	173	(88)
Macedonia, F.Y.R.	Case-linked data	national	24%	160	125	(78)
Serbia	Case-linked data	partial	-	1 233	1 233	(100)
Turkey	Case-linked data	national	28%	5 793	3 745	(65)
East						
Armenia	NRL	national	-	795	758	(95)
Kazakhstan	All labs doing DST	national	-	-	16 525	-
Kyrgyzstan	NRL	partial	-	993	993	(100)

DST=Drug Susceptibility Testing

NRL=National Reference Laboratory

* Case-linked data means DST results provided to EuroTB as part of a case-based individual dataset; otherwise submitted as aggregate tables

† In areas included in drug-resistance surveillance; may differ from data shown elsewhere in this report

Table 21. Anti-TB drug resistance, all tuberculosis cases (combined resistance), WHO European Region, 2005

Geographic area Country	Cases with DST results	Cases resistant to at least: Isoniazid N	Isoniazid (%)	Rifampicin N	Rifampicin (%)	Isoniazid & Rifampicin (multidrug resistant) N	Isoniazid & Rifampicin (multidrug resistant) (%)	Ethambutol * N	Ethambutol * (%)	Streptomycin * N	Streptomycin * (%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases											
EU & West											
Austria	590	57	(9.7)	16	(2.7)	13	(2.2)	10	(1.7)	41	(6.9)
Belgium	768	42	(5.5)	13	(1.7)	11	(1.4)	14	(1.8)	-	-
Cyprus	17	6	(35.3)	1	(5.9)	1	(5.9)	0	(0.0)	3	(17.6)
Denmark	326	18	(5.5)	5	(1.5)	5	(1.5)	7	(2.1)	-	-
Estonia	387	108	(27.9)	79	(20.4)	79	(20.4)	77	(19.9)	124	(32.0)
Finland	315	11	(3.5)	4	(1.3)	3	(1.0)	4	(1.3)	3	(1.0)
France	1 501	94	(6.3)	26	(1.7)	24	(1.6)	13	(0.9)	80	(5.3)
Germany	3 779	315	(8.3)	114	(3.0)	101	(2.7)	88	(2.3)	325	(8.6)
Latvia	1 042	354	(34.0)	156	(15.0)	156	(15.0)	151	(14.5)	359	(34.5)
Lithuania	1 739	514	(29.6)	342	(19.7)	338	(19.4)	475	(27.3)	204	(11.7)
Luxembourg	37	3	(8.1)	0	(0.0)	0	(0.0)	0	(0.0)	2	(5.4)
Netherlands	758	41	(5.4)	6	(0.8)	3	(0.4)	3	(0.4)	0	(0.0)
Romania †	1 251	179	(14.3)	90	(7.2)	66	(5.3)	74	(5.9)	139	(11.1)
Slovenia	245	10	(4.1)	1	(0.4)	1	(0.4)	1	(0.4)	7	(2.9)
Sweden	444	46	(10.4)	5	(1.1)	4	(0.9)	3	(0.7)	-	-
United Kingdom	4 666	322	(6.9)	105	(2.3)	39	(0.8)	16	(0.3)	-	-
Andorra	9	1	(11.1)	0	(0.0)	0	(0.0)	0	(0.0)	1	(11.1)
Iceland	8	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	-	-
Israel	217	32	(14.7)	12	(5.5)	12	(5.5)	13	(6.0)	41	(18.9)
Norway	214	21	(9.8)	3	(1.4)	3	(1.4)	4	(1.9)	31	(14.5)
Switzerland	457	23	(5.0)	6	(1.3)	5	(1.1)	2	(0.4)	-	-
Balkans											
Bosnia & Herzegovina	1 141	22	(1.9)	21	(1.8)	11	(1.0)	-	-	-	-
Croatia	640	16	(2.5)	9	(1.4)	7	(1.1)	6	(0.9)	13	(2.0)
Montenegro	100	2	(2.0)	7	(7.0)	2	(2.0)	0	(0.0)	-	-
East											
Georgia	1 422	474	(33.3)	233	(16.4)	219	(15.4)	106	(7.5)	691	(48.6)
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)											
EU & West											
Bulgaria	1 173	133	(11.3)	76	(6.5)	47	(4.0)	65	(5.5)	73	(6.2)
Czech Republic	483	19	(3.9)	10	(2.1)	10	(2.1)	8	(1.7)	21	(4.3)
Greece	600	40	(6.7)	22	(3.7)	12	(2.0)	22	(3.7)	62	(10.3)
Hungary	536	56	(10.4)	32	(6.0)	26	(4.9)	-	-	46	(8.6)
Ireland	146	6	(4.1)	3	(2.1)	3	(2.1)	2	(1.4)	-	-
Italy	585	57	(9.7)	26	(4.4)	22	(3.8)	13	(2.2)	52	(8.9)
Malta	10	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	2	(20.0)
Portugal	1 100	78	(7.1)	24	(2.2)	23	(2.1)	16	(1.5)	124	(11.3)
Slovakia	311	23	(7.4)	11	(3.5)	8	(2.6)	1	(0.3)	13	(4.2)
Spain	1 711	171	(10.0)	95	(5.6)	80	(4.7)	26	(1.5)	51	(3.0)
Balkans											
Albania	173	10	(5.8)	3	(1.7)	1	(0.6)	4	(2.3)	20	(11.6)
Macedonia, F.Y.R.	125	7	(5.6)	7	(5.6)	4	(3.2)	2	(1.6)	9	(7.2)
Serbia	1 233	16	(1.3)	17	(1.4)	9	(0.7)	13	(1.1)	28	(2.3)
Turkey	3 745	430	(11.5)	251	(6.7)	191	(5.1)	148	(4.0)	304	(8.1)
East											
Armenia	758	309	(40.8)	173	(22.8)	162	(21.4)	-	-	-	-
Kazakhstan	16 525	8 317	(50.3)	5 090	(30.8)	4 617	(27.9)	4 572	(27.7)	9 018	(54.6)
Kyrgyzstan	993	458	(46.1)	280	(28.2)	266	(26.8)	-	-	-	-

DST=Drug Susceptibility Testing

* Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin

† Data from DST survey in 2003-4

Table 22. Anti-TB drug resistance, previously untreated tuberculosis cases (primary resistance), WHO European Region, 2005

Geographic area	Cases with DST results	Cases resistant to at least: Isoniazid		Rifampicin		Isoniazid & Rifampicin (multidrug resistant)		Ethambutol *		Streptomycin *	
Country		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases											
EU & West											
Austria	557	54	(9.7)	14	(2.5)	11	(2.0)	9	(1.6)	39	(7.0)
Belgium †	596	29	(4.9)	9	(1.5)	7	(1.2)	8	(1.3)	-	-
Cyprus	16	6	(37.5)	1	(6.3)	1	(6.3)	0	(0.0)	2	(12.5)
Denmark †	308	15	(4.9)	5	(1.6)	5	(1.6)	6	(1.9)	-	-
Estonia	316	65	(20.6)	42	(13.3)	42	(13.3)	42	(13.3)	83	(26.3)
Finland †	198	7	(3.5)	2	(1.0)	2	(1.0)	2	(1.0)	1	(0.5)
France	1 291	71	(5.5)	15	(1.2)	14	(1.1)	9	(0.7)	60	(4.6)
Germany	2 991	218	(7.3)	65	(2.2)	55	(1.8)	52	(1.7)	223	(7.5)
Latvia	860	264	(30.7)	91	(10.6)	91	(10.6)	89	(10.3)	267	(31.0)
Lithuania	1 294	262	(20.2)	129	(10.0)	127	(9.8)	234	(18.1)	62	(4.8)
Luxembourg	36	3	(8.3)	0	(0.0)	0	(0.0)	0	(0.0)	2	(5.6)
Netherlands	644	36	(5.6)	5	(0.8)	3	(0.5)	3	(0.5)	0	(0.0)
Romania ‡	869	72	(8.3)	42	(4.8)	25	(2.9)	20	(2.3)	66	(7.6)
Slovenia	217	7	(3.2)	0	(0.0)	0	(0.0)	0	(0.0)	4	(1.8)
Sweden	427	42	(9.8)	3	(0.7)	2	(0.5)	2	(0.5)	-	-
United Kingdom †	3 352	228	(6.8)	72	(2.1)	23	(0.7)	13	(0.4)	-	-
Andorra	9	1	(11.1)	0	(0.0)	0	(0.0)	0	(0.0)	1	(11.1)
Iceland	7	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	-	-
Israel	211	32	(15.2)	12	(5.7)	12	(5.7)	13	(6.2)	41	(19.4)
Norway	193	20	(10.4)	3	(1.6)	3	(1.6)	4	(2.1)	31	(16.1)
Switzerland	326	14	(4.3)	3	(0.9)	2	(0.6)	0	(0.0)	-	-
Balkans											
Bosnia & Herzegovina	1 035	8	(0.8)	7	(0.7)	4	(0.4)	-	-	-	-
Croatia	581	13	(2.2)	6	(1.0)	4	(0.7)	3	(0.5)	8	(1.4)
Montenegro	82	0	(0.0)	2	(2.4)	0	(0.0)	0	(0.0)	-	-
East											
Georgia	799	187	(23.4)	61	(7.6)	54	(6.8)	33	(4.1)	330	(41.3)
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)											
EU & West											
Bulgaria	482	84	(17.4)	41	(8.5)	22	(4.6)	44	(9.1)	45	(9.3)
Czech Republic	466	13	(2.8)	5	(1.1)	5	(1.1)	3	(0.6)	14	(3.0)
Greece	497	32	(6.4)	21	(4.2)	12	(2.4)	20	(4.0)	49	(9.9)
Hungary	442	38	(8.6)	18	(4.1)	13	(2.9)	-	-	30	(6.8)
Ireland	101	1	(1.0)	1	(1.0)	1	(1.0)	1	(1.0)	-	-
Italy	485	30	(6.2)	11	(2.3)	8	(1.6)	4	(0.8)	29	(6.0)
Malta	10	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	2	(20.0)
Portugal	998	65	(6.5)	12	(1.2)	12	(1.2)	12	(1.2)	113	(11.3)
Slovakia	248	13	(5.2)	7	(2.8)	4	(1.6)	0	(0.0)	9	(3.6)
Spain	768	48	(6.3)	8	(1.0)	6	(0.8)	2	(0.3)	12	(1.6)
Balkans											
Albania	161	8	(5.0)	1	(0.6)	0	(0.0)	3	(1.9)	19	(11.8)
Macedonia, F.Y.R.	106	3	(2.8)	2	(1.9)	0	(0.0)	0	(0.0)	4	(3.8)
Serbia †	1 112	9	(0.8)	9	(0.8)	4	(0.4)	7	(0.6)	22	(2.0)
Turkey	3237	291	(9.0)	144	(4.4)	101	(3.1)	97	(3.0)	227	(7.0)
East											
Armenia	576	196	(34.0)	95	(16.5)	86	(14.9)	-	-	-	-
Kazakhstan	8 321	2 932	(35.2)	1 422	(17.1)	1 184	(14.2)	1 367	(16.4)	3 376	(40.6)
Kyrgyzstan	837	340	(40.6)	181	(21.6)	169	(20.2)	-	-	-	-

DST=Drug Susceptibility Testing

* Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin

† Cases classified according to TB history (see Technical Note)

‡ Data from DST survey in 2003-4

Table 23. Combined anti-TB drug resistance, tuberculosis cases of national origin, WHO European Region, 2005

Geographic area	Criterion	Cases with DST results	Cases resistant to at least:									
			Isoniazid		Rifampicin		Isoniazid & Rifampicin (multidrug resistant)		Ethambutol *		Streptomycin *	
Country			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases												
EU & West												
Austria	**citizenship**	343	8	(2.3)	1	(0.3)	1	(0.3)	1	(0.3)	9	(2.6)
Belgium	**citizenship**	389	15	(3.9)	6	(1.5)	5	(1.3)	10	(2.6)	-	-
Cyprus	birthplace	3	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(33.3)
Denmark †	birthplace	137	5	(3.6)	2	(1.5)	2	(1.5)	1	(0.7)	-	-
Estonia	birthplace	321	91	(28.3)	64	(19.9)	64	(19.9)	65	(20.2)	103	(32.1)
Finland	birthplace	264	5	(1.9)	2	(0.8)	1	(0.4)	2	(0.8)	0	(0.0)
France	birthplace	654	16	(2.4)	4	(0.6)	3	(0.5)	1	(0.2)	21	(3.2)
Germany	birthplace	1 938	78	(4.0)	23	(1.2)	18	(0.9)	20	(1.0)	75	(3.9)
Latvia	birthplace	977	330	(33.8)	145	(14.8)	145	(14.8)	141	(14.4)	334	(34.2)
Lithuania	birthplace	1 684	495	(29.4)	328	(19.5)	324	(19.2)	460	(27.3)	194	(11.5)
Luxembourg	birthplace	9	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	birthplace	227	12	(5.3)	0	(0.0)	0	(0.0)	1	(0.4)	0	(0.0)
Romania ‡	birthplace	1 251	179	(14.3)	90	(7.2)	66	(5.3)	74	(5.9)	139	(11.1)
Slovenia	birthplace	199	7	(3.5)	0	(0.0)	0	(0.0)	1	(0.5)	6	(3.0)
Sweden	birthplace	104	9	(8.7)	0	(0.0)	0	(0.0)	0	(0.0)	-	-
United Kingdom	birthplace	1 107	75	(6.8)	14	(1.3)	7	(0.6)	2	(0.2)	-	-
Andorra	birthplace	2	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Iceland	birthplace	3	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	-	-
Israel	birthplace	23	4	(17.4)	1	(4.3)	1	(4.3)	1	(4.3)	7	(30.4)
Norway	birthplace	44	2	(4.5)	0	(0.0)	0	(0.0)	1	(2.3)	2	(4.5)
Switzerland	birthplace	123	3	(2.4)	2	(1.6)	1	(0.8)	1	(0.8)	-	-
Balkans												
Bosnia & Herzegovina	**citizenship**	1 141	22	(1.9)	21	(1.8)	11	(1.0)	-	-	-	-
Croatia	birthplace	376	7	(1.9)	6	(1.6)	4	(1.1)	4	(1.1)	9	(2.4)
Montenegro	**citizenship**	100	2	(2.0)	7	(7.0)	2	(2.0)	0	(0.0)	-	-
East												
Georgia	**citizenship**	1 422	474	(33.3)	233	(16.4)	219	(15.4)	106	(7.5)	691	(48.6)
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)												
EU & West												
Bulgaria	**citizenship**	1 173	133	(11.3)	76	(6.5)	47	(4.0)	65	(5.5)	73	(6.2)
Czech Republic	birthplace	441	10	(2.3)	5	(1.1)	5	(1.1)	5	(1.1)	12	(2.7)
Greece	birthplace	405	26	(6.4)	12	(3.0)	7	(1.7)	14	(3.5)	39	(9.6)
Hungary	birthplace	497	50	(10.1)	30	(6.0)	24	(4.8)	-	-	41	(8.2)
Ireland	birthplace	97	1	(1.0)	1	(1.0)	1	(1.0)	0	(0.0)	-	-
Italy	birthplace	277	23	(8.3)	10	(3.6)	7	(2.5)	5	(1.8)	22	(7.9)
Malta	**citizenship**	3	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Portugal	birthplace	952	68	(7.1)	23	(2.4)	22	(2.3)	16	(1.7)	104	(10.9)
Slovakia	birthplace	301	23	(7.6)	11	(3.7)	8	(2.7)	1	(0.3)	13	(4.3)
Spain	birthplace	1 178	95	(8.1)	47	(4.0)	34	(2.9)	8	(0.7)	21	(1.8)
Balkans												
Albania	**citizenship**	171	10	(5.8)	3	(1.8)	1	(0.6)	4	(2.3)	20	(11.7)
Macedonia, F.Y.R.	**citizenship**	125	7	(5.6)	7	(5.6)	4	(3.2)	2	(1.6)	9	(7.2)
Serbia	**citizenship**	1 204	16	(1.3)	16	(1.3)	9	(0.7)	12	(1.0)	28	(2.3)
Turkey	**citizenship**	3 728	427	(11.5)	249	(6.7)	189	(5.1)	148	(4.0)	300	(8.0)
East												
Armenia	**citizenship**	750	308	(41.1)	172	(22.9)	161	(21.5)	-	-	-	-
Kazakhstan	**citizenship**	16 525	8 317	(50.3)	5 090	(30.8)	4 617	(27.9)	4 572	(27.7)	9 018	(54.6)
Kyrgyzstan	**citizenship**	993	458	(46.1)	280	(28.2)	266	(26.8)	-	-	-	-

DST=Drug Susceptibility Testing

* Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin

† By birthplace of parents for Danish born cases < 26 years of age

‡ Data from DST survey in 2003-4

Table 24. Combined anti-TB drug resistance, tuberculosis cases of foreign origin, WHO European Region, 2005

Geographic area	Criterion	Cases with DST results	Cases resistant to at least: Isoniazid		Rifampicin		Isoniazid & Rifampicin (multidrug resistant)		Ethambutol *		Streptomycin *	
Country			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases												
EU & West												
Austria	**citizenship**	247	49	(19.8)	15	(6.1)	12	(4.9)	9	(3.6)	32	(13.0)
Belgium	**citizenship**	379	27	(7.1)	7	(1.8)	6	(1.6)	4	(1.1)	-	-
Cyprus	birthplace	14	6	(42.9)	1	(7.1)	1	(7.1)	0	(0.0)	2	(14.3)
Denmark †	birthplace	189	13	(6.9)	3	(1.6)	3	(1.6)	6	(3.2)	-	-
Estonia	birthplace	66	17	(25.8)	15	(22.7)	15	(22.7)	12	(18.2)	21	(31.8)
Finland	birthplace	35	4	(11.4)	0	(0.0)	0	(0.0)	0	(0.0)	1	(2.9)
France	birthplace	797	78	(9.8)	22	(2.8)	21	(2.6)	12	(1.5)	57	(7.2)
Germany	birthplace	1 741	230	(13.2)	87	(5.0)	81	(4.7)	65	(3.7)	240	(13.8)
Latvia	birthplace	65	24	(36.9)	11	(16.9)	11	(16.9)	10	(15.4)	25	(38.5)
Lithuania	birthplace	55	19	(34.5)	14	(25.5)	14	(25.5)	15	(27.3)	10	(18.2)
Luxembourg	birthplace	25	3	(12.0)	0	(0.0)	0	(0.0)	0	(0.0)	2	(8.0)
Netherlands	birthplace	527	28	(5.3)	6	(1.1)	3	(0.6)	2	(0.4)	0	(0.0)
Romania ‡	birthplace	0	-	-	-	-	-	-	-	-	-	-
Slovenia	birthplace	46	3	(6.5)	1	(2.2)	1	(2.2)	0	(0.0)	1	(2.2)
Sweden	birthplace	340	37	(10.9)	5	(1.5)	4	(1.2)	3	(0.9)	-	-
United Kingdom	birthplace	3 111	221	(7.1)	83	(2.7)	30	(1.0)	11	(0.4)	-	-
Andorra	birthplace	7	1	(14.3)	0	(0.0)	0	(0.0)	0	(0.0)	1	(14.3)
Iceland	birthplace	5	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	-	-
Israel	birthplace	194	28	(14.4)	11	(5.7)	11	(5.7)	12	(6.2)	34	(17.5)
Norway	birthplace	170	19	(11.2)	3	(1.8)	3	(1.8)	3	(1.8)	29	(17.1)
Switzerland	birthplace	275	19	(6.9)	3	(1.1)	3	(1.1)	1	(0.4)	-	-
Balkans												
Bosnia & Herzegovina	**citizenship**	0	-	-	-	-	-	-	-	-	-	-
Croatia	birthplace	82	2	(2.4)	0	(0.0)	0	(0.0)	0	(0.0)	1	(1.2)
Montenegro	**citizenship**	0	-	-	-	-	-	-	-	-	-	-
East												
Georgia	**citizenship**	0	-	-	-	-	-	-	-	-	-	-
Group B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)												
EU & West												
Bulgaria	**citizenship**	0	-	-	-	-	-	-	-	-	-	-
Czech Republic	birthplace	42	9	(21.4)	5	(11.9)	5	(11.9)	3	(7.1)	9	(21.4)
Greece	birthplace	195	14	(7.2)	10	(5.1)	5	(2.6)	8	(4.1)	23	(11.8)
Hungary	birthplace	20	3	(15.0)	1	(5.0)	1	(5.0)	-	-	3	(15.0)
Ireland	birthplace	39	5	(12.8)	2	(5.1)	2	(5.1)	2	(5.1)	-	-
Italy	birthplace	307	34	(11.1)	16	(5.2)	15	(4.9)	8	(2.6)	30	(9.8)
Malta	**citizenship**	7	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	2	(28.6)
Portugal	birthplace	135	10	(7.4)	1	(0.7)	1	(0.7)	0	(0.0)	18	(13.3)
Slovakia	birthplace	10	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Spain	birthplace	533	76	(14.3)	48	(9.0)	46	(8.6)	18	(3.4)	30	(5.6)
Balkans												
Albania	**citizenship**	2	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Macedonia, F.Y.R.	**citizenship**	0	-	-	-	-	-	-	-	-	-	-
Serbia	**citizenship**	29	0	(0.0)	1	(3.4)	0	(0.0)	1	(3.4)	0	(0.0)
Turkey	**citizenship**	17	3	(17.6)	2	(11.8)	2	(11.8)	0	(0.0)	4	(23.5)
East												
Armenia	**citizenship**	8	1	(12.5)	1	(12.5)	1	(12.5)	-	-	-	-
Kazakhstan	**citizenship**	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	**citizenship**	-	-	-	-	-	-	-	-	-	-	-

DST=Drug Susceptibility Testing

* Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin

† By birthplace of parents for Danish born cases < 26 years of age

‡ Data from DST survey in 2003-4

Table 25. Combined multidrug resistance (MDR) by geographic origin, WHO European Region, 2001-2005 *

Geographic area	2001		2002		2003		2004		2005	
Country	N	(%)†	N	(%)†	N	(%)†	N	(%)†	N	(%)†
A. National origin										
EU & West										
Austria	2	(0.4)	0	(0.0)	2	(0.5)	0	(0.0)	1	(0.3)
Belgium	5	(1.3)	3	(0.8)	2	(0.6)	1	(0.2)	5	(1.3)
Cyprus	-	-	-	-	-	-	0	(0.0)	0	(0.0)
Czech Republic	5	(0.8)	8	(1.8)	1	(0.2)	-	-	-	-
Denmark	0	(0.0)	1	(0.9)	0	(0.0)	0	(0.0)	2	(1.5)
Estonia	125	(27.6)	116	(27.3)	82	(22.2)	70	(20.4)	64	(19.9)
Finland	0	(0.0)	1	(0.3)	1	(0.3)	0	(0.0)	1	(0.4)
Germany	20	(1.0)	17	(0.7)	13	(0.5)	10	(0.5)	18	(0.9)
Ireland	1	(1.2)	0	(0.0)	0	(0.0)	1	(0.6)	-	-
Latvia	141	(13.8)	216	(18.7)	163	(14.6)	179	(17.7)	145	(14.8)
Lithuania	251	(18.3)	282	(22.0)	285	(21.5)	300	(19.6)	324	(19.2)
Luxembourg	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Malta	0	(0.0)	0	(0.0)	-	-	-	-	-	-
Netherlands	0	(0.0)	1	(0.3)	3	(1.2)	0	(0.0)	0	(0.0)
Slovakia	5	(0.9)	3	(0.6)	-	-	1	(0.3)	-	-
Slovenia	2	(0.9)	1	(0.4)	1	(0.5)	0	(0.0)	0	(0.0)
Sweden	2	(1.8)	1	(1.0)	1	(1.1)	0	(0.0)	0	(0.0)
United Kingdom	5	(0.5) ‡	3	(0.3) ‡	6	(0.6)	9	(0.8)	7	(0.6)
Andorra	-	-	0	(0.0)	-	-	0	-	0	(0.0)
Iceland	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Israel	1	(3.1)	3	(6.8)	1	(2.5)	0	(0.0)	1	(4.3)
Norway	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Switzerland	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.9)	1	(0.8)
Balkans										
Bosnia & Herzegovina	2	(0.2)	4	(0.4) §	2	(0.2) §	10	(0.9) §	11	(1.0)
Croatia	4	(0.7)	5	(0.9)	5	(0.9)	-	-	4	(1.1)

	2001		2002		2003		2004		2005	
	N	(%)†	N	(%)†	N	(%)†	N	(%)†	N	(%)†
B. Foreign origin										
EU & West										
Austria	3	(1.9)	3	(1.6)	10	(4.9)	19	(7.8)	12	(4.9)
Belgium	13	(3.6)	18	(4.4)	7	(1.6)	11	(2.4)	6	(1.6)
Cyprus	-	-	-	-	-	-	0	(0.0)	1	(7.1)
Czech Republic	4	(6.1)	2	(3.8)	1	(2.1)	-	-	-	-
Denmark	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	3	(1.6)
Estonia	33	(26.0)	22	(20.6)	24	(25.3)	20	(18.7)	15	(22.7)
Finland	2	(3.7)	2	(5.1)	1	(2.8)	0	(0.0)	0	(0.0)
Germany	77	(5.2)	76	(4.0)	77	(4.0)	91	(4.8)	81	(4.7)
Ireland	0	(0.0)	0	(0.0)	1	(1.8)	1	(1.2)	-	-
Latvia	9	(12.3)	10	(12.0)	11	(15.1)	16	(18.4)	11	(16.9)
Lithuania	15	(19.0)	15	(25.0)	27	(36.5)	18	(30.0)	14	(25.5)
Luxembourg	0	(0.0)	0	(0.0)	1	(2.8)	1	(4.0)	0	(0.0)
Malta	0	(0.0)	0	(0.0)	-	-	-	-	-	-
Netherlands	2	(0.6)	1	(0.2)	5	(1.4)	3	(0.7)	3	(0.6)
Slovakia	1	(12.5)	0	(0.0)	-	-	0	(0.0)	-	-
Slovenia	1	(1.3)	1	(1.6)	0	(0.0)	0	(0.0)	1	(2.2)
Sweden	2	(0.8)	3	(1.2)	6	(2.3)	6	(2.2)	4	(1.2)
United Kingdom	18	(1.0) ‡	24	(1.0) ‡	38	(1.5)	30	(1.1)	30	(1.0)
Andorra	-	-	0	(0.0)	-	-	0	(0.0)	0	(0.0)
Iceland	0	(0.0)	0	(0.0)	1	(50.0)	0	(0.0)	0	(0.0)
Israel	21	(7.4)	14	(4.7)	19	(6.9)	12	(5.3)	11	(5.7)
Norway	5	(3.2)	7	(4.7)	3	(1.3)	4	(2.1)	3	(1.8)
Switzerland	7	(2.5)	10	(3.2)	11	(3.7)	4	(1.4)	3	(1.1)
Balkans										
Bosnia & Herzegovina	0	(0.0)	0	(0.0) §	0	- §	0	- §	0	-
Croatia	0	(0.0)	1	(0.7)	0	(0.0)	-	-	0	(0.0)

* Including countries with nationwide, representative data for two years or more (absence of representative data indicated with a dash)

† As a proportion of all cases with susceptibility results for isoniazid and rifampicin

‡ Excluding Scotland

§ Federation of Bosnia only

Table 26. Characteristics of treatment outcome monitoring (TOM) and treatment success, WHO European Region, 2004

Geographic area				Total definite pulmonary cases			
Country	Geographic coverage	Type of data *	Type of cohort	Notified in TOM areas †	Included in TOM cohorts		Overall treatment success
					N	(%) ‡	
Group A. Complete cohorts with nationwide coverage							
EU & West							
Austria	national	case-linked	culture	584	584	-	69%
Belgium	national	case-linked	culture	718	718	-	70%
Bulgaria	national	aggregate	smear and/or culture	1 417	1 417	100%	78%
Czech Republic	national	case-linked	culture	562	562	-	69%
Denmark	national	case-linked	culture	219	219	-	84%
Estonia	national	case-linked	culture	426	426	-	63%
Germany	national	case-linked	culture	3 518	3 518	-	68%
Hungary	national	case-linked	culture	953	953	-	53%
Ireland	national	case-linked	culture	225	225	-	67%
Latvia	national	case-linked	culture	1 086	1 086	-	69%
Lithuania	national	case-linked	culture	1 545	1 545	-	62%
Malta	national	case-linked	culture	5	5	-	100%
Netherlands	national	case-linked	culture	510	510	-	84%
Poland	national	case-linked	culture	4 860	4 860	-	74%
Portugal	national	case-linked	culture	2 113	2 113	-	84%
Romania	national	case-linked	culture	18 287	18 287	-	72%
Slovakia	national	case-linked	culture	323	323	-	87%
Slovenia	national	case-linked	culture	194	194	-	86%
Sweden	national	aggregate	smear	126	122	97%	64%
United Kingdom	national	case-linked	culture	3 166	3 166	-	66%
Andorra	national	case-linked	culture	4	4	-	75%
Iceland	national	case-linked	culture	4	4	-	75%
Israel	national	aggregate	culture	206	274	133%	80%
Norway	national	case-linked	culture	159	159	-	84%
Balkans							
Albania	national	case-linked	smear	220	220	-	75%
Macedonia, F.Y.R.	national	aggregate	smear	248	244	98%	85%
East							
Azerbaijan	national	aggregate	smear	2 563	4 437	173%	48%
Belarus	national	aggregate	new smear and/or culture	2 287	2 284	100%	74%
Georgia	national	aggregate	smear	2 293	2 240	98%	56%
Kazakhstan	national	aggregate	new & relapse smear	11 078	11 053	100%	68%
Kyrgyzstan	national	aggregate	new & relapse smear	2 114	2 114	100%	83%
Moldova, Rep. of	national	aggregate	new & relapse smear	2 307	2 757	120%	57%
Tajikistan	national	aggregate	new & relapse smear	1 119	1 116	100%	56%
Group B. Incomplete cohorts or partial geographic coverage							
EU & West							
Cyprus	national	case-linked	culture	19	19	-	37%
Balkans							
Bosnia & Herzegovina	national	aggregate	culture	1 668	1 122	67%	98%
Croatia	national	case-linked	culture	717	717	-	42%
Serbia	Belgrade region	aggregate	smear and/or culture	-	347	-	86%
Turkey	national	aggregate	smear and/or culture	-	5 854	-	85%
East							
Armenia	DOTS areas	aggregate	new & relapse smear	563	563	100%	67%
Russian Federation	DOTS areas	aggregate	new & relapse smear	12 114	10 119	84%	53%
Uzbekistan	DOTS areas	aggregate	smear	5 960	5 931	100%	74%

DOTS areas = units following the WHO-recommended TB control strategy

* Case-linked data means outcome results provided to EuroTB as part of a case-based individual dataset

† Notifications in 2004 may differ from those shown elsewhere in this report

‡ Not shown for countries with complete case-based outcome data (100% by definition); may exceed 100% in countries with aggregate data, due to updates of culture or smear results

Table 27. Treatment outcome, new definite pulmonary tuberculosis cases, WHO European Region, 2004

Geographic area	Cohort	Total included	Success		Died		Failed		Still on treatment		Defaulted, transferred or unknown	
Country			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A) Complete cohorts with nationwide coverage												
EU & West												
Austria	culture	549	382	(70)	49	(9)	0	(0)	32	(6)	86	(16)
Belgium *	culture	520	380	(73)	48	(9)	1	(0)	13	(3)	78	(15)
Bulgaria	smear/culture	1 315	1 047	(80)	42	(3)	48	(4)	5	(0)	173	(13)
Czech Republic	culture	549	381	(69)	36	(7)	1	(0)	37	(7)	94	(17)
Denmark *	culture	201	171	(85)	13	(6)	1	(0)	1	(0)	15	(7)
Estonia	culture	336	239	(71)	36	(11)	1	(0)	36	(11)	24	(7)
Germany	culture	2 767	1 958	(71)	304	(11)	5	(0)	158	(6)	342	(12)
Hungary	culture	787	438	(56)	97	(12)	84	(11)	90	(11)	78	(10)
Ireland *	culture	162	124	(77)	6	(4)	1	(1)	5	(3)	26	(16)
Latvia	culture	857	643	(75)	59	(7)	4	(0)	95	(11)	56	(7)
Lithuania	culture	1 090	813	(75)	87	(8)	29	(3)	61	(6)	100	(9)
Malta	culture	5	5	(100)	0	(0)	0	(0)	0	(0)	0	(0)
Netherlands	culture	436	368	(84)	27	(6)	0	(0)	0	(0)	41	(9)
Poland *	culture	4 246	3 358	(79)	254	(6)	34	(1)	13	(0)	587	(14)
Portugal	culture	1 870	1 603	(86)	84	(4)	6	(0)	53	(3)	124	(7)
Romania	culture	12 937	10 622	(82)	566	(4)	485	(4)	254	(2)	1 010	(8)
Slovakia	culture	271	236	(87)	18	(7)	1	(0)	1	(0)	15	(6)
Slovenia	culture	169	150	(89)	13	(8)	1	(1)	1	(1)	4	(2)
Sweden	smear	115	74	(64)	10	(9)	1	(1)	2	(2)	28	(24)
United Kingdom *	culture	2 237	1 538	(69)	113	(5)	0	(0)	91	(4)	495	(22)
Andorra	culture	4	3	(75)	0	(0)	0	(0)	0	(0)	1	(25)
Iceland	culture	4	3	(75)	1	(25)	0	(0)	0	(0)	0	(0)
Israel	culture	262	210	(80)	27	(10)	1	(0)	5	(2)	19	(7)
Norway	culture	143	121	(85)	12	(8)	1	(1)	2	(1)	7	(5)
Total EU & West		**31 832**	**24 867**	**(78)**	**1 902**	**(6)**	**705**	**(2)**	**955**	**(3)**	**3 403**	**(11)**
Balkans												
Albania	smear	201	150	(75)	11	(5)	0	(0)	0	(0)	40	(20)
Macedonia, F.Y.R.	smear	189	159	(84)	3	(2)	2	(1)	0	(0)	25	(13)
Total Balkans		**390**	**309**	**(79)**	**14**	**(4)**	**2**	**(1)**	**0**	**(0)**	**65**	**(17)**
East												
Azerbaijan	smear	2 249	1 251	(56)	43	(2)	229	(10)	0	(0)	726	(32)
Belarus	smear/culture	2 284	1 699	(74)	210	(9)	204	(9)	0	(0)	171	(7)
Georgia	smear	1 301	880	(68)	37	(3)	60	(5)	0	(0)	324	(25)
Kazakhstan	smear	7 927	5 743	(72)	380	(5)	861	(11)	0	(0)	943	(12)
Kyrgyzstan	smear	1 716	1 461	(85)	66	(4)	88	(5)	4	(0)	97	(6)
Moldova, Rep. of	smear	1 530	944	(62)	131	(9)	189	(12)	12	(1)	254	(17)
Tajikistan	smear	1 055	593	(56)	82	(8)	47	(4)	0	(0)	333	(32)
Total East		**18 062**	**12 571**	**(70)**	**949**	**(5)**	**1 678**	**(9)**	**16**	**(0)**	**2 848**	**(16)**
Group B) Incomplete cohorts or partial geographic coverage												
EU & West												
Cyprus	culture	17	6	(35)	3	(18)	0	(0)	0	(0)	8	(47)
Balkans												
Bosnia & Herzegovina	culture	1 025	1 007	(98)	5	(0)	3	(0)	1	(0)	9	(1)
Croatia	culture	632	274	(43)	45	(7)	0	(0)	5	(1)	308	(49)
Serbia	smear/culture	309	273	(88)	19	(6)	0	(0)	0	(0)	17	(6)
Turkey	smear/culture	5 816	4 936	(85)	161	(3)	1	(0)	180	(3)	538	(9)
East												
Armenia	smear	461	325	(70)	18	(4)	28	(6)	0	(0)	90	(20)
Russian Federation	smear	7 108	4 161	(59)	977	(14)	961	(14)	0	(0)	1 009	(14)
Uzbekistan	smear	3 833	3 003	(78)	207	(5)	243	(6)	0	(0)	380	(10)

* No previous diagnosis of tuberculosis

Table 28. Treatment outcome, retreated definite pulmonary tuberculosis cases, WHO European Region, 2004

Geographic area	Cohort	Total included	Success		Died		Failed		Still on treatment		Defaulted, transferred or unknown	
Country			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A. Complete cohorts with nationwide coverage												
EU & West												
Austria	culture	14	8	(57)	2	(14)	0	(0)	1	(7)	3	(21)
Belgium *	culture	58	30	(52)	9	(16)	0	(0)	6	(10)	13	(22)
Bulgaria	smear/culture	102	55	(54)	11	(11)	15	(15)	0	(0)	21	(21)
Czech Republic	culture	13	8	(62)	0	(0)	0	(0)	2	(15)	3	(23)
Denmark *	culture	18	14	(78)	2	(11)	0	(0)	0	(0)	2	(11)
Estonia	culture	90	31	(34)	13	(14)	2	(2)	26	(29)	18	(20)
Germany	culture	233	148	(64)	23	(10)	4	(2)	20	(9)	38	(16)
Hungary	culture	163	68	(42)	24	(15)	34	(21)	17	(10)	20	(12)
Ireland *	culture	16	8	(50)	1	(6)	0	(0)	1	(6)	6	(38)
Latvia	culture	229	106	(46)	28	(12)	5	(2)	71	(31)	19	(8)
Lithuania	culture	449	137	(31)	110	(24)	22	(5)	79	(18)	101	(22)
Malta	culture	0	0	-	0	-	0	-	0	-	0	-
Netherlands	culture	9	9	(100)	0	(0)	0	(0)	0	(0)	0	(0)
Poland *	culture	614	248	(40)	56	(9)	5	(1)	6	(1)	299	(49)
Portugal	culture	243	170	(70)	27	(11)	2	(1)	14	(6)	30	(12)
Romania	culture	5 350	2 594	(48)	482	(9)	573	(11)	660	(12)	1 041	(19)
Slovakia	culture	47	43	(91)	1	(2)	1	(2)	1	(2)	1	(2)
Slovenia	culture	25	17	(68)	3	(12)	1	(4)	1	(4)	3	(12)
Sweden	smear	7	4	(57)	0	(0)	0	(0)	0	(0)	3	(43)
United Kingdom *	culture	225	141	(63)	21	(9)	0	(0)	14	(6)	49	(22)
Andorra	culture	0	0	-	0	-	0	-	0	-	0	-
Iceland	culture	0	0	-	0	-	0	-	0	-	0	-
Israel	culture	12	9	(75)	0	(0)	2	(17)	0	(0)	1	(8)
Norway	culture	8	6	(75)	1	(13)	0	(0)	0	(0)	1	(13)
Total EU & West		**7 925**	**3 854**	**(49)**	**814**	**(10)**	**666**	**(8)**	**919**	**(12)**	**1 672**	**(21)**
Balkans												
Albania	smear	19	16	(84)	0	(0)	1	(5)	0	(0)	2	(11)
Macedonia, F.Y.R.	smear	52	46	(88)	4	(8)	0	(0)	0	(0)	2	(4)
Total Balkans		**71**	**62**	**(87)**	**4**	**(6)**	**1**	**(1)**	**0**	**(0)**	**4**	**(6)**
East												
Azerbaijan	smear	2 188	900	(41)	176	(8)	466	(21)	0	(0)	646	(30)
Belarus	smear/culture	-	-	-	-	-	-	-	-	-	-	-
Georgia	smear	931	362	(39)	65	(7)	96	(10)	0	(0)	408	(44)
Kazakhstan †	smear	3 126	1 744	(56)	368	(12)	449	(14)	0	(0)	565	(18)
Kyrgyzstan †	smear	398	292	(73)	40	(10)	38	(10)	1	(0)	27	(7)
Moldova, Rep. of †	smear	766	313	(41)	121	(16)	134	(17)	17	(2)	181	(24)
Tajikistan †	smear	61	37	(61)	11	(18)	5	(8)	0	(0)	8	(13)
Total East		**7 470**	**3 648**	**(49)**	**781**	**(10)**	**1 188**	**(16)**	**18**	**(0)**	**1 835**	**(25)**
Group B. Incomplete cohorts or partial geographic coverage												
EU & West												
Cyprus	culture	1	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)
Balkans												
Bosnia & Herzegovina	culture	97	89	(92)	3	(3)	1	(1)	0	(0)	4	(4)
Croatia	culture	85	28	(33)	9	(11)	0	(0)	4	(5)	44	(52)
Serbia	smear/culture	38	25	(66)	5	(13)	3	(8)	0	(0)	5	(13)
Turkey	smear/culture	38	31	(82)	2	(5)	1	(3)	0	(0)	4	(11)
East												
Armenia †	smear	102	52	(51)	4	(4)	15	(15)	0	(0)	31	(30)
Russian Federation †	smear	3 011	1 172	(39)	443	(15)	780	(26)	0	(0)	616	(20)
Uzbekistan	smear	2 098	1 415	(67)	211	(10)	180	(9)	0	(0)	292	(14)

* Previous diagnosis of tuberculosis

† Relapses only

Table 29. Treatment outcomes by geographic origin, all pulmonary cases, WHO European Region, 2004*

Geographic area / Country	Cases	Success		Died		Still on treatment		Other†	
		N	%	N	%	N	%	N	%
A. National origin									
EU & West									
Austria	514	384	(75)	63	(12)	8	(2)	59	(11)
Belgium	449	255	(57)	61	(14)	14	(3)	119	(27)
Czech Republic	699	529	(76)	31	(4)	19	(3)	120	(17)
Denmark	133	115	(86)	12	(9)	1	(1)	5	(4)
Estonia	403	279	(69)	39	(10)	48	(12)	37	(9)
Germany	2 737	1 800	(66)	441	(16)	150	(5)	346	(13)
Hungary	2 128	1 345	(63)	261	(12)	212	(10)	310	(15)
Ireland	219	147	(67)	18	(8)	6	(3)	48	(22)
Latvia	1 270	932	(73)	91	(7)	154	(12)	93	(7)
Lithuania	2 043	1 378	(67)	256	(13)	134	(7)	275	(13)
Malta	5	4	(80)	1	(20)	0	(0)	0	(0)
Netherlands	368	287	(78)	34	(9)	0	(0)	47	(13)
Portugal	2 533	2 094	(83)	151	(6)	121	(5)	167	(7)
Romania	26 993	19 991	(74)	1 591	(6)	949	(4)	4 462	(17)
Slovakia	550	490	(89)	29	(5)	2	(0)	29	(5)
Slovenia	167	143	(86)	18	(11)	1	(1)	5	(3)
United Kingdom	1 556	1 021	(66)	183	(12)	55	(4)	297	(19)
Andorra	0	-	-	-	-	-	-	-	-
Iceland	0	-	-	-	-	-	-	-	-
Norway	50	33	(66)	17	(34)	0	(0)	0	(0)
Total EU & West	**42 817**	**31 227**	**(73)**	**3 297**	**(8)**	**1 874**	**(4)**	**6 419**	**(15)**
Balkans									
Albania	357	269	(75)	13	(4)	0	(0)	75	(21)

	Cases	Success		Died		Still on treatment		Other†	
		N	%	N	%	N	%	N	%
B. Foreign origin									
EU & West									
Austria	373	221	(59)	9	(2)	51	(14)	92	(25)
Belgium	430	245	(57)	13	(3)	10	(2)	162	(38)
Czech Republic	125	82	(66)	6	(5)	20	(16)	17	(14)
Denmark	156	128	(82)	6	(4)	0	(0)	22	(14)
Estonia	127	85	(67)	13	(10)	14	(11)	15	(12)
Germany	2 170	1 535	(71)	119	(5)	129	(6)	387	(18)
Hungary	44	28	(64)	0	(0)	4	(9)	12	(27)
Ireland	82	56	(68)	0	(0)	2	(2)	24	(29)
Latvia	110	77	(70)	11	(10)	12	(11)	10	(9)
Lithuania	82	51	(62)	14	(17)	9	(11)	8	(10)
Malta	9	8	(89)	0	(0)	0	(0)	1	(11)
Netherlands	424	347	(82)	13	(3)	0	(0)	64	(15)
Portugal	318	256	(81)	9	(3)	10	(3)	43	(14)
Romania	1	0	(0)	0	(0)	0	(0)	1	(100)
Slovakia	14	12	(86)	0	(0)	0	(0)	2	(14)
Slovenia	45	37	(82)	3	(7)	1	(2)	4	(9)
United Kingdom	2 466	1 698	(69)	89	(4)	83	(3)	596	(24)
Andorra	5	3	(60)	0	(0)	0	(0)	2	(40)
Iceland	5	4	(80)	1	(20)	0	(0)	0	(0)
Norway	144	130	(90)	3	(2)	2	(1)	9	(6)
Total EU & West	**7 130**	**5 003**	**(70)**	**309**	**(4)**	**347**	**(5)**	**1 471**	**(21)**
Balkans									
Albania	0	-	-	-	-	-	-	-	-

* Including only countries reporting comprehensive case-linked data on geographic origin and on outcomes for pulmonary cases. Excluding 617 cases with unknown origin reported by 8 countries.

† Failed, defaulted, transferred or unknown

Table 30. Treatment outcomes by site of disease, WHO European Region, 2004*

Geographic area / Country	Cases	Success		Died		Still on treatment		Other†	
		N	%	N	%	N	%	N	%
A. All pulmonary									
EU & West									
Austria	887	605	(68)	72	(8)	59	(7)	151	(17)
Czech Republic	824	611	(74)	37	(4)	39	(5)	137	(17)
Denmark	289	243	(84)	18	(6)	1	(0)	27	(9)
Estonia	532	364	(68)	54	(10)	62	(12)	52	(10)
Germany	5 068	3 396	(67)	583	(12)	290	(6)	799	(16)
Hungary	2 200	1 393	(63)	266	(12)	218	(10)	323	(15)
Ireland	310	204	(66)	18	(6)	8	(3)	80	(26)
Latvia	1 405	1 009	(72)	127	(9)	166	(12)	103	(7)
Lithuania	2 125	1 429	(67)	270	(13)	143	(7)	283	(13)
Malta	14	12	(86)	1	(7)	0	(0)	1	(7)
Netherlands	797	636	(80)	48	(6)	0	(0)	113	(14)
Portugal	2 857	2 353	(82)	162	(6)	132	(5)	210	(7)
Romania	26 994	19 991	(74)	1 591	(6)	949	(4)	4 463	(17)
Slovakia	564	502	(89)	29	(5)	2	(0)	31	(5)
Slovenia	212	180	(85)	21	(10)	2	(1)	9	(4)
United Kingdom	4 403	2 929	(67)	314	(7)	144	(3)	1 016	(23)
Andorra	5	3	(60)	0	(0)	0	(0)	2	(40)
Iceland	5	4	(80)	1	(20)	0	(0)	0	(0)
Norway	194	163	(84)	20	(10)	2	(1)	9	(5)
Total EU & West	**49 685**	**36 027**	**(73)**	**3 632**	**(7)**	**2 217**	**(4)**	**7 809**	**(16)**
Balkans									
Albania	357	269	(75)	13	(4)	0	(0)	75	(21)

	Cases	Success		Died		Still on treatment		Other†	
		N	%	N	%	N	%	N	%
B. All extra-pulmonary									
EU & West									
Austria	174	137	(79)	11	(6)	1	(1)	25	(14)
Czech Republic	233	164	(70)	2	(1)	8	(3)	59	(25)
Denmark	96	83	(86)	4	(4)	0	(0)	9	(9)
Estonia	62	49	(79)	5	(8)	1	(2)	7	(11)
Germany	1 299	952	(73)	102	(8)	56	(4)	189	(15)
Hungary	140	105	(75)	11	(8)	16	(11)	8	(6)
Ireland	118	76	(64)	5	(4)	4	(3)	33	(28)
Latvia	205	192	(94)	5	(2)	6	(3)	2	(1)
Lithuania	389	367	(94)	7	(2)	2	(1)	13	(3)
Malta	5	5	(100)	0	(0)	0	(0)	0	(0)
Netherlands	547	450	(82)	15	(3)	0	(0)	82	(15)
Portugal	984	792	(80)	59	(6)	59	(6)	74	(8)
Romania	4 027	3 320	(82)	144	(4)	30	(1)	533	(13)
Slovakia	141	128	(91)	8	(6)	0	(0)	5	(4)
Slovenia	51	36	(71)	12	(24)	1	(2)	2	(4)
United Kingdom	3 134	2 256	(72)	133	(4)	100	(3)	645	(21)
Andorra	2	1	(50)	0	(0)	0	(0)	1	(50)
Iceland	7	7	(100)	0	(0)	0	(0)	0	(0)
Norway	102	93	(91)	0	(0)	0	(0)	9	(9)
Total EU & West	**11 716**	**9 213**	**(79)**	**523**	**(4)**	**284**	**(2)**	**1 696**	**(14)**
Balkans									
Albania	224	169	(75)	5	(2)	0	(0)	50	(22)

* Including only countries reporting comprehensive case-linked outcome data for both definite and non-definite forms of pulmonary and extra-pulmonary TB. Excluding 283 cases with unknown site of disease reported by 6 countries.

† Failed, defaulted, transferred or unknown

Table 31. Tuberculosis deaths and mortality rates, WHO European Region, 2000-2004*

Geographic area	TB deaths and mortality rate (deaths/100,000)									
	2000		2001		2002		2003		2004	
Country	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
EU & West										
Austria	71	0.88	55	0.68	66	0.82	45	0.55	41	0.50
Belgium	-	-	-	-	-	-	-	-	-	-
Bulgaria	318	3.89	285	3.60	283	3.60	275	3.52	268	3.44
Cyprus	-	-	-	-	-	-	-	-	-	-
Czech Republic	125	1.22	94	0.92	82	0.80	81	0.79	68	0.67
Denmark	20	0.38	23	0.43	-	-	-	-	-	-
Estonia	106	7.74	96	7.04	88	6.48	91	6.72	98	7.26
Finland	84	1.62	53	1.02	57	1.10	48	0.92	29	0.56
France	633	1.08	587	0.99	467	0.78	499	0.83	-	-
Germany	497	0.61	415	0.50	388	0.47	396	0.48	350	0.42
Greece	83	0.76	105	0.96	86	0.78	107	0.97	75	0.68
Hungary	361	3.54	324	3.18	284	2.80	235	2.32	-	-
Ireland	36	0.95	27	0.70	27	0.69	22	0.55	23	0.57
Italy	460	0.81	415	0.73	413	0.72	-	-	-	-
Latvia	288	12.14	263	11.17	191	8.17	202	8.69	169	7.31
Lithuania	361	10.32	350	10.05	332	9.57	331	9.58	308	8.97
Luxembourg	1	0.23	2	0.45	3	0.67	-	-	-	-
Malta	1	0.26	0	0.00	1	0.25	1	0.25	-	-
Netherlands	32	0.20	44	0.27	39	0.24	33	0.20	34	0.21
Poland	1 041	2.69	1 001	2.59	892	2.33	905	2.37	813	2.13
Portugal	260	2.54	242	2.35	239	2.31	211	2.01	-	-
Romania	2 130	9.49	2 387	10.65	2 339	10.73	2 237	10.29	2 089	9.64
Slovakia	54	1.00	55	1.02	64	1.19	-	-	-	-
Slovenia	17	0.86	25	1.26	20	1.00	21	1.05	12	0.60
Spain	399	0.99	387	0.95	377	0.91	360	0.86	334	0.78
Sweden	18	0.20	27	0.30	21	0.24	-	-		-
United Kingdom	-	-	404	0.68	427	0.72	429	0.72	384	0.64
Andorra	-	-	-	-	-	-	-	-	-	-
Iceland	0	0.00	1	0.35	-	-	-	-	-	-
Israel	35	0.56	16	0.25	-	-	24	0.36	-	-
Monaco	-	-	-	-	-	-	-	-	-	-
Norway	10	0.22	16	0.35	8	0.18	11	0.24	7	0.15
San Marino	0	0.00	-	-	-	-	-	-	-	-
Switzerland	33	0.46	24	0.33	24	0.33	17	0.23	16	0.22
Balkans										
Albania	*16*	*0.51*	*14*	*0.46*	*14*	*0.45*	*12*	*0.39*	-	-
Bosnia & Herzegovina	-	-	-	-	-	-	-	-	-	-
Croatia	169	3.86	145	3.27	181	4.07	159	3.58	152	3.42
Macedonia, F.Y.R.	92	4.54	86	4.23	71	3.52	78	3.85	-	-
Montenegro †	-	-	-	-	-	-	-	-	-	-
Serbia †	379	4.54	259	3.11	267	3.29	-	-	-	-
Turkey	-	-	-	-	-	-	-	-	-	-
East										
Armenia	*157*	*4.13*	*145*	*3.82*	*167*	*5.20*	*155*	*4.83*	-	-
Azerbaijan	*1 184*	*14.71*	*1 107*	*13.65*	*1 019*	*12.47*	-	-	-	-
Belarus	726	7.26	827	8.29	938	9.45	1 027	10.40	-	-
Georgia	*288*	*6.47*	*255*	*5.61*	-	-	-	-	-	-
Kazakhstan	3 899	26.22	3 612	24.31	3 748	25.23	3 534	23.70	3 305	22.27
Kyrgyzstan	*1 019*	*20.85*	*1 170*	*23.75*	*1 003*	*20.20*	*919*	*18.34*	*812*	*16.48*
Moldova, Republic of	608	16.70	536	14.76	556	15.33	555	15.36	624	17.31
Russian Federation	29 800	20.62	28 850	20.07	31 197	21.83	31 405	21.89	30 840	21.44
Tajikistan	*606*	*9.79*	*698*	*11.06*	-	-	-	-	-	-
Turkmenistan	-	-	-	-	-	-	-	-	-	-
Ukraine	10 976	22.29	11 064	22.66	9 894	20.62	10 421	21.88	10 787	22.82
Uzbekistan	3 352	13.60	-	-	3 495	13.83	3 304	12.92	-	-

* Source: WHO Mortality Database (WHOSIS, update November 2006). Codes used: ICD9 (020-025,029) or ICD10 (A15-19).
Countries in italics had coverage or/and estimated data completeness <80% in last reporting year reported (source: WHOSIS, March 2006) .
† Data from Montenegro included with Serbia

Table 32. Tuberculosis deaths by localisation of disease, WHO European Region, latest available year*

Geographic area		Respiratory		Miliary		Other		Total	Ratio of TB deaths to TB case reports †
Country	Year	N	%	N	%	N	%	N	
EU & West									
Austria	2004	33	(80)	5	(12)	3	(7)	41	0.04
Belgium	-	-	-	-	-	-	-	-	-
Bulgaria ‡	2004	232	(87)	-	-	36	(13)	268	0.08
Cyprus	-	-	-	-	-	-	-	-	-
Czech Republic	2004	64	(94)	2	(3)	2	(3)	68	0.06
Denmark	2001	18	(78)	1	(4)	4	(17)	23	0.05
Estonia	2004	90	(92)	7	(7)	1	(1)	98	0.16
Finland	2004	20	(69)	7	(24)	2	(7)	29	0.09
France	2003	405	(81)	31	(6)	63	(13)	499	0.08
Germany	2004	292	(83)	29	(8)	29	(8)	350	0.05
Greece ‡	2004	69	(92)	-	-	6	(8)	75	0.10
Hungary	2003	227	(97)	6	(3)	2	(1)	235	0.09
Ireland ‡	2004	16	(70)	-	-	7	(30)	23	0.05
Italy ‡	2002	343	(83)	-	-	70	(17)	413	0.09
Latvia	2004	161	(95)	7	(4)	1	(1)	169	0.10
Lithuania	2004	221	(72)	83	(27)	4	(1)	308	0.12
Luxembourg	2002	2	(67)	1	(33)	0	(0)	3	0.09
Malta	2003	1	(100)	0	(0)	0	(0)	1	0.14
Netherlands	2004	28	(82)	2	(6)	4	(12)	34	0.03
Poland	2004	786	(97)	10	(1)	17	(2)	813	0.09
Portugal	2003	181	(86)	8	(4)	22	(10)	211	0.05
Romania	2004	2 029	(97)	15	(1)	45	(2)	2 089	0.07
Slovakia	2002	59	(92)	3	(5)	2	(3)	64	0.06
Slovenia	2004	8	(67)	2	(17)	2	(17)	12	0.05
Spain	2004	260	(78)	33	(10)	41	(12)	334	0.04
Sweden	2002	18	(86)	3	(14)	0	(0)	21	0.05
United Kingdom	2004	271	(71)	50	(13)	63	(16)	384	0.05
Andorra	-	-	-	-	-	-	-	-	-
Iceland	2001	1	(100)	0	(0)	0	(0)	1	0.08
Israel	2003	16	(67)	1	(4)	7	(29)	24	0.05
Monaco	-	-	-	-	-	-	-	-	-
Norway	2004	6	(86)	1	(14)	0	(0)	7	0.02
San Marino	2000	0	-	0	-	0	-	0	0.00
Switzerland ‡	2004	13	(81)	-	-	3	(19)	16	0.03
Balkans									
Albania ‡	*2003*	*10*	*(83)*	-	-	*2*	*(17)*	*12*	*0.02*
Bosnia & Herzegovina	-	-	-	-	-	-	-	-	-
Croatia	2004	141	(93)	3	(2)	8	(5)	152	0.12
Macedonia, F.Y.R. ‡	2003	73	(94)	-	-	5	(6)	78	0.11
Montenegro §	-	-	-	-	-	-	-	-	-
Serbia §	2002	253	(95)	8	(3)	6	(2)	267	0.09
Turkey	-	-	-	-	-	-	-	-	-
East									
Armenia	-	-	-	-	-	-	-	-	-
Azerbaijan	-	-	-	-	-	-	-	-	-
Belarus ‡	2003	968	(94)	-	-	59	(6)	1 027	0.17
Georgia	-	-	-	-	-	-	-	-	-
Kazakhstan ‡	2004	3 159	(96)	-	-	146	(4)	3 305	0.10
Kyrgyzstan	*2004*	*751*	*(92)*	*31*	*(4)*	*30*	*(4)*	*812*	*0.12*
Moldova, Republic of	2004	611	(98)	4	(1)	9	(1)	624	0.10
Russian Federation ‡	2004	27 652	(90)	-	-	3 188	(10)	30 840	0.20
Tajikistan ‡	*2001*	*683*	*(98)*	-	-	*15*	*(2)*	*698*	*0.20*
Turkmenistan	-	-	-	-	-	-	-	-	-
Ukraine ‡	2002	9 401	(95)	-	-	493	(5)	9 894	0.25
Uzbekistan ‡	2000	3 294	(98)	-	-	58	(2)	3 352	0.13

* Source: WHO Mortality Database (WHOSIS, update November 2006). Codes used: ICD9 (020-025,029) or ICD10 (A15-19).

Countries in italics had coverage or/and estimated data completeness <80% in last reporting year reported (source: WHOSIS, March 2006) .

† Ratio of total TB deaths to TB cases reported to EuroTB in the corresponding year

‡ Miliary cases included under 'Other'

§ Data from Montenegro included with Serbia

4. FIGURES

Figure 1. TB notification rates, WHO European Region, 2005

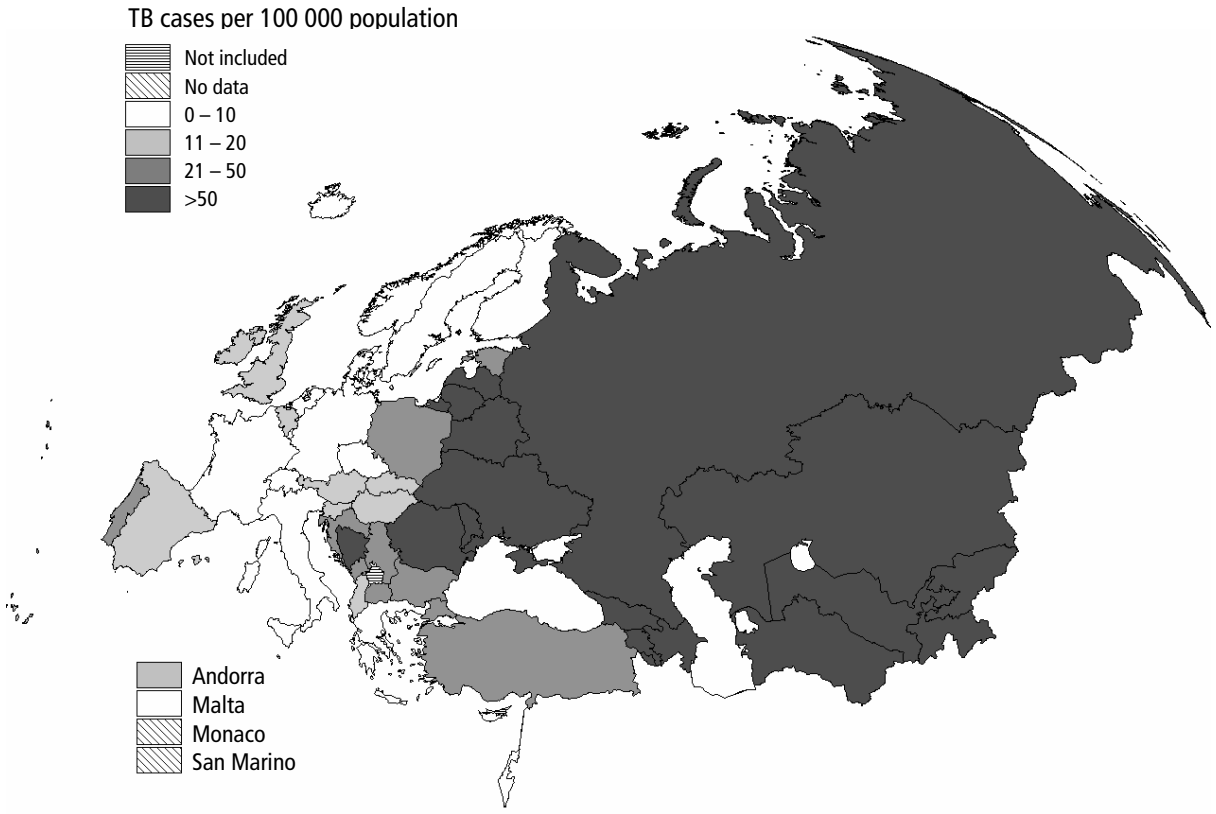
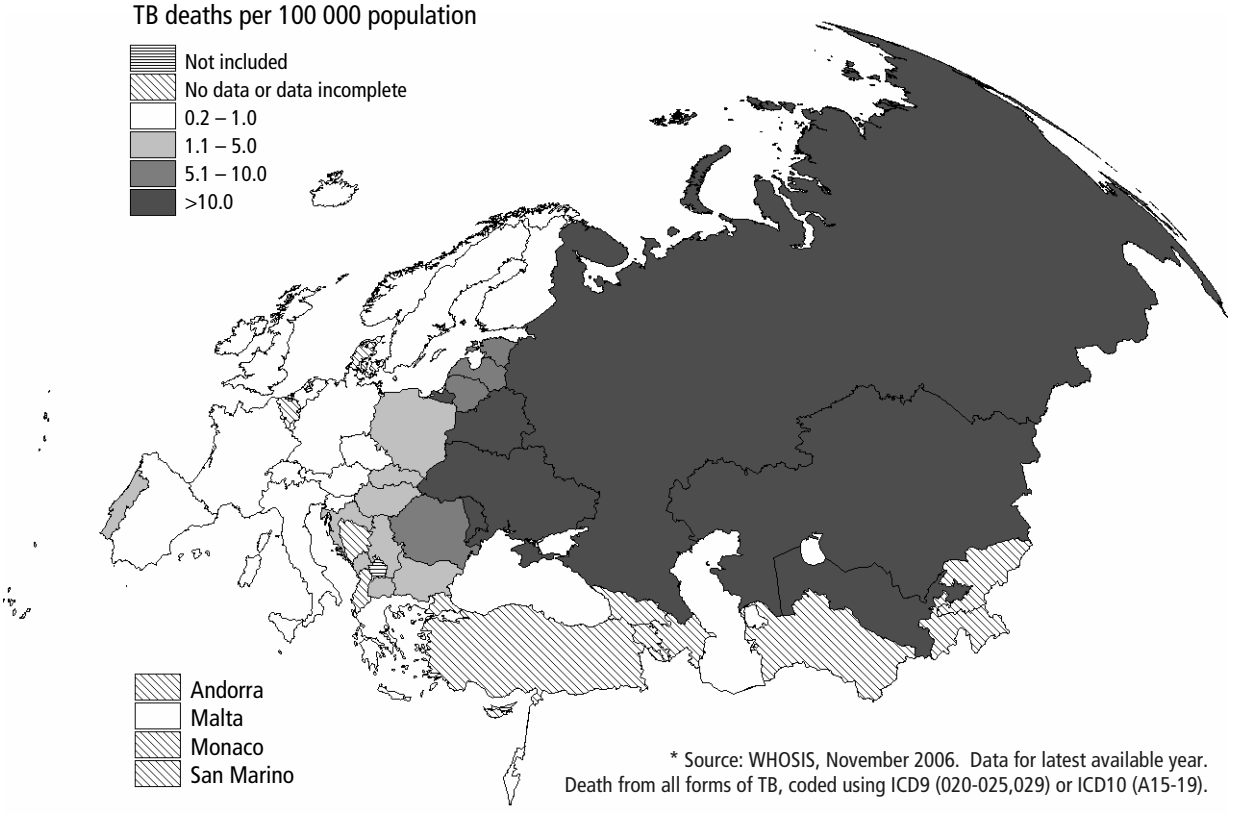
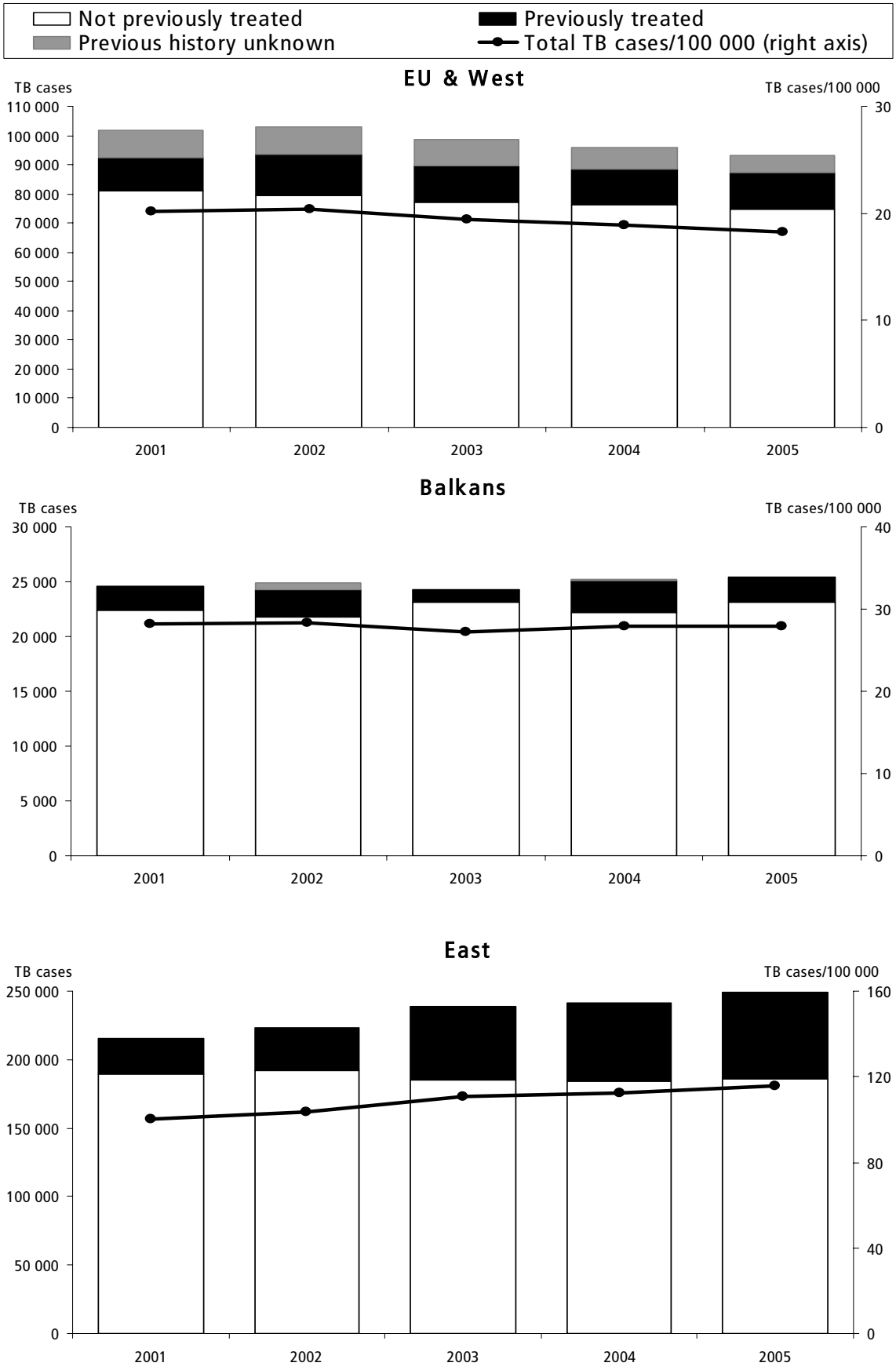


Figure 2. TB mortality rates, WHO European Region, 2002-2004*



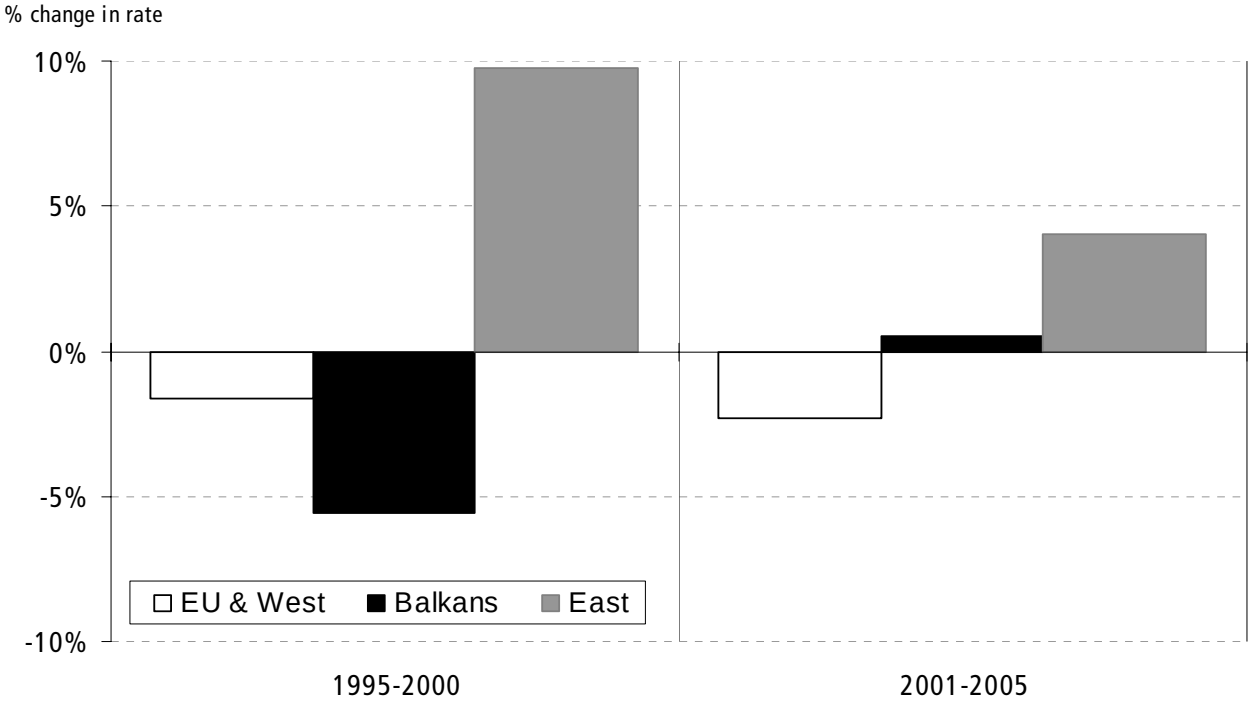
* Source: WHOSIS, November 2006. Data for latest available year.
Death from all forms of TB, coded using ICD9 (020-025,029) or ICD10 (A15-19).

Figure 3. Total TB notifications by previous treatment history and rates, WHO European Region*, 2001-2005



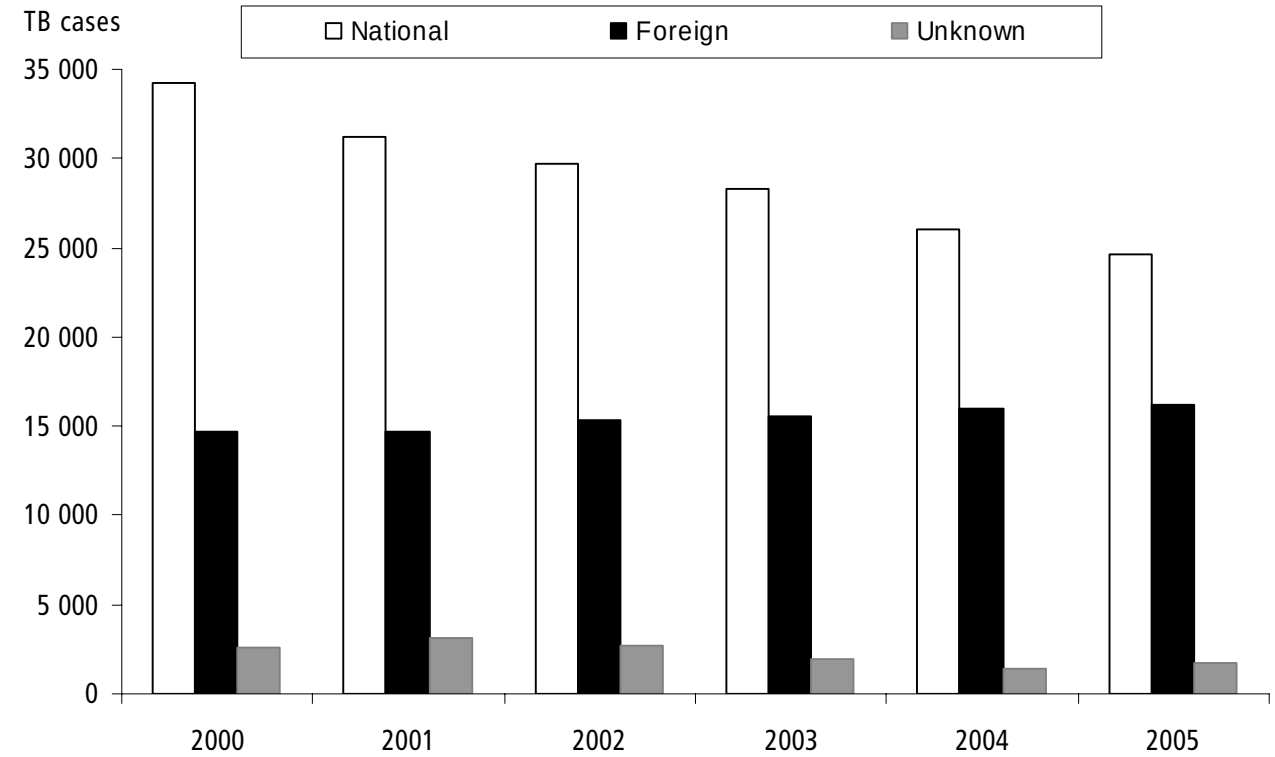
* Excluding Cyprus, Monaco, San Marino (**EU & West**), Bosnia & Herzegovina (**Balkans**), Belarus, Tajikistan, Ukraine (**East**)

Figure 4. Mean annual percentage change in TB notification rates by area, WHO European Region*, 1995-2005



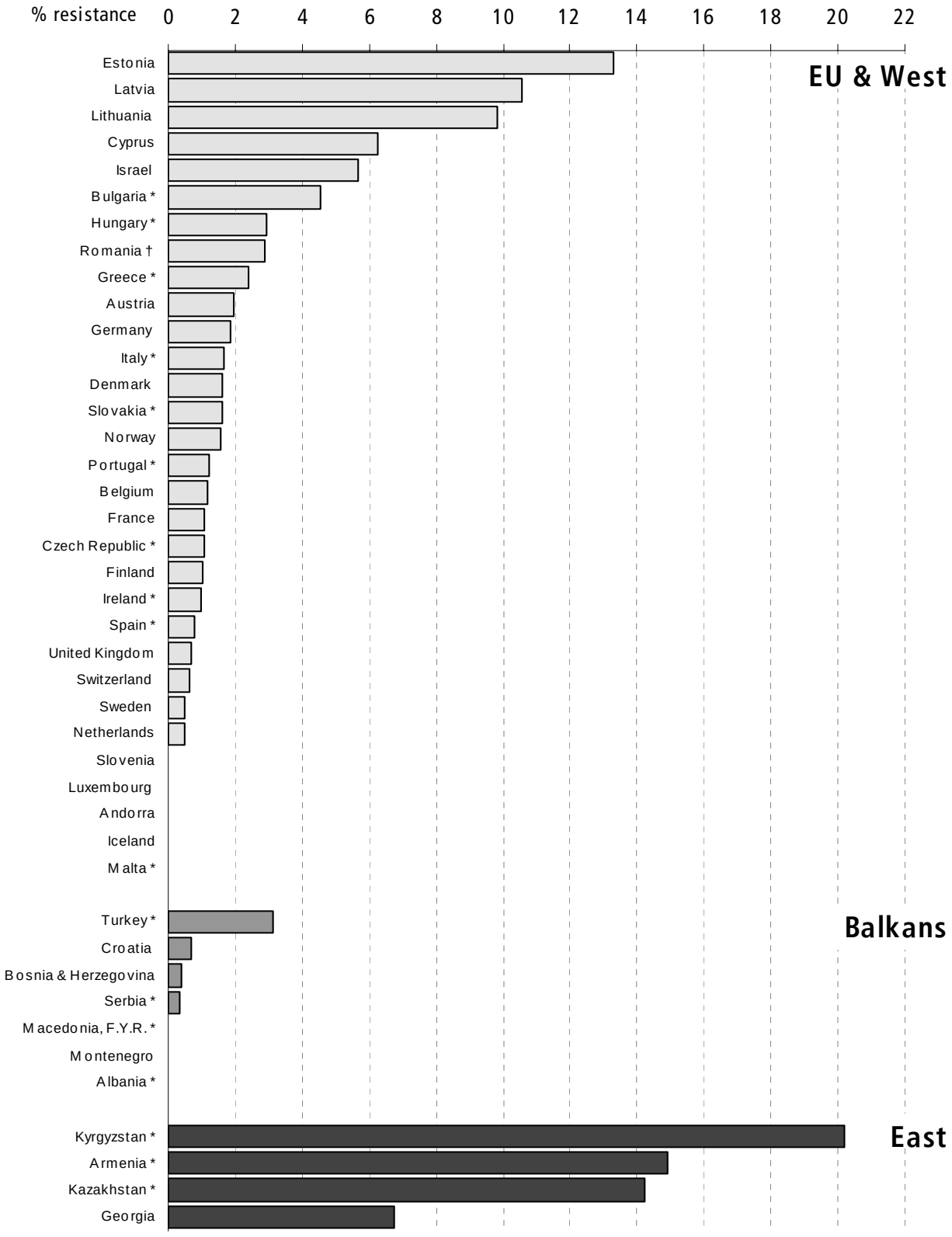
* Excluding countries with missing data for any year: Andorra, Monaco, San Marino (**EU & West**), Bosnia & Herzegovina, Montenegro, Serbia (**Balkans**), Georgia (**East**).

Figure 5. Tuberculosis cases by geographic origin, EU & West*, 2000-2005



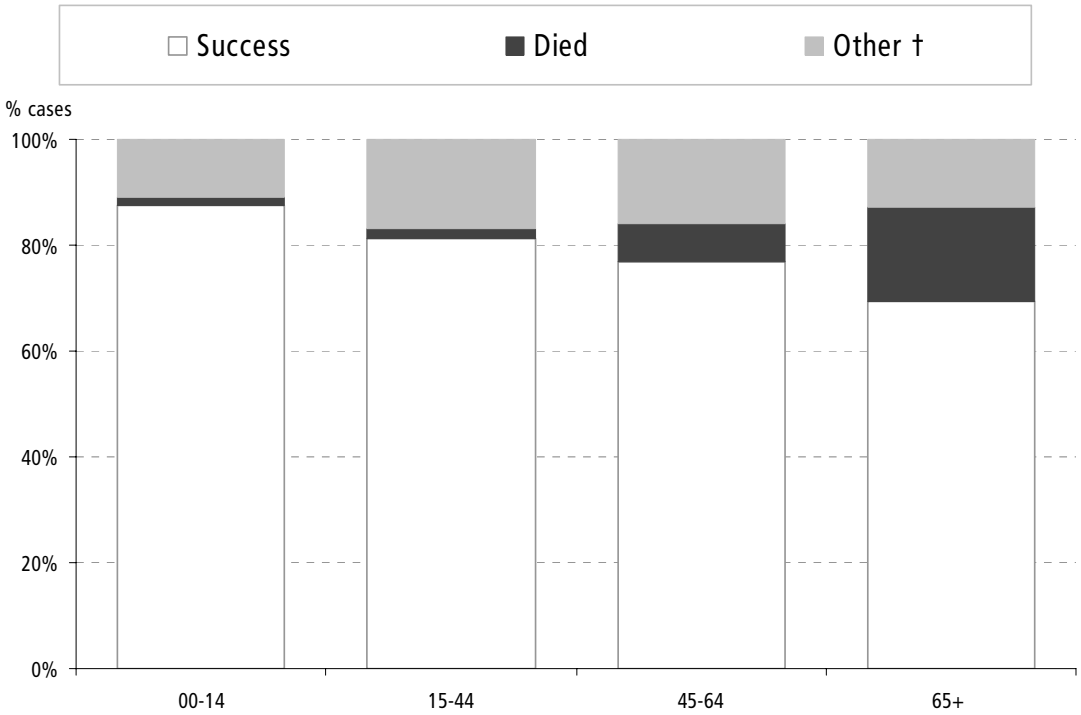
* 24 countries (excluding Andorra, Bulgaria, Cyprus, Greece, Luxembourg, Monaco, Poland, Romania, San Marino, Spain)

Figure 6. Multidrug resistance, previously untreated TB cases (primary MDR), 2005



* Data may not be representative for the whole country (see Table 20 and Technical Note)
† Survey 2003-2004

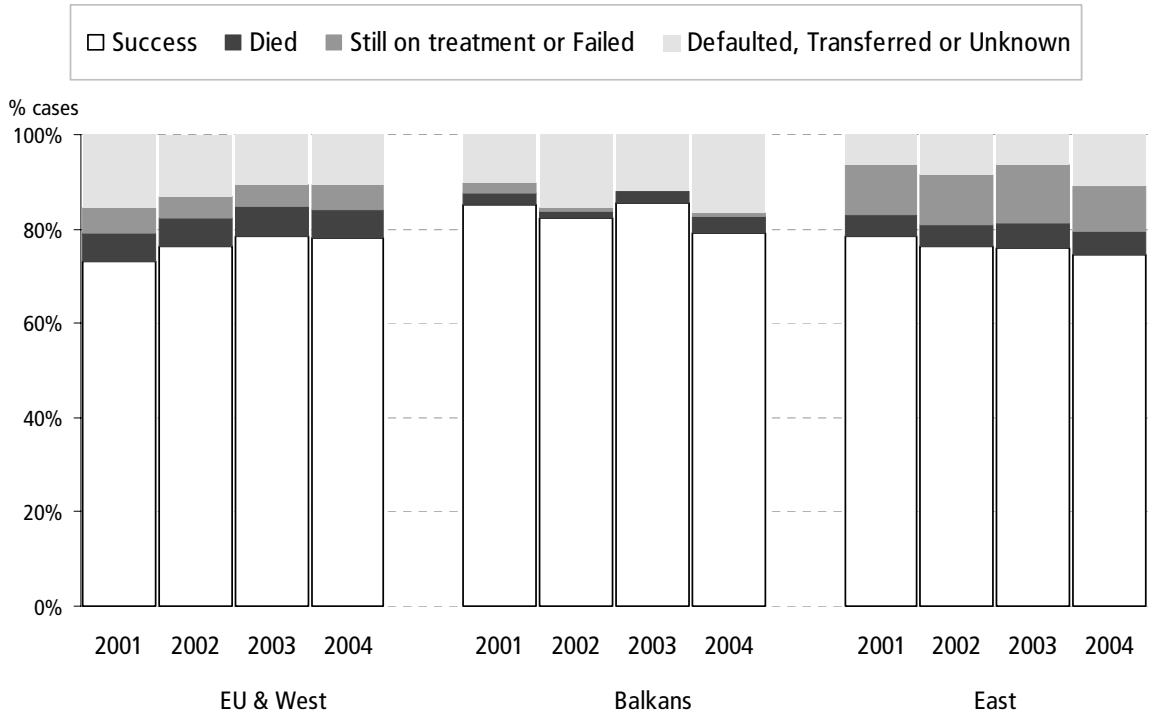
Figure 7. Treatment outcome by age-group, previously untreated culture positive pulmonary TB cases, EU & West*, 2004



* Countries with comprehensive case-based data on outcome and age. Andorra, Austria, Belgium, Czech Republic, Denmark, Estonia, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, United Kingdom

† Includes Failed, Defaulted, Transferred, Still on treatment and Unknown

Figure 8. Treatment outcomes by area, previously untreated definite pulmonary TB cases, WHO European Region*, 2001-2004



* Countries with representative outcome data. **EU & West** (culture positive): Andorra, Austria, Belgium, Czech Rep, Denmark, Estonia, Germany, Hungary, Iceland, Ireland, Israel, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, United Kingdom. **Balkans** (smear positive): Albania, Macedonia F.Y.R. **East** (smear positive): Kazakhstan, Kyrgyzstan

5. COUNTRY PROFILES

WHO European Region

ALB	Albania	GRE	Greece	POL	Poland
AND	Andorra	HUN	Hungary	POR	Portugal
AUT	Austria	ICE	Iceland	ROM	Romania
ARM	Armenia	IRE	Ireland	RUS	Russian Federation
AZE	Azerbaijan	ISR	Israel	SMR	San Marino
BEL	Belgium	ITA	Italy	SVK	Slovakia
BIH	Bosnia & Herzegovina	KAZ	Kazakhstan	SVN	Slovenia
BLR	Belarus	KGZ	Kyrgyzstan	SPA	Spain
BUL	Bulgaria	LTU	Lithuania	SWE	Sweden
CRO	Croatia	LUX	Luxembourg	SWI	Switzerland
CZH	Czech Republic	LVA	Latvia	TJK	Tajikistan
CYP	Cyprus	MAT	Malta	TKM	Turkmenistan
DEN	Denmark	MDA	Republic of Moldova	TUR	Turkey
DEU	Germany	MKD	Macedonia, F.Y.R.	UKR	Ukraine
EST	Estonia	MNE	Montenegro	UNK	United Kingdom
FIN	Finland	MON	Monaco	UZB	Uzbekistan
FRA	France	NET	Netherlands	YUG	Serbia
GEO	Georgia	NOR	Norway		

Albania

Tuberculosis case notifications, 2005

Total number of cases	540	
Cases per 100 000	17.3	
Sex ratio (M:F)	2.0	
Median age-group, nationals	45-54	years
Median age-group, non-nationals	35-44	years
Foreign citizen	4	(0.7%)
New (never-treated)	497	(92.0%)
Culture positive	196	(36.3%)
Pulmonary	360	(66.7%)
of which smear positive	213	(59.2%)
HIV positive TB cases	1	(0.2%)
TB deaths per 100 000 (2003)	0.39	

Drug Resistance Surveillance, 2005

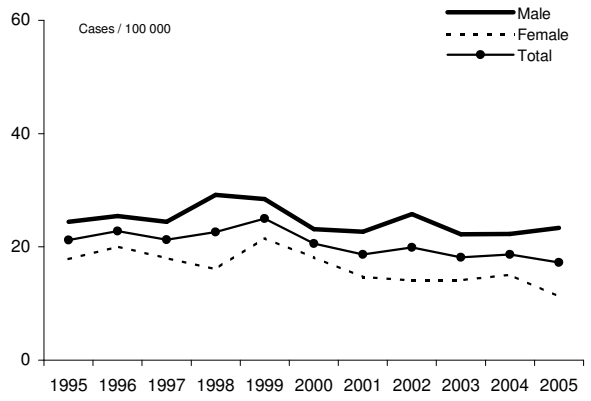
Geographic coverage	Partial *	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	173	
Cases resistant to isoniazid	10	(5.8%)
Cases resistant to rifampicin	3	(1.7%)
MDR cases	1	(0.6%)
Cases resistant to ethambutol	4	(2.3%)
Cases resistant to streptomycin	20	(11.6%)

*** Data representativeness unknown**

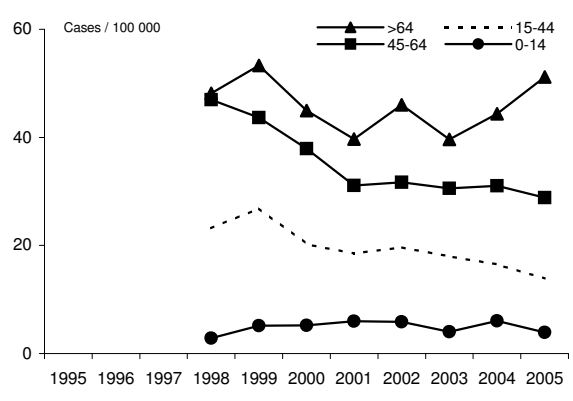
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	220	
Success	166	(75%)
Died	11	(5%)
Failed	1	(0%)
Still on treatment	0	(0%)
Lost to follow up	42	(19%)

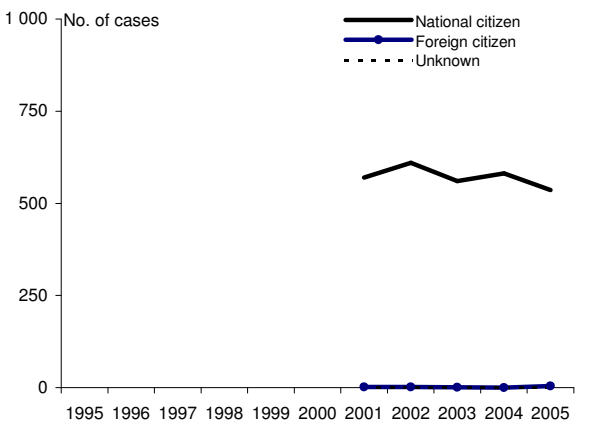
Tuberculosis notification rates by sex, 1995-2005



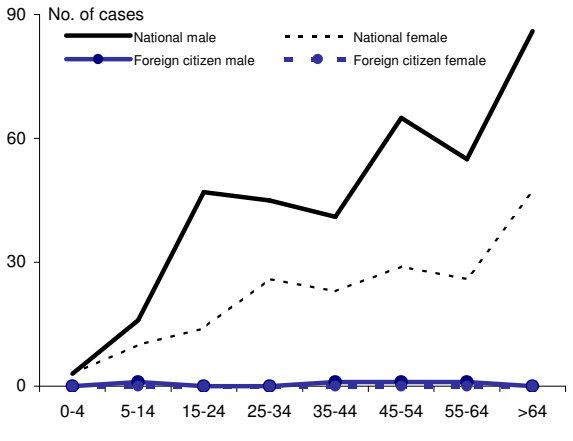
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

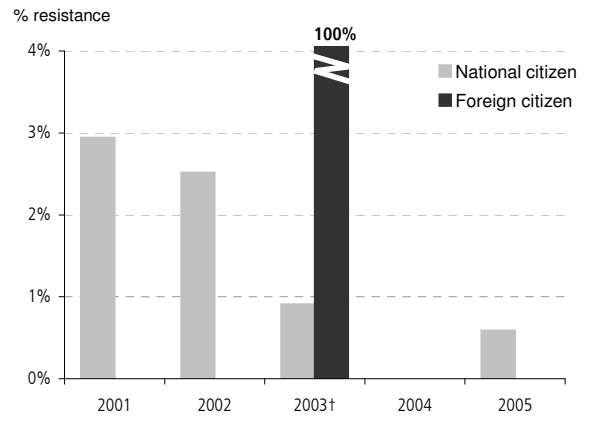


Tuberculosis cases by origin, age group and sex, 2005



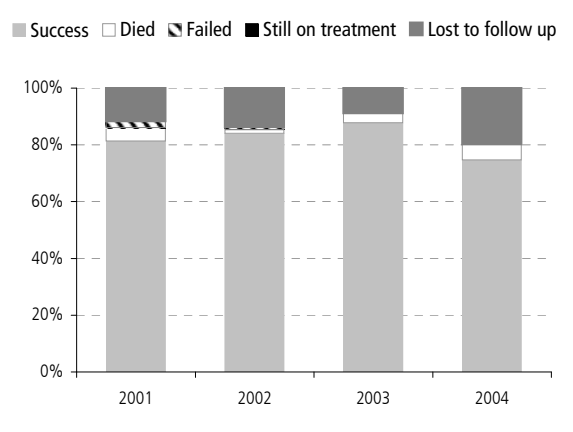
Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



† The only foreign citizen notified with TB in 2003 had MDR (100%)

Outcomes, new pulmonary smear positive cases, 2001-2004



Andorra

Tuberculosis case notifications, 2005

Total number of cases	10	
Notification rate per 100 000	14.9	
Sex ratio (M:F)	0.4	
Median age-group, nationals	25-34 years	
Median age-group, non-nationals	35-44 years	
Foreign born	8	(80.0%)
New (never-treated)	10	(100.0%)
Culture positive	9	(90.0%)
Pulmonary	6	(60.0%)
of which sputum smear positive	5	(83.3%)
HIV positive TB cases	0	(0.0%)
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2005

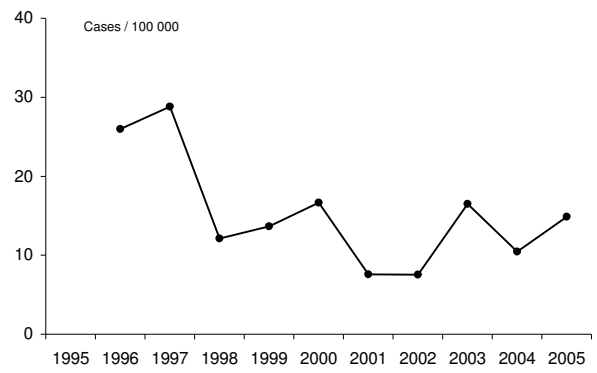
Geographic coverage	National	
International proficiency testing	No *	
Case-linked data reporting	Yes	
Cases with DST results	9	
Cases resistant to isoniazid	1	(11.1%)
Cases resistant to rifampicin	0	(0.0%)
MDR cases	0	(0.0%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	1	(11.1%)

*** DST done in Spain**

Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	4	
Success	3	(75%)
Died	0	(0%)
Failed	0	(0%)
Still on treatment	0	(0%)
Lost to follow up	1	(25%)

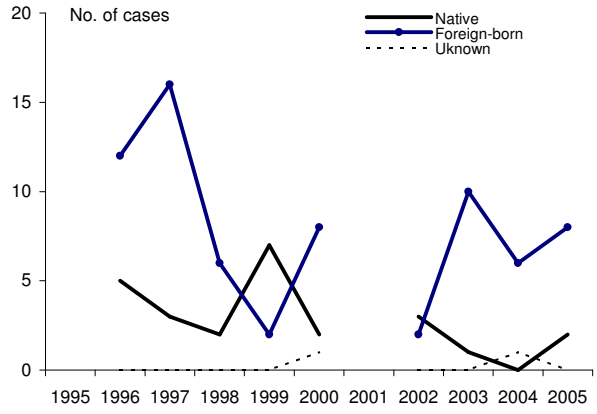
TB notification rates, 1995-2005



Tuberculosis notification rates by age group, 1995-2005

Insufficient number of cases for graphic presentation

Tuberculosis cases by geographic origin, 1995-2005



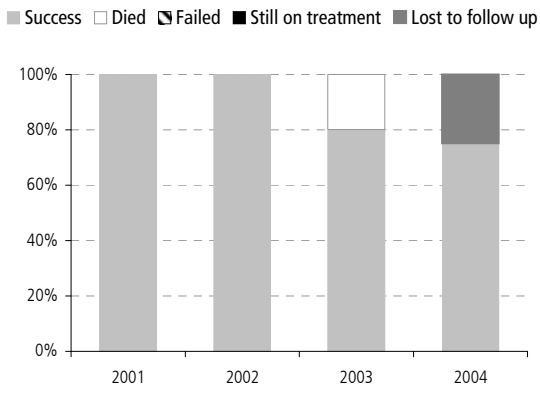
Tuberculosis cases by origin, age group and sex, 2005

Insufficient number of cases for graphic presentation

Combined multidrug resistance, by origin, 2001-2005

No MDR cases reported

Outcomes, new pulmonary culture positive cases, 2001-2004



Armenia

Tuberculosis case notifications, 2005

Total number of cases	2 322	
Notification rate per 100 000	77.0	
Sex ratio (M:F)	4.0	
Median age-group, nationals	25-34 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	1 886	(81.2%)
Culture positive	-	-
Pulmonary	1 957	(84.3%)
of which sputum smear positive	908	(46.4%)
HIV positive (selected TB cases)	46	(2.0%)
TB deaths per 100 000 (2003)	4.83	

Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes (2004)	
Case-linked data reporting	No *	
Cases with DST results	758	
Cases resistant to isoniazid	309	(40.8%)
Cases resistant to rifampicin	173	(22.8%)
MDR cases	162	(21.4%)
Cases resistant to ethambutol	-	-
Cases resistant to streptomycin	-	-

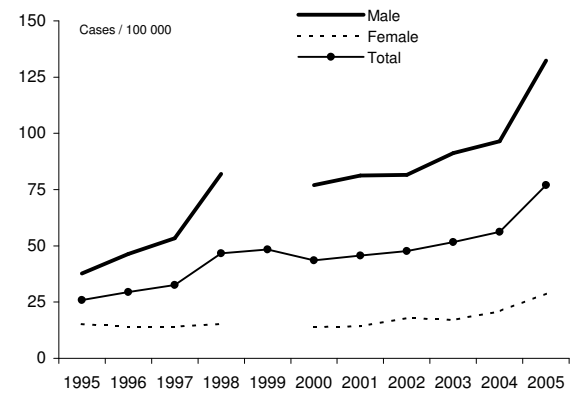
*** Data from NRL (representativeness unknown)**

Culture and DST not routinely performed

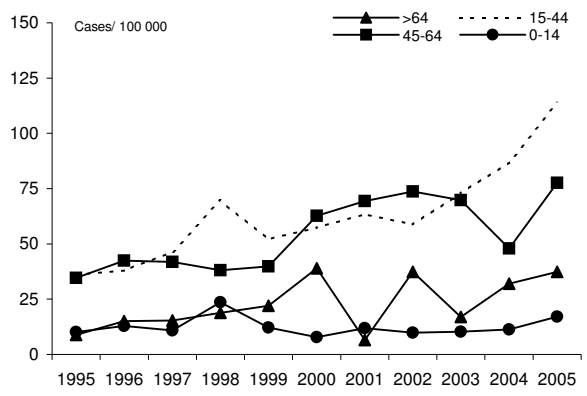
Treatment Outcome Monitoring, 2004

Geographic coverage	DOTS areas	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	563	
Success	377	(67%)
Died	22	(4%)
Failed	43	(8%)
Still on treatment	0	(0%)
Lost to follow up	121	(21%)

Tuberculosis notification rates by sex, 1995-2005



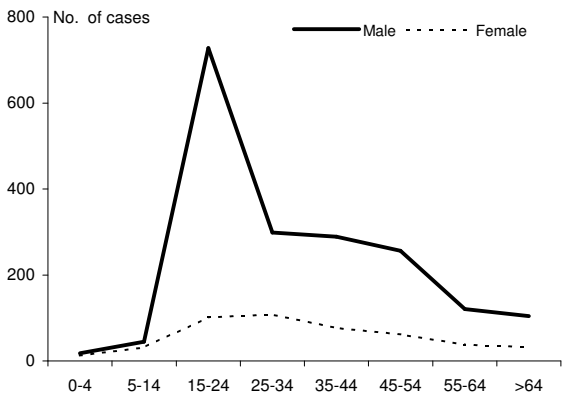
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

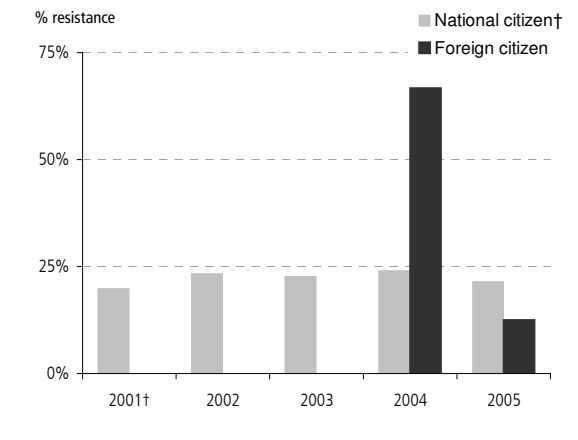
No foreign citizens reported

Tuberculosis cases by age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



† Origin unknown in 2001

Outcomes, new pulmonary smear positive cases, 2001-2004

Data representativeness unknown

Austria

Tuberculosis case notifications, 2005

Total number of cases	954	
Notification rate per 100 000	11.6	
Sex ratio (M:F)	2.0	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	25-34 years	
Foreign citizens	420	(44.0%)
New (never-treated)	900	(94.3%)
Culture positive	634	(66.5%)
Pulmonary	776	(81.3%)
of which sputum smear positive	244	(31.4%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	0.50	

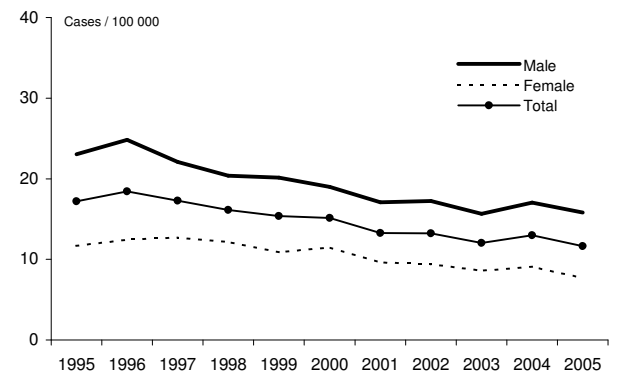
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes (2003)	
Case-linked data reporting	Yes	
Cases with DST results	590	
Cases resistant to isoniazid	57	(9.7%)
Cases resistant to rifampicin	16	(2.7%)
MDR cases	13	(2.2%)
Cases resistant to ethambutol	10	(1.7%)
Cases resistant to streptomycin	41	(6.9%)

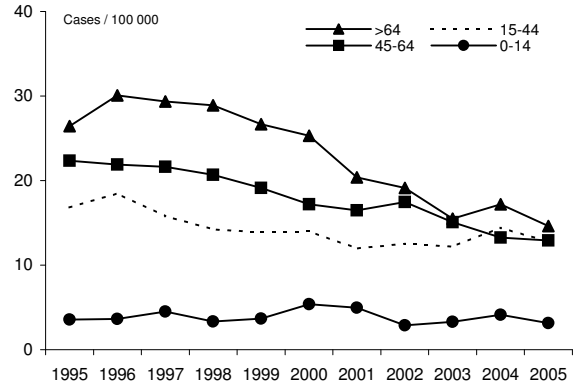
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	584	
Success	405	(69%)
Died	53	(9%)
Failed	0	(0%)
Still on treatment	35	(6%)
Lost to follow up	91	(16%)

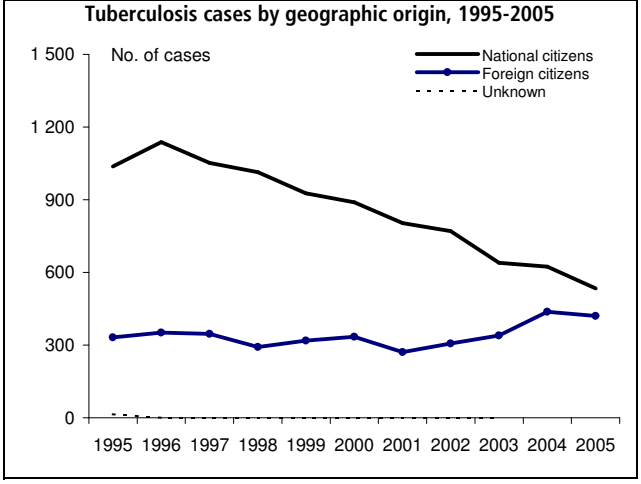
Tuberculosis notification rates by sex, 1995-2005



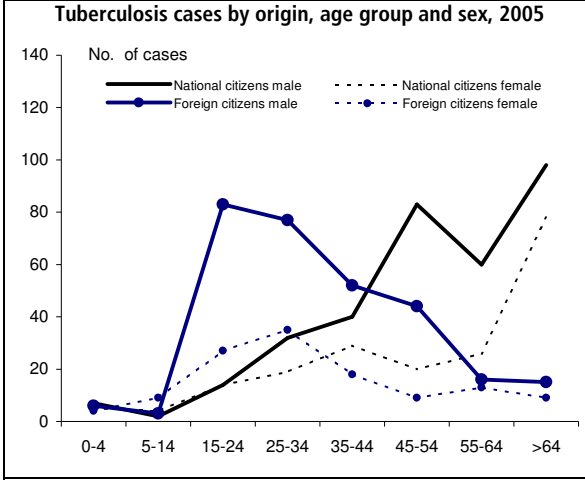
Tuberculosis notification rates by age group, 1995-2005



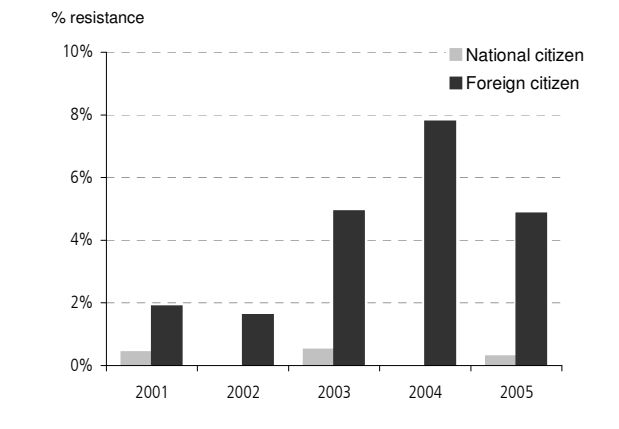
Tuberculosis cases by geographic origin, 1995-2005



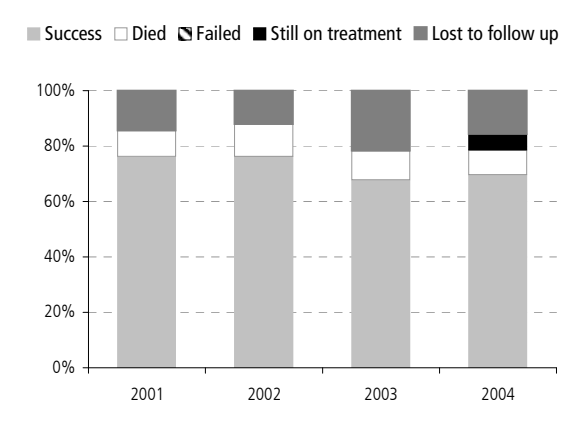
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Azerbaijan

Tuberculosis case notifications, 2005

Total number of cases	7 920	
Notification rate per 100 000	94.2	
Sex ratio (M:F)	2.0	
Median age-group, nationals	35-44	years
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	4 720	(59.6%)
Culture positive	-	-
Pulmonary	7 269	(91.8%)
of which sputum smear positive	2 875	(39.6%)
HIV positive TB cases (2003)	8	(0.2%)
TB deaths per 100 000 (2002)	12.47	

Drug Resistance Surveillance, 2004

Geographic coverage	Partial	
International proficiency testing	No	
Case-linked data reporting	No *	
Cases with DST results	500	
Cases resistant to isoniazid	56	(11.2%)
Cases resistant to rifampicin	47	(9.4%)
MDR cases	17	(3.4%)
Cases resistant to ethambutol	37	(7.4%)
Cases resistant to streptomycin	133	(26.6%)

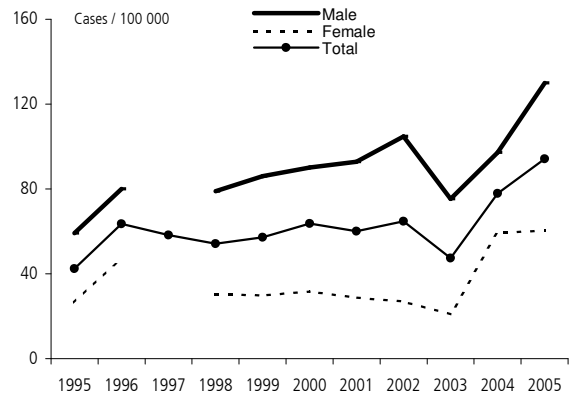
*** From all DST labs (representativeness unknown)**

Culture and DST not routinely performed

Treatment Outcome Monitoring, 2004

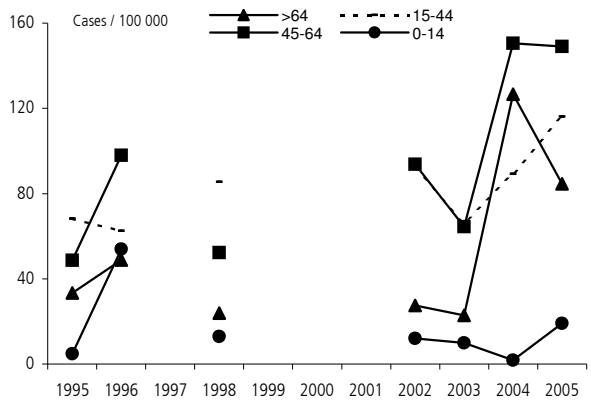
Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	4 437	
Success	2 151	(48%)
Died	219	(5%)
Failed	695	(16%)
Still on treatment	0	(0%)
Lost to follow up	1 372	(31%)

Tuberculosis notification rates by sex, 1995-2005†



† Expansion of treatment programme in 2004

Tuberculosis notification rates by age group, 1995-2005†

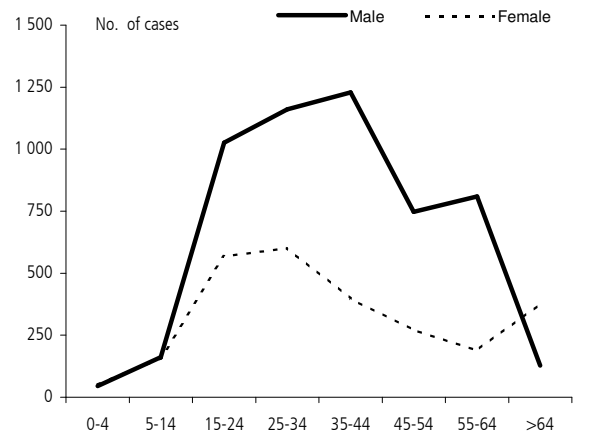


† Expansion of treatment programme in 2004

Tuberculosis cases by geographic origin, 1995-2005

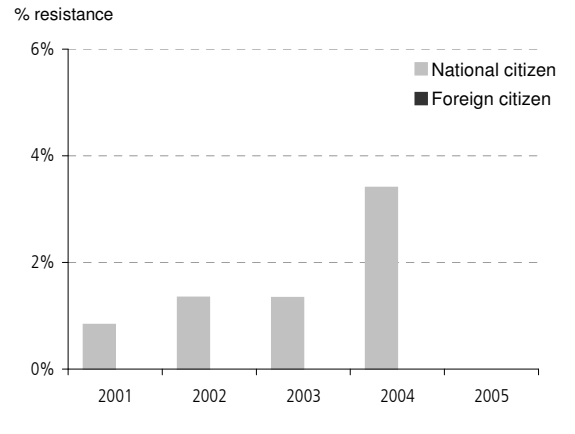
No foreign citizens reported

Tuberculosis cases by age group and sex, 2005



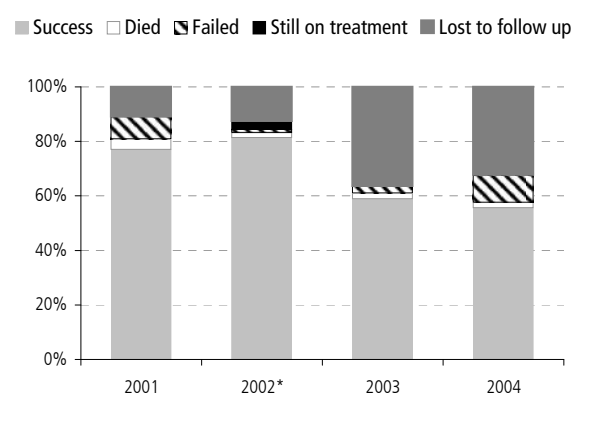
Combined multidrug resistance, by origin, 2001-2005‡

Data representativeness unknown



‡ No data in 2005

Outcomes, new pulmonary smear positive cases, 2001-2004



*** Data representativeness unknown in 2002**

Belarus

Tuberculosis case notifications, 2005

Total number of cases	6 357	
Notification rate per 100 000	65.2	
Sex ratio (M:F)*	2.6	
Median age-group, nationals*	35-44	years
Median age-group, non-nationals	-	
Foreign born/citizens	-	-
New (never-treated)	5 276	(83.0%)
Culture positive	2 295	(36.1%)
Respiratory	5 938	(93.4%)
of which sputum smear positive	1 235	(20.8%)
HIV positive new TB cases	32	(0.6%)
TB deaths per 100 000 (2003)	10.4	

*Retreated cases not included

Drug Resistance Surveillance, 2000

Geographic coverage	National	
International proficiency testing	No	
Case-linked data reporting	No †	
Cases with DST results	2 060	
Cases resistant to isoniazid	-	-
Cases resistant to rifampicin	-	-
MDR cases	220	(10.7%)
Cases resistant to ethambutol	-	-
Cases resistant to streptomycin	-	-

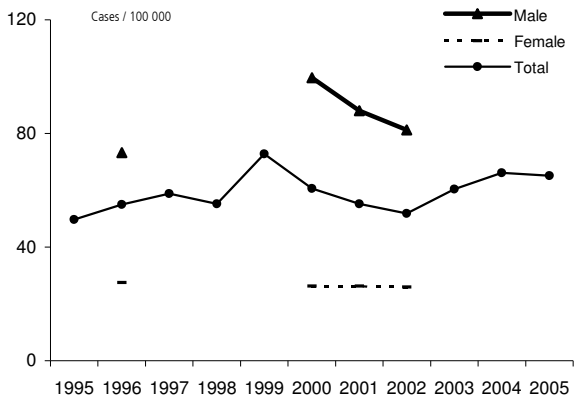
† Reported as aggregate data on new cases

Culture not routinely perfomed

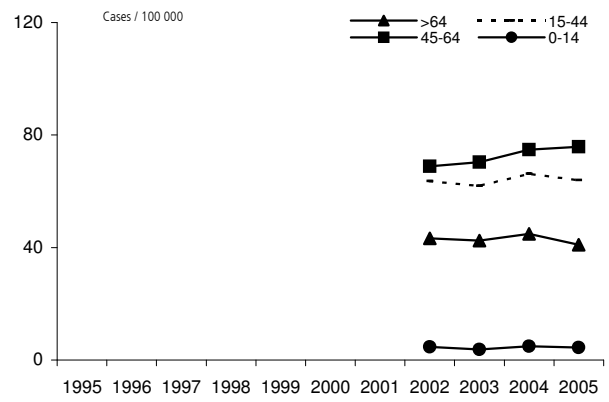
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**New pulm smear &/or culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	2 284	
Success	1 699	(74%)
Died	210	(9%)
Failed	204	(9%)
Still on treatment	0	(0%)
Lost to follow up	171	(7%)

Tuberculosis notification rates, 1995-2005



Tuberculosis notification rates by age group, 1995-2005 §



§Retreated cases not included 2003-2005

Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

Tuberculosis cases by origin, age group and sex, 2005*

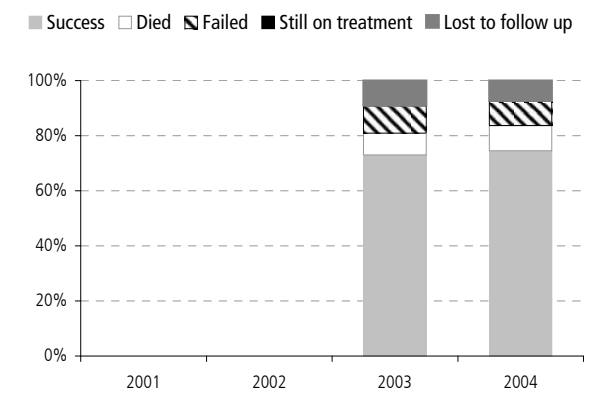
* Retreated cases not included

Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary smear positive cases, 2001-2004

Data representativeness unknown



Belgium

Tuberculosis case notifications, 2005

Total number of cases	1 144	
Notification rate per 100 000	11.0	
Sex ratio (M:F)	1.6	
Median age-group, nationals	55-64	years
Median age-group, non-nationals	25-34	years
Foreign citizens	581	(50.8%)
New (not previously diagnosed)	878	(76.7%)
Culture positive	849	(74.2%)
Pulmonary	835	(73.0%)
of which smear positive*	401	(48.0%)
HIV positive TB cases	52	(4.5%)
TB deaths per 100 000	-	

*Including smear of specimens other than sputum

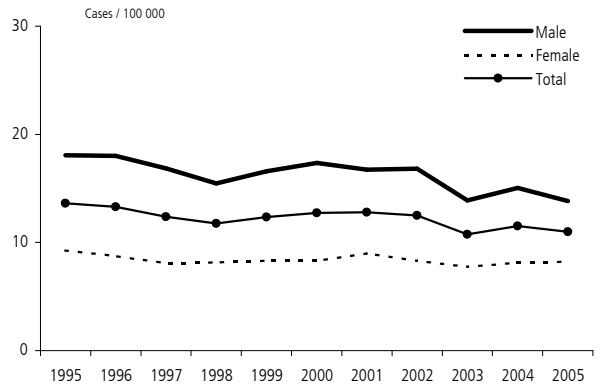
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	768	
Cases resistant to isoniazid	42	(5.5%)
Cases resistant to rifampicin	13	(1.7%)
MDR cases	11	(1.4%)
Cases resistant to ethambutol	14	(1.8%)
Cases resistant to streptomycin	-	-

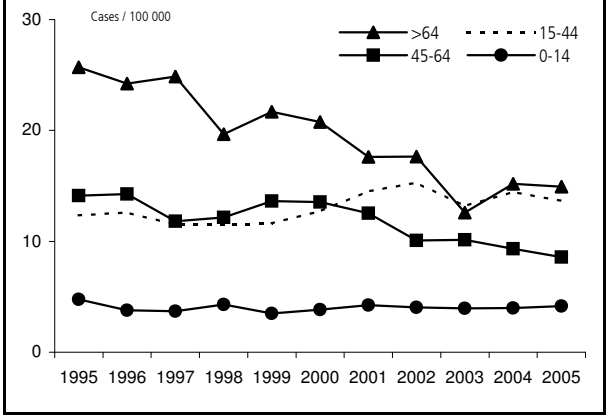
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Cases included in cohort	718	
Success	500	(70%)
Died	74	(10%)
Failed	1	(0%)
Still on treatment	24	(3%)
Lost to follow up	119	(17%)

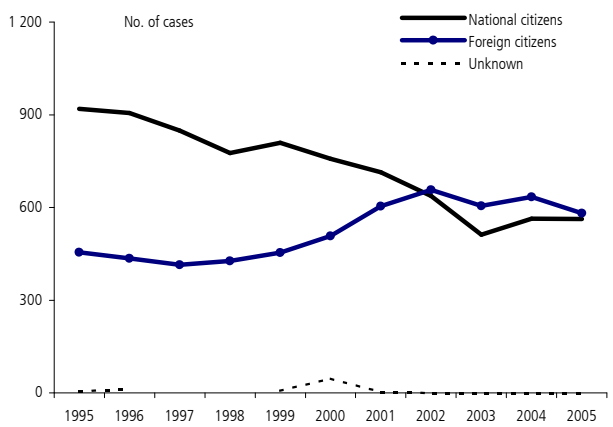
Tuberculosis notification rates by sex, 1995-2005



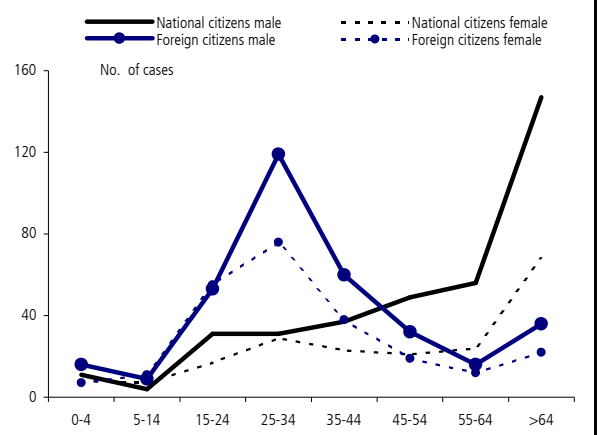
Tuberculosis notification rates by age group, 1995-2005



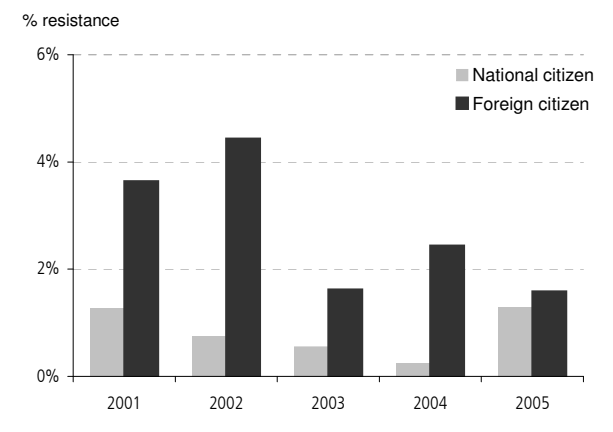
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004

Bosnia & Herzegovina

Tuberculosis case notifications, 2005

Total number of cases	2 160	
Notification rate per 100 000	55.3	
Sex ratio (M:F)	1.2	
Median age-group, nationals	55-64	years
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	2 004	(92.8%)
Culture positive	1 142	(52.9%)
Pulmonary	1 896	(87.8%)
of which sputum smear positive	700	(36.9%)
HIV positive TB cases	-	
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes *	
Cases with DST results	1 141	
Cases resistant to isoniazid	22	(1.9%)
Cases resistant to rifampicin	21	(1.8%)
MDR cases	11	(1.0%)
Cases resistant to ethambutol	-	-
Cases resistant to streptomycin	-	-

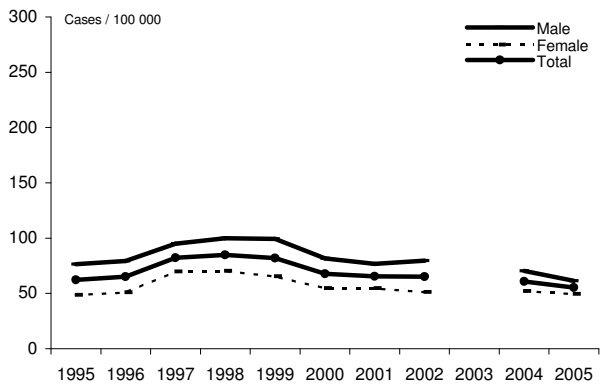
*** DST results shown from aggregated data**

Treatment Outcome Monitoring, 2004

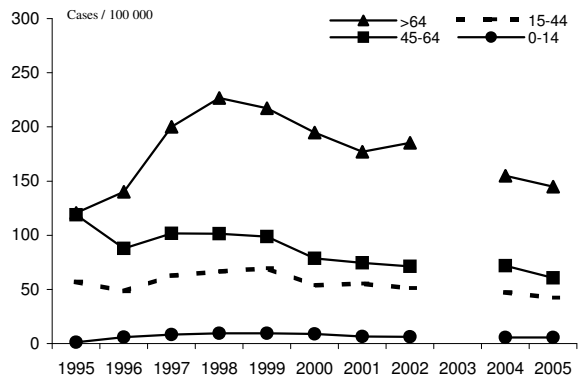
Geographic coverage	National †	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	1 122	
Success	1 096	(98%)
Died	8	(1%)
Failed	4	(0%)
Still on treatment	1	(0%)
Lost to follow up	13	(1%)

† Data representativeness unknown

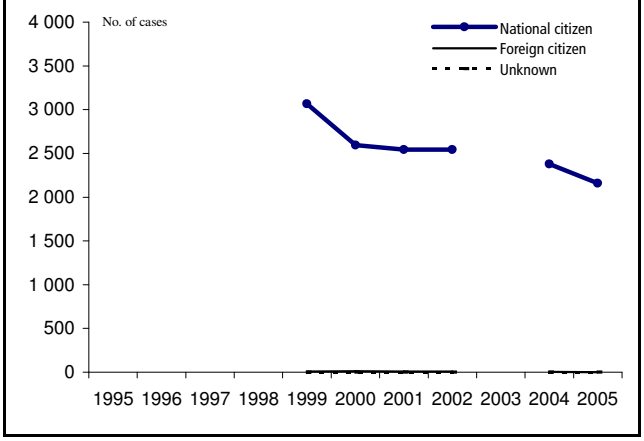
Tuberculosis notification rates by sex, 1995-2005



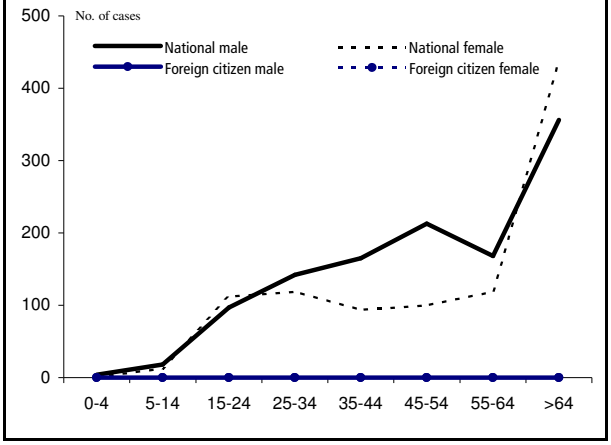
Tuberculosis notification rates by age group, 1995-2005



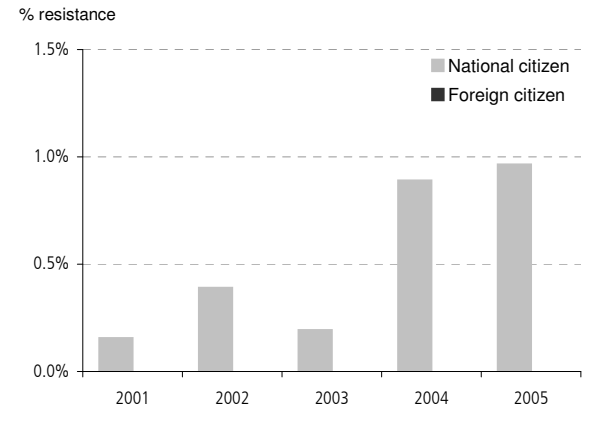
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



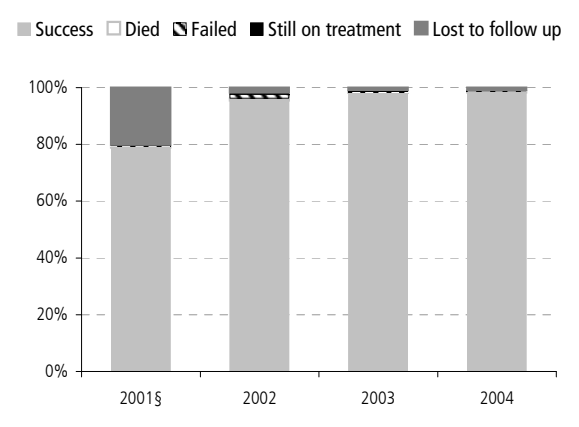
Combined multidrug resistance, by origin, 2001-2005‡



‡ Federation of Bosnia only in 2002-4

Outcomes, new pulmonary culture positive cases, 2001-2004

Data representativeness unknown§



§ Nationwide representative data in 2001

Bulgaria

Tuberculosis case notifications, 2005

Total number of cases	3 302	
Cases per 100 000	42.7	
Sex ratio (M:F)	2.0	
Median age-group (all cases)	45-54 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	3 101	(93.9%)
Culture positive	1 254	(38.0%)
Respiratory	2 926	(88.6%)
of which sputum smear positive	1 338	(45.7%)
HIV positive TB cases (2004)	10	(0.3%)
TB deaths per 100 000 (2004)	3.44	

Drug Resistance Surveillance, 2005

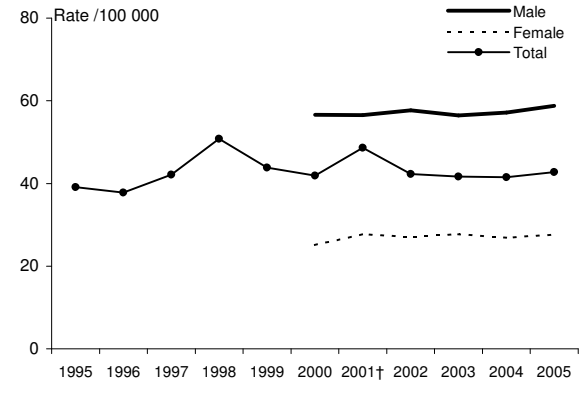
International proficiency testing	No	
Geographic coverage	Partial *	
Case-linked data reporting	No	
Cases with DST results	1 173	
Cases resistant to isoniazid	133	(11.3%)
Cases resistant to rifampicin	76	(6.5%)
MDR cases	47	(4.0%)
Cases resistant to ethambutol	65	(5.5%)
Cases resistant to streptomycin	73	(6.2%)

*** A network of selected labs (representativeness unknown)**

Treatment Outcome Monitoring, 2004

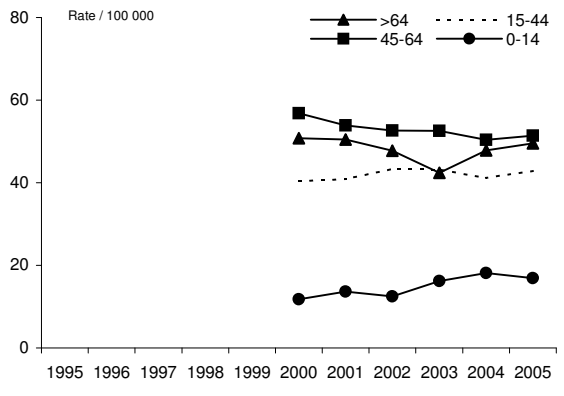
Geographic coverage	National	
Cohort	**Pulm smear &/or culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	1 417	
Success	1 102	(78%)
Died	53	(4%)
Failed	63	(4%)
Still on treatment	5	(0%)
Lost to follow up	194	(14%)

Tuberculosis notification rates by sex, 1995-2005†



† 14% with sex unknown in 2001

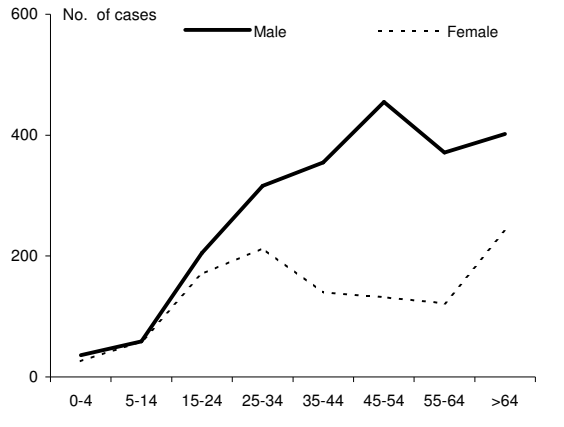
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

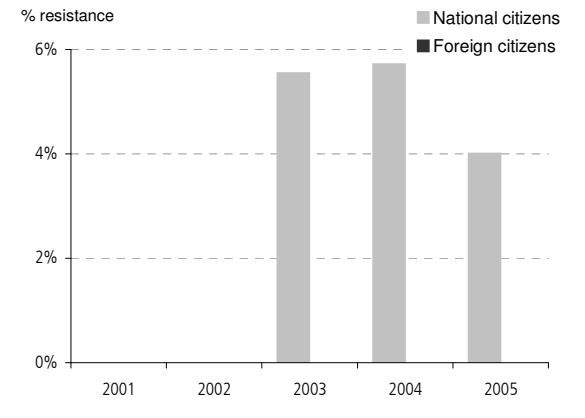
Not available

Tuberculosis cases by age group and sex, 2005



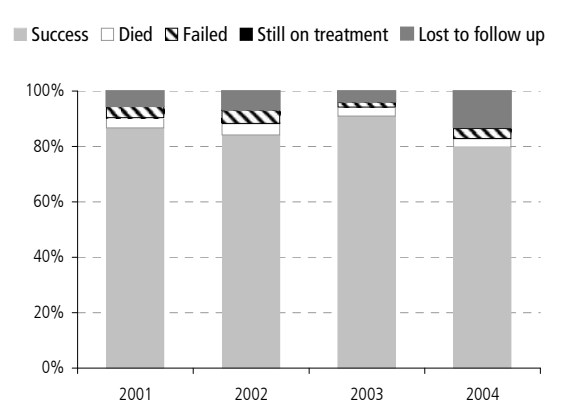
Combined multidrug resistance, by origin, 2001-2005‡

Data representativeness unknown



‡ No data by geographic origin 2001-2002

Outcomes, new pulmonary definite cases, 2001-2004



Croatia

Tuberculosis case notifications, 2005

Total number of cases	1 144	
Notification rate per 100 000	25.1	
Sex ratio (M:F)	1.7	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	45-54 years	
Foreign born*	101	(8.8%)
New (never-treated)	1 043	(91.2%)
Culture positive	640	(55.9%)
Pulmonary	1 037	(90.6%)
of which sputum smear positive	417	(40.2%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	3.42	

***45% of cases with unknown origin**

Drug Resistance Surveillance, 2005

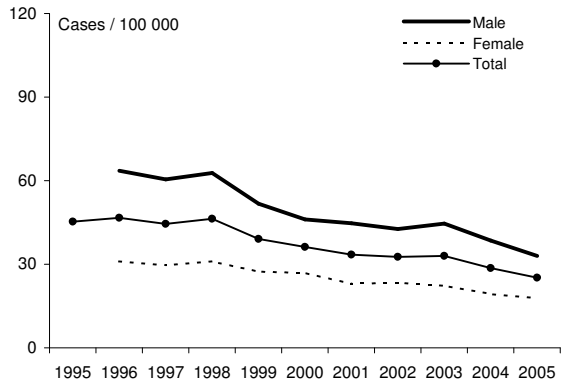
Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	640	
Cases resistant to isoniazid	16	(2.5%)
Cases resistant to rifampicin	9	(1.4%)
MDR cases	7	(1.1%)
Cases resistant to ethambutol	6	(0.9%)
Cases resistant to streptomycin	13	(2.0%)

Treatment Outcome Monitoring, 2004

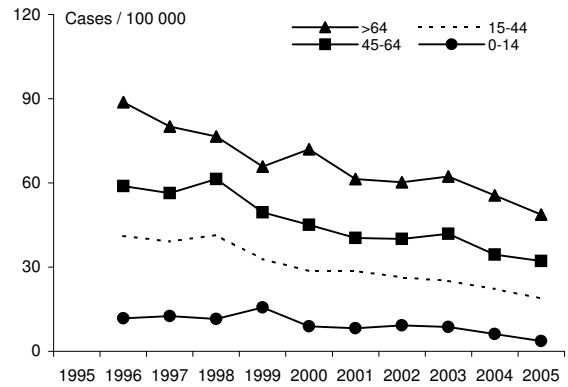
Geographic coverage	National †	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	717	
Success	302	(42%)
Died	54	(8%)
Failed	0	(0%)
Still on treatment	9	(1%)
Lost to follow up	352	(49%)

† Data representativeness unknown

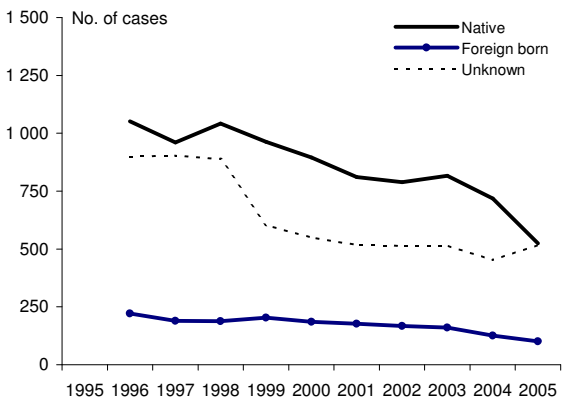
Tuberculosis notification rates by sex, 1995-2005



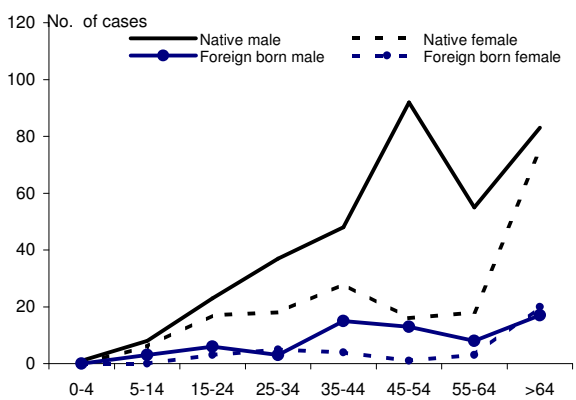
Tuberculosis notification rates by age group, 1995-2005



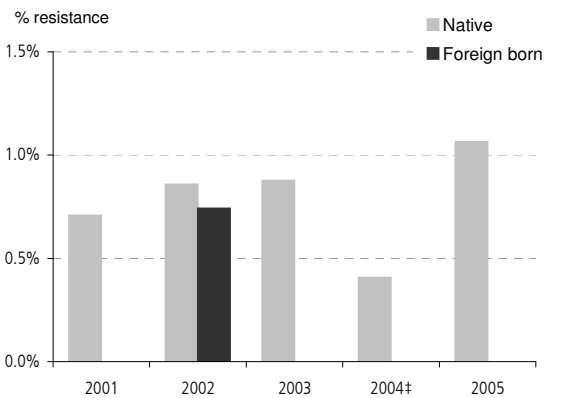
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



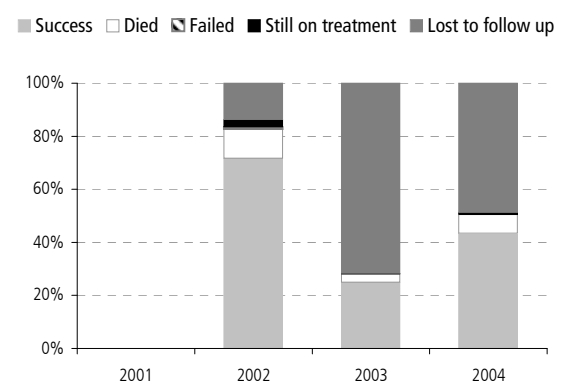
Combined multidrug resistance, by origin, 2001-2005



‡ Data representativeness unknown in 2004

Outcomes, new pulmonary culture positive cases, 2001-2004

Data representativeness unknown



Cyprus

Tuberculosis case notifications, 2005

Total number of cases	37	
Notification rate per 100 000	4.4	
Sex ratio (M:F)	2.1	
Median age-group, nationals	55-64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	25	(67.6%)
New (never-treated)	33	(89.2%)
Culture positive	19	(51.4%)
Pulmonary	24	(64.9%)
of which sputum smear positive	9	(37.5%)
HIV positive TB cases	-	
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	- *	
Case-linked data reporting	Yes	
Cases with DST results	17	
Cases resistant to isoniazid	6	(35.3%)
Cases resistant to rifampicin	1	(5.9%)
MDR cases	1	(5.9%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	3	(17.6%)

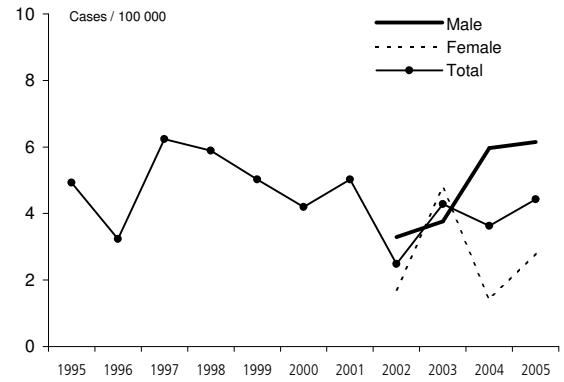
*** DST done abroad**

Treatment Outcome Monitoring, 2004

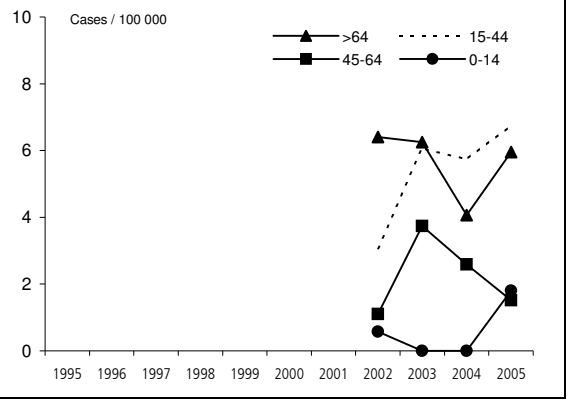
Geographic coverage	National †	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	19	
Success	7	(37%)
Died	3	(16%)
Failed	0	(0%)
Still on treatment	0	(0%)
Lost to follow up	9	(47%)

† Data representativeness unknown

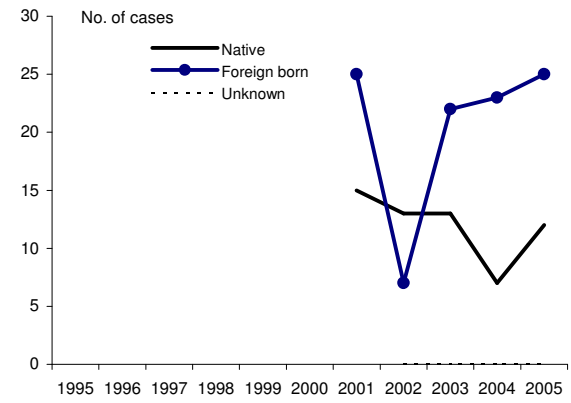
Tuberculosis notification rates, 1995-2005



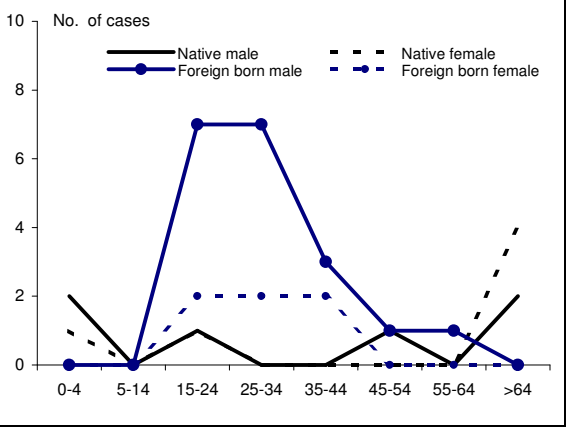
Tuberculosis notification rates by age group, 1995-2005



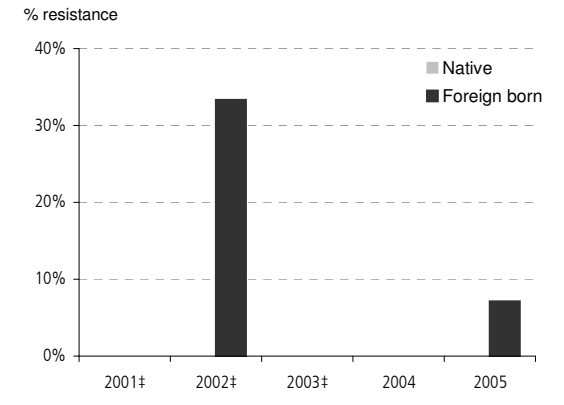
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005‡



‡ No data in 2001; data representativeness unknown in 2002-2003

Outcomes, new pulmonary culture positive cases, 2001-2004

Data representativeness unknown

Czech Republic

Tuberculosis case notifications, 2005

Total number of cases	1 007	
Notification rate per 100 000	9.9	
Sex ratio (M:F)	1.8	
Median age-group, nationals	55-64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	130	(12.9%)
New (never-treated)	973	(96.6%)
Culture positive	645	(64.1%)
Pulmonary	800	(79.4%)
of which sputum smear positive	321	(40.1%)
HIV positive TB cases (2003)	2	(0.2%)
TB deaths per 100 000 (2004)	0.67	

Drug Resistance Surveillance, 2005

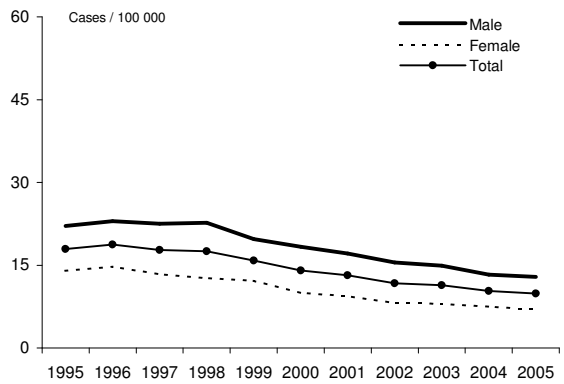
Geographic coverage	National *	
International proficiency testing	Yes (2006)	
Case-linked data reporting	Yes	
Cases with DST results	483	
Cases resistant to isoniazid	19	(3.9%)
Cases resistant to rifampicin	10	(2.1%)
MDR cases	10	(2.1%)
Cases resistant to ethambutol	8	(1.7%)
Cases resistant to streptomycin	21	(4.3%)

*** Data representativeness unknown**

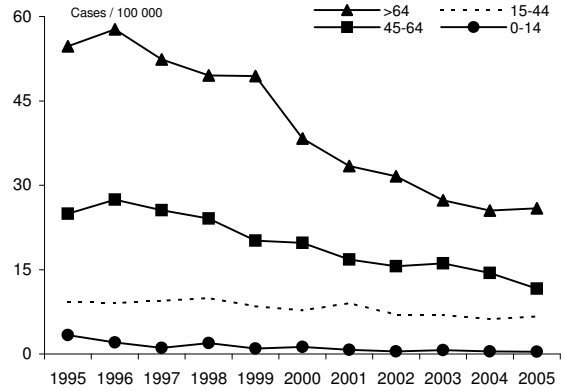
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	562	
Success	389	(69%)
Died	36	(6%)
Failed	1	(0%)
Still on treatment	39	(7%)
Lost to follow up	97	(17%)

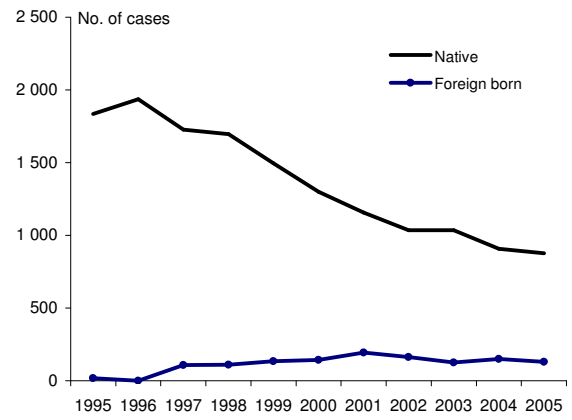
Tuberculosis notification rates by sex, 1995-2005



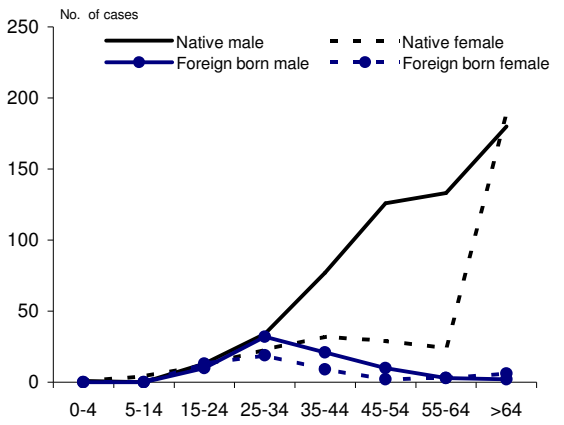
Tuberculosis notification rates by age group, 1995-2005



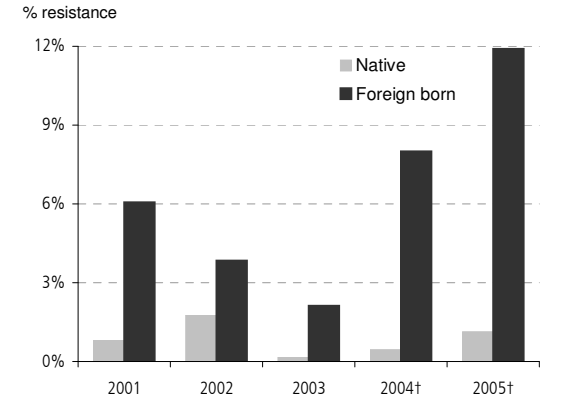
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004

† Data representativeness unknown in 2004-2005

Denmark

Tuberculosis case notifications, 2005

Total number of cases	424 *	
Notification rate per 100 000	7.8	
Sex ratio (M:F)	1.5	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	25-34 years	
Foreign born	258	(60.8%)
New (not previously diagnosed)	395	(93.2%)
Culture positive	326	(76.9%)
Pulmonary	295	(69.6%)
of which sputum smear positive	136	(46.1%)
HIV positive TB cases	9	(2.1%)
TB deaths per 100 000 (2001)	0.43	

*** Excluding Greenland (99 cases in 2005)**

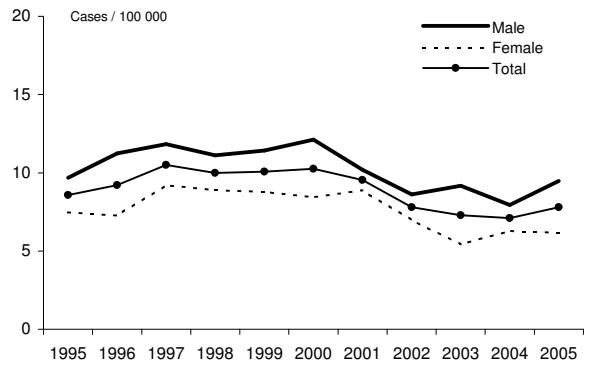
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	326	
Cases resistant to isoniazid	18	(5.5%)
Cases resistant to rifampicin	5	(1.5%)
MDR cases	5	(1.5%)
Cases resistant to ethambutol	7	(2.1%)
Cases resistant to streptomycin	-	-

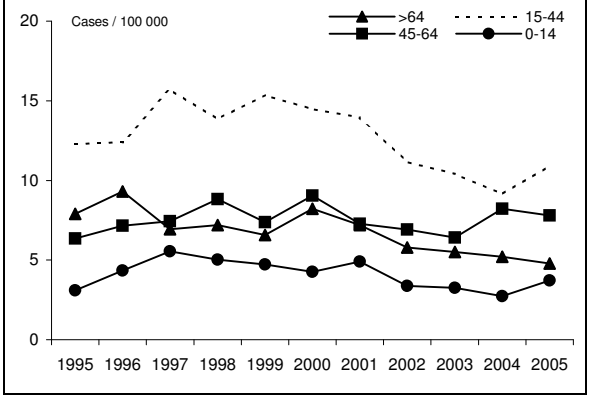
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	219	
Success	185	(84%)
Died	15	(7%)
Failed	1	(0%)
Still on treatment	1	(0%)
Lost to follow up	17	(8%)

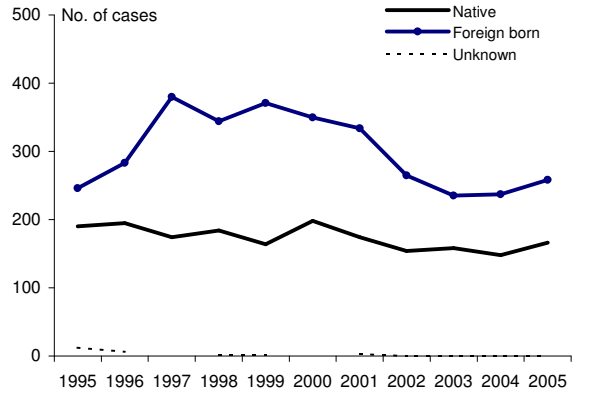
Tuberculosis notification rates by sex, 1995-2005



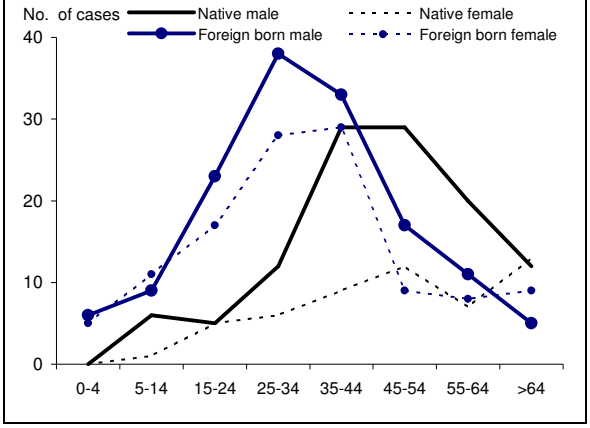
Tuberculosis notification rates by age group, 1995-2005



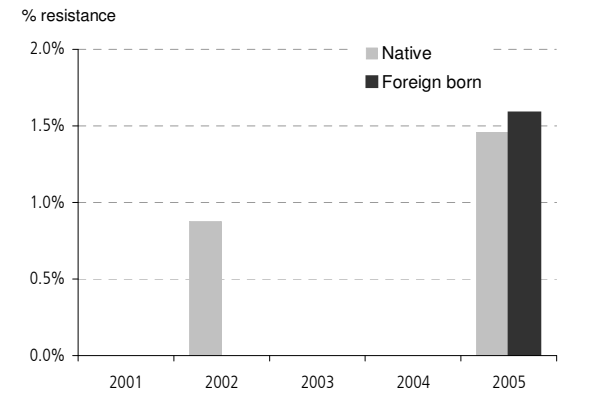
Tuberculosis cases by geographic origin, 1995-2005



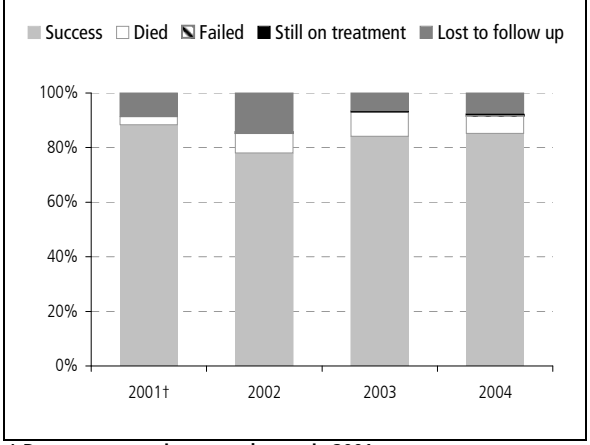
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



† Data representativeness unknown in 2001

Estonia

Tuberculosis case notifications, 2005

Total number of cases	519	
Notification rate per 100 000	39.0	
Sex ratio (M:F)	1.9	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	45-54 years	
Foreign born	84	(16.2%)
New (never-treated)	425	(81.9%)
Culture positive	390	(75.1%)
Pulmonary	468	(90.2%)
of which sputum smear positive	201	(42.9%)
HIV positive TB cases	33	(6.4%)
TB deaths per 100 000 (2004)	7.26	

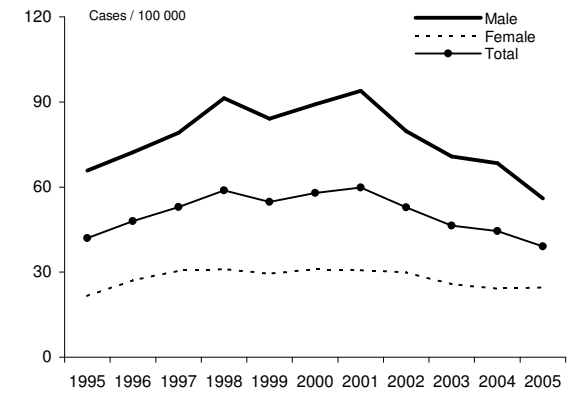
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	387	
Cases resistant to isoniazid	108	(27.9%)
Cases resistant to rifampicin	79	(20.4%)
MDR cases	79	(20.4%)
Cases resistant to ethambutol	77	(19.9%)
Cases resistant to streptomycin	124	(32.0%)

Treatment Outcome Monitoring, 2004

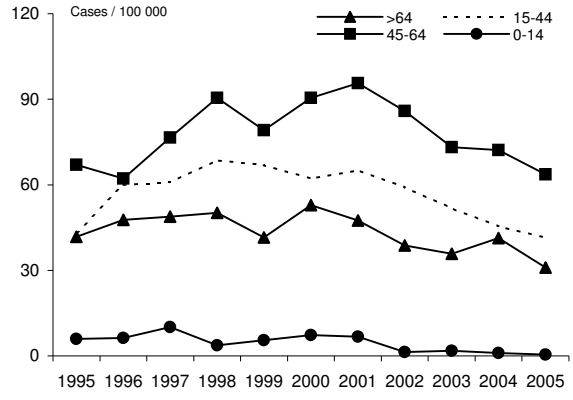
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	426	
Success	270	(63%)
Died	49	(12%)
Failed	3	(1%)
Still on treatment	62	(15%)
Lost to follow up	42	(10%)

Tuberculosis notification rates by sex, 1995-2005*



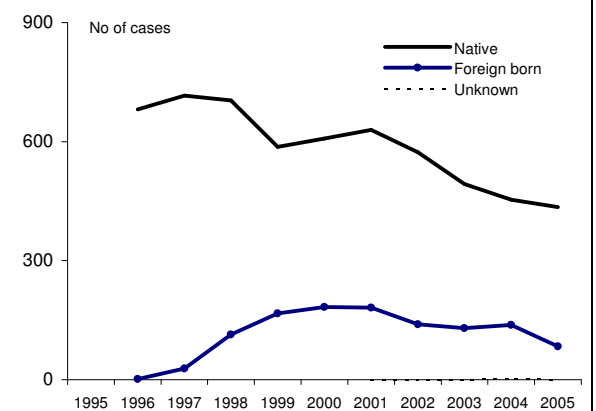
*** Retreated cases other than relapses included since 2001**

Tuberculosis notification rates by age group, 1995-2005*



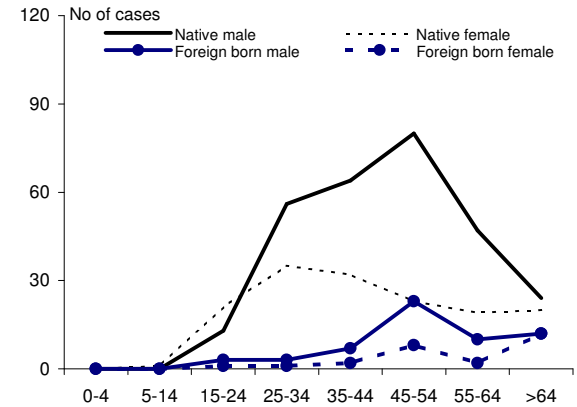
*** Retreated cases other than relapses included since 2001**

Tuberculosis cases by geographic origin, 1995-2005*

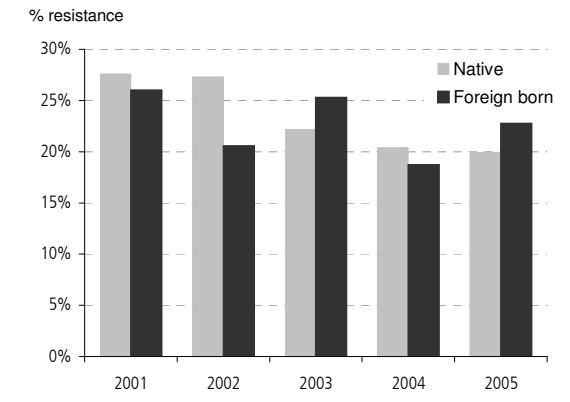


*** Retreated cases other than relapses included since 2001**

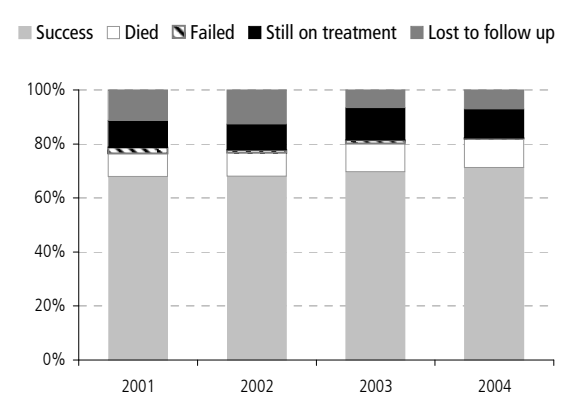
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Finland

Tuberculosis case notifications, 2005

Total number of cases	361	
Notification rate per 100 000	6.9	
Sex ratio (M:F)	1.3	
Median age-group, nationals	>64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	36	(10.0%)
New (not previously diagnosed)*	231	(64.0%)
Culture positive	316	(87.5%)
Pulmonary	263	(72.9%)
of which sputum smear positive	134	(51.0%)
HIV positive TB cases	3	(0.8%)
TB deaths per 100 000 (2004)	0.56	

*30% of cases missing history of previous TB

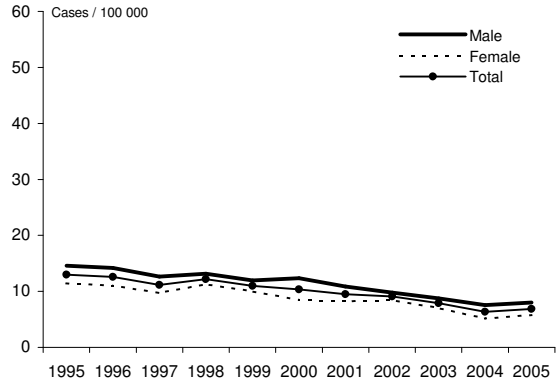
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	315	
Cases resistant to isoniazid	11	(3.5%)
Cases resistant to rifampicin	4	(1.3%)
MDR cases	3	(1.0%)
Cases resistant to ethambutol	4	(1.3%)
Cases resistant to streptomycin	3	(1.0%)

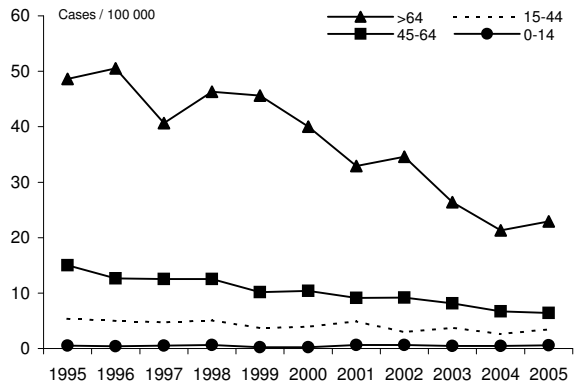
Treatment Outcome Monitoring, 2004

Not available

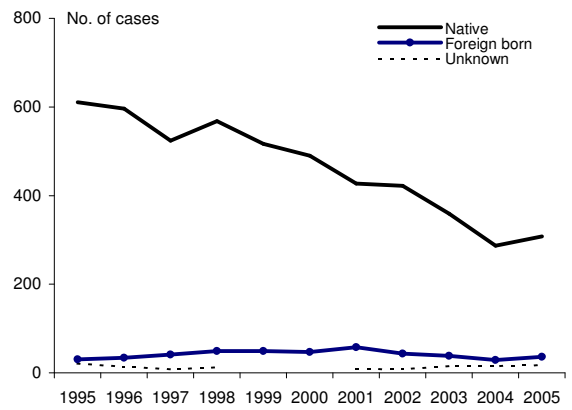
Tuberculosis notification rates by sex, 1995-2005



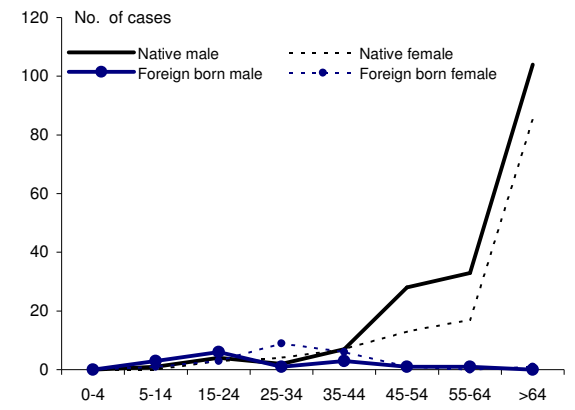
Tuberculosis notification rates by age group, 1995-2005



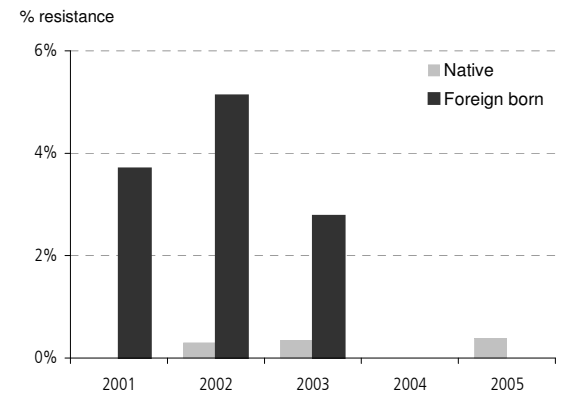
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

France

Tuberculosis case notifications, 2005

Total number of cases	5 374	
Notification rate per 100 000	8.6	
Sex ratio (M:F)	1.5	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	35-44 years	
Foreign born	2 433	(45.3%)
New (never-treated)	4 453	(82.9%)
Culture positive	2 163	(40.2%)
Pulmonary	3 800	(70.7%)
of which sputum smear positive	2 119	(55.8%)
HIV positive TB cases (2001)	364	(5.6%)
TB deaths per 100 000 (2003)	0.83	

Drug Resistance Surveillance, 2005

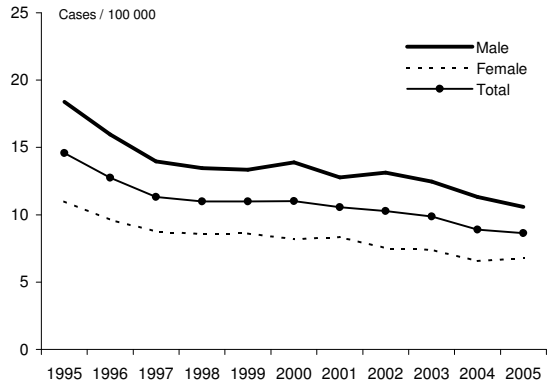
Geographic coverage	National *	
International proficiency testing	Yes	
Case-linked data reporting	No	
Cases with DST results	1 501	
Cases resistant to isoniazid	94	(6.3%)
Cases resistant to rifampicin	26	(1.7%)
MDR cases	24	(1.6%)
Cases resistant to ethambutol	13	(0.9%)
Cases resistant to streptomycin	80	(5.3%)

*** Data from sentinel network of laboratories**

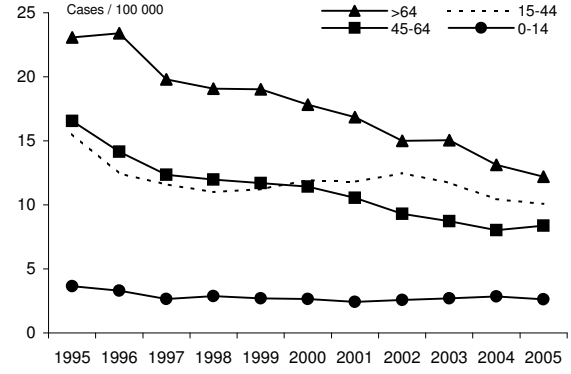
Treatment Outcome Monitoring, 2004

Not available
(to start in 2007)

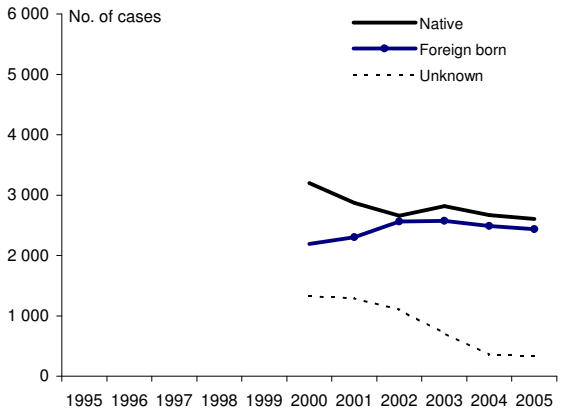
Tuberculosis notification rates by sex, 1995-2005



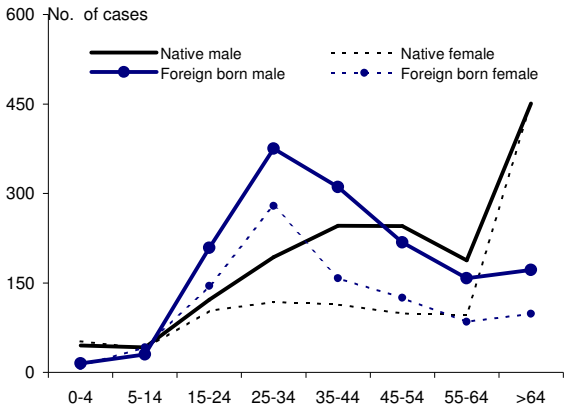
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

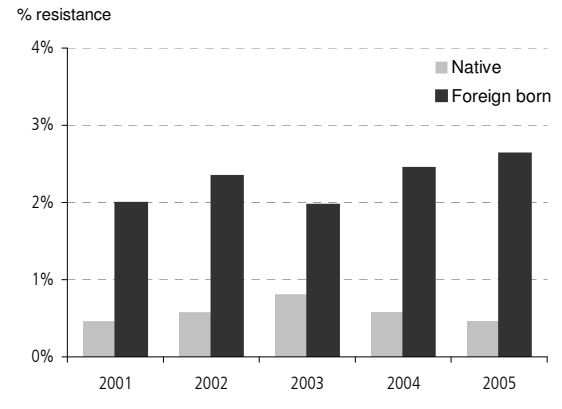


Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005

Sentinel laboratory network data



Outcomes, new pulmonary culture positive cases, 2001-2004

Not available
(to start in 2007)

Georgia

Tuberculosis case notifications, 2005

Total number of cases	6 448 *	
Notification rate per 100 000	144.1	
Sex ratio (M:F)	2.6	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	4 243	(65.8%)
Culture positive	257	(4.0%)
Pulmonary	5 076	(78.7%)
of which sputum smear positive	2 597	(51.2%)
HIV positive TB cases	13	(0.2%)
TB deaths per 100 000 (2001)	5.61	

*** Excluding Abkhazia and Southern Ossetia**

Drug Resistance Surveillance, 2005

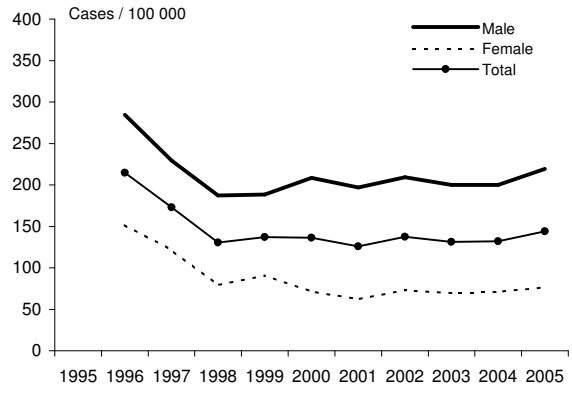
Geographic coverage	National †	
International proficiency testing	Yes (2004)	
Case-linked data reporting	No †	
Cases with DST results	1 422	
Cases resistant to isoniazid	474	(33.3%)
Cases resistant to rifampicin	233	(16.4%)
MDR cases	219	(15.4%)
Cases resistant to ethambutol	106	(7.5%)
Cases resistant to streptomycin	691	(48.6%)

† DST Survey 2005-2006; data reported in aggregated format

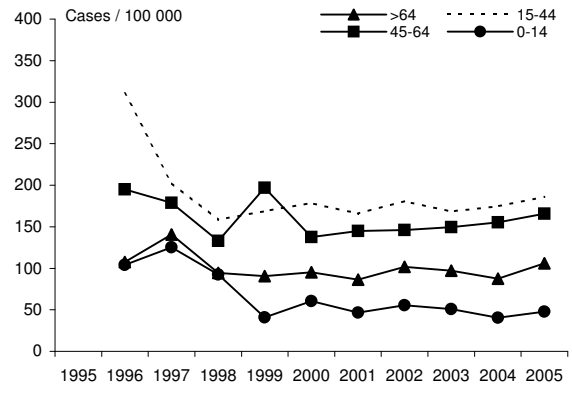
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	2 240	
Success	1 245	(56%)
Died	104	(5%)
Failed	158	(7%)
Still on treatment	0	(0%)
Lost to follow up	733	(33%)

Tuberculosis notification rates by sex, 1995-2005



Tuberculosis notification rates by age group, 1995-2005

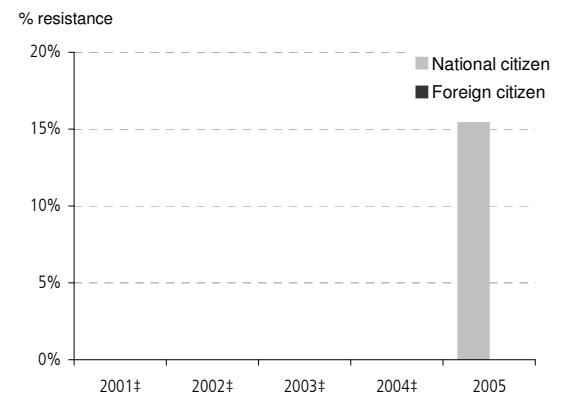


Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

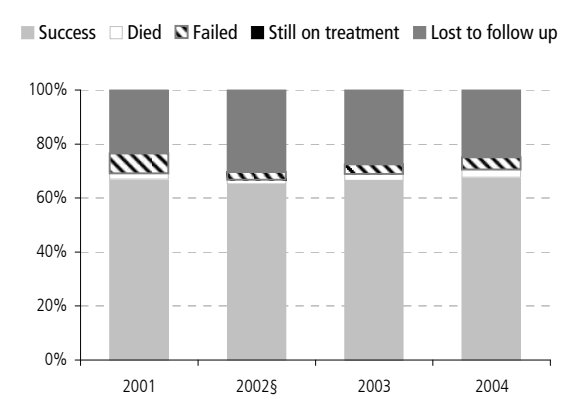
Tuberculosis cases by age group and sex, 2005

Combined multidrug resistance, by origin, 2001-2005‡



‡ No data in 2001-2004

Outcomes, new pulmonary smear positive cases, 2001-2004



§ Data representativeness unknown in 2002

Germany

Tuberculosis case notifications, 2005

Total number of cases	6 045	
Notification rate per 100 000	7.3	
Sex ratio (M:F)	1.5	
Median age-group, nationals	55-64 years	
Median age-group, non-nationals	35-44 years	
Foreign born	2 622	(43.4%)
New (never-treated)	4 591	(75.9%)
Culture positive	4 058	(67.1%)
Pulmonary	4 609	(76.2%)
of which sputum smear positive	1 491	(32.3%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	0.42	

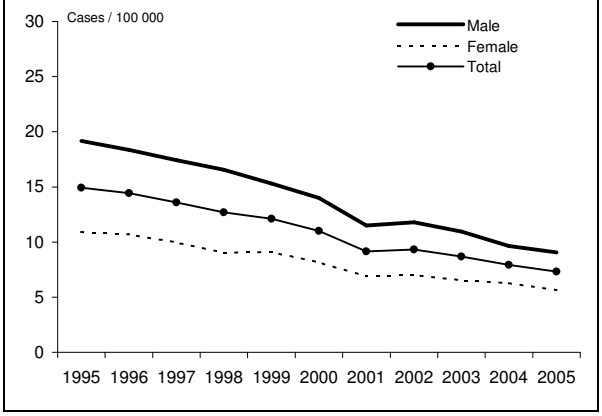
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	3 799	
Cases resistant to isoniazid	315	(8.3%)
Cases resistant to rifampicin	114	(3.0%)
MDR cases	101	(2.7%)
Cases resistant to ethambutol	88	(2.3%)
Cases resistant to streptomycin	325	(8.6%)

Treatment Outcome Monitoring, 2004

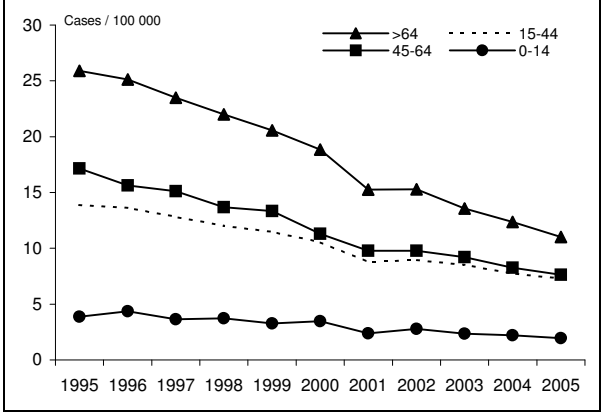
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	3 518	
Success	2 386	(68%)
Died	430	(12%)
Failed	9	(0%)
Still on treatment	214	(6%)
Lost to follow up	479	(14%)

Tuberculosis notification rates by sex, 1995-2005*



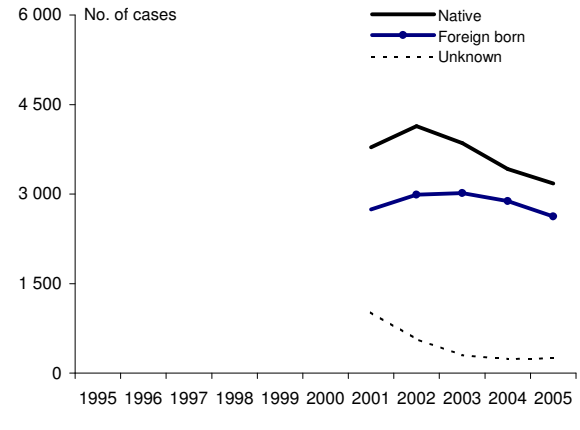
*** Notification system reorganised in 2001**

Tuberculosis notification rates by age group, 1995-2005*



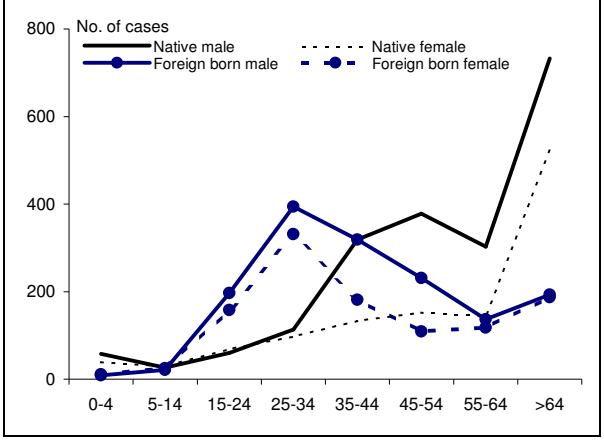
*** Notification system reorganised in 2001**

Tuberculosis cases by geographic origin, 1995-2005*

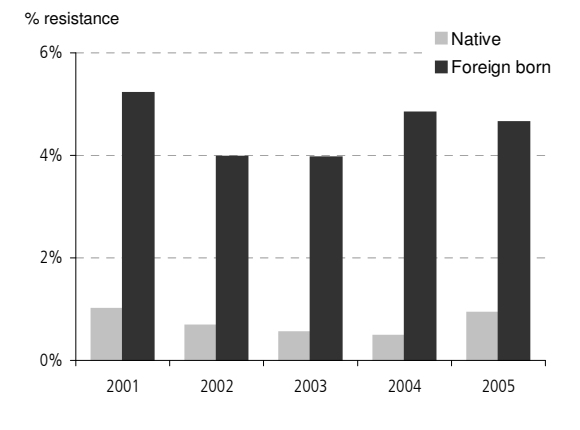


*** Notification system reorganised in 2001**

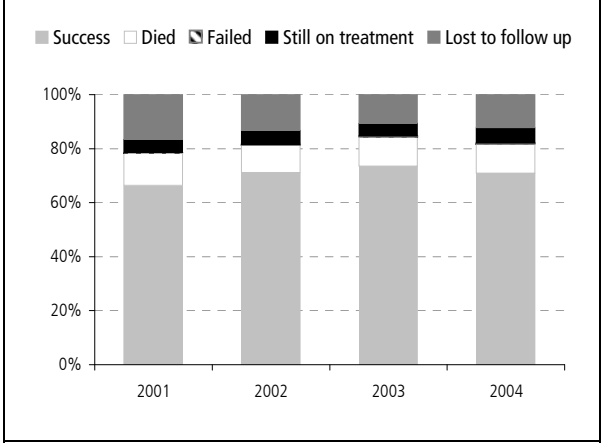
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Greece

Tuberculosis case notifications, 2005

Total number of cases	767	
Notification rate per 100 000	6.9	
Sex ratio (M:F)	1.8	
Median age-group, nationals	55-64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	219	(28.6%)
New (never-treated)	582	(75.9%)
Culture positive	213	(27.8%)
Pulmonary	584	(76.1%)
of which sputum smear positive	226	(38.7%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	0.68	

Drug Resistance Surveillance, 2005

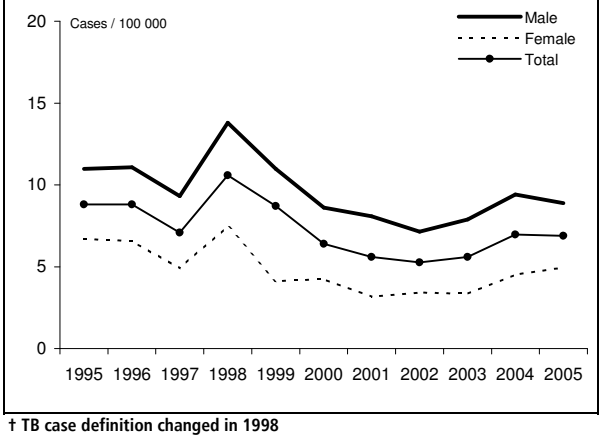
Geographic coverage	National *	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	600	
Cases resistant to isoniazid	40	(6.7%)
Cases resistant to rifampicin	22	(3.7%)
MDR cases	12	(2.0%)
Cases resistant to ethambutol	22	(3.7%)
Cases resistant to streptomycin	62	(10.3%)

*** Data from laboratory network (representativeness unknown)**

Treatment Outcome Monitoring, 2004

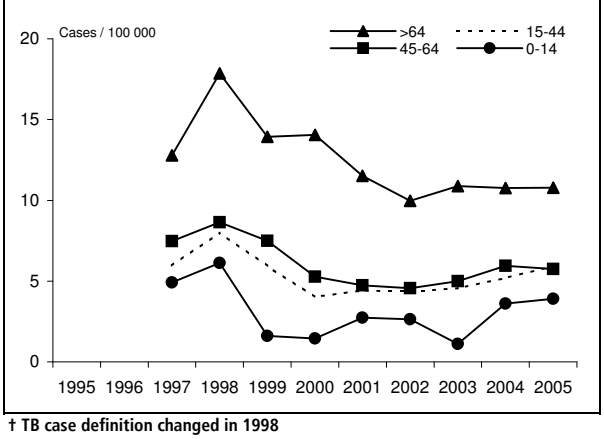
Not available

Tuberculosis notification rates by sex, 1995-2005 †



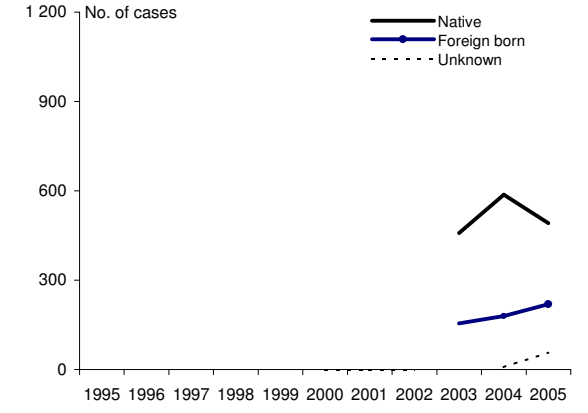
† TB case definition changed in 1998

Tuberculosis notification rates by age group, 1995-2005 †

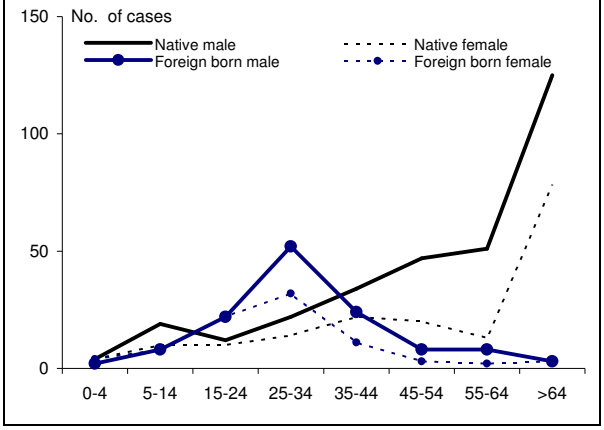


† TB case definition changed in 1998

Tuberculosis cases by geographic origin, 1995-2005

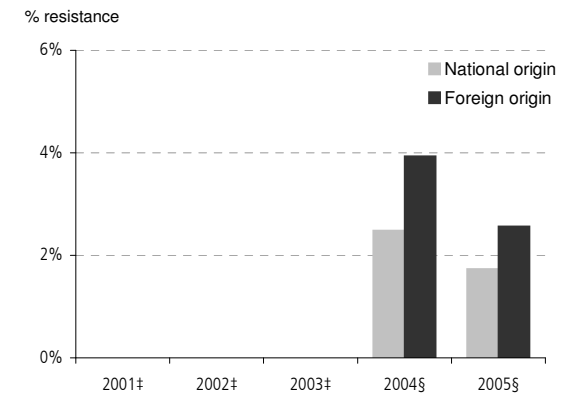


Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin‡, 2001-2005

Data representativeness unknown



‡ No data by geographic origin in 2001-2003
§ By citizenship in 2004 and by birth in 2005

Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

Hungary

Tuberculosis case notifications, 2005

Total number of cases	2 024	
Notification rate per 100 000	20.0	
Sex ratio (M:F)	2.2	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	35-44 years	
Foreign born	62	(3.1%)
New (never-treated)	1 660	(82.0%)
Culture positive	784	(38.7%)
Pulmonary	1 895	(93.6%)
of which sputum smear positive	504	(26.6%)
HIV positive TB cases	-	
TB deaths per 100 000 (2003)	2.32	

Drug Resistance Surveillance, 2005

Geographic coverage	National *	
International proficiency testing	Yes (2003)	
Case-linked data reporting	Yes	
Cases with DST results	536	
Cases resistant to isoniazid	56	(10.4%)
Cases resistant to rifampicin	32	(6.0%)
MDR cases	26	(4.9%)
Cases resistant to ethambutol	-	-
Cases resistant to streptomycin	46	(8.6%)

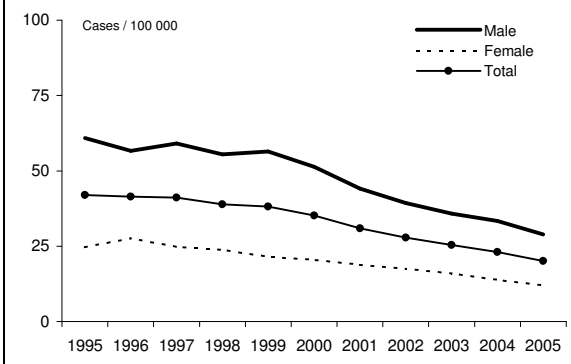
*** Data representativeness unknown**

Culture and DST not routinely performed

Treatment Outcome Monitoring, 2004

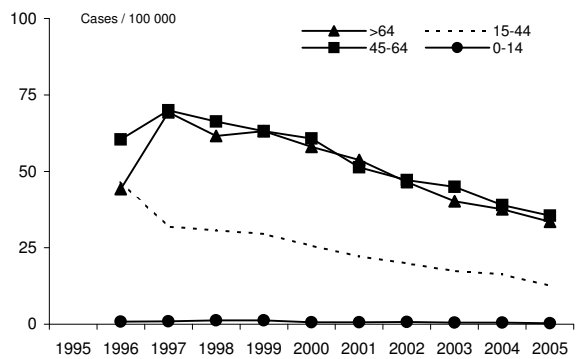
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	953	
Success	508	(53%)
Died	121	(13%)
Failed	119	(12%)
Still on treatment	107	(11%)
Lost to follow up	98	(10%)

Tuberculosis notification rates by sex, 1995-2005*



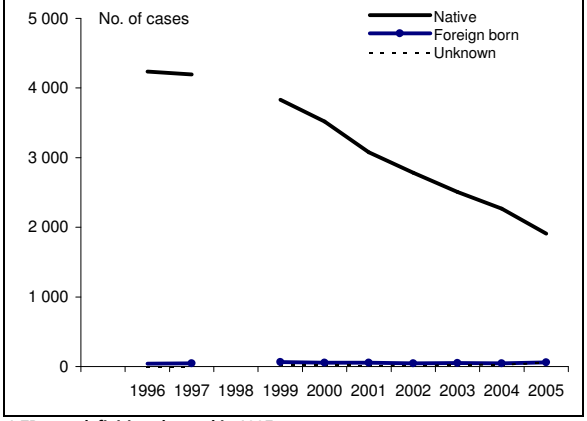
*** TB case definition changed in 1997**

Tuberculosis notification rates by age group, 1995-2005*



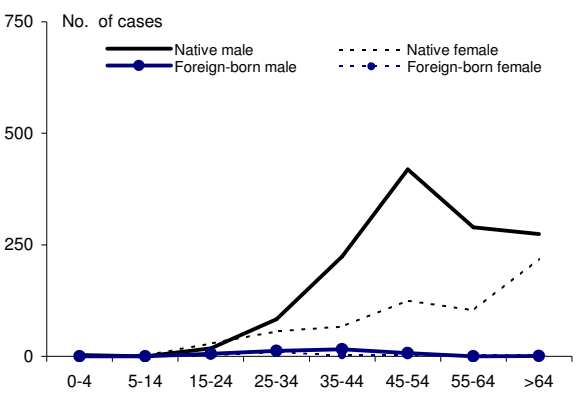
*** TB case definition changed in 1997**

Tuberculosis cases by geographic origin, 1995-2005*



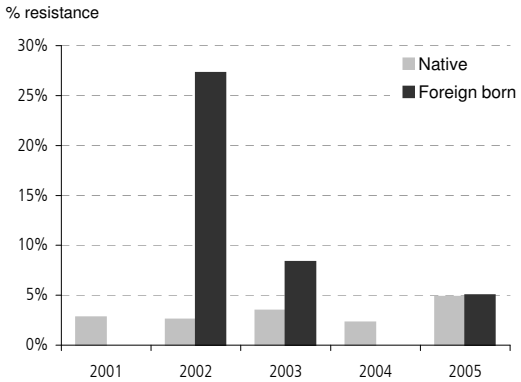
*** TB case definition changed in 1997**

Tuberculosis cases by origin, age group and sex, 2005

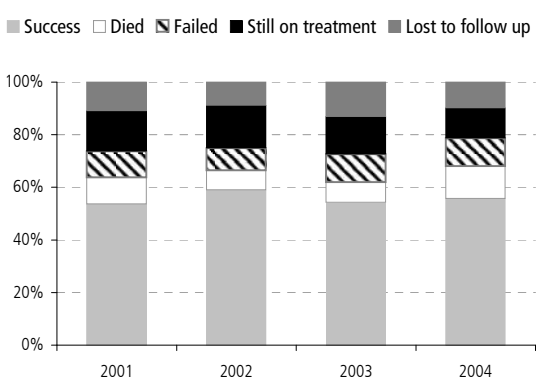


Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



Outcomes, new pulmonary culture positive cases, 2001-2004



Iceland

Tuberculosis case notifications, 2005

Total number of cases	11	
Notification rate per 100 000	3.7	
Sex ratio (M:F)	2.7	
Median age-group, nationals	>64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	7	(63.6%)
New (never-treated)	10	(90.9%)
Culture positive	8	(72.7%)
Pulmonary	5	(45.5%)
of which sputum smear positive	2	(40.0%)
HIV positive TB cases	1	(9.1%)
TB deaths per 100 000 (2001)	0.35	

Drug Resistance Surveillance, 2005

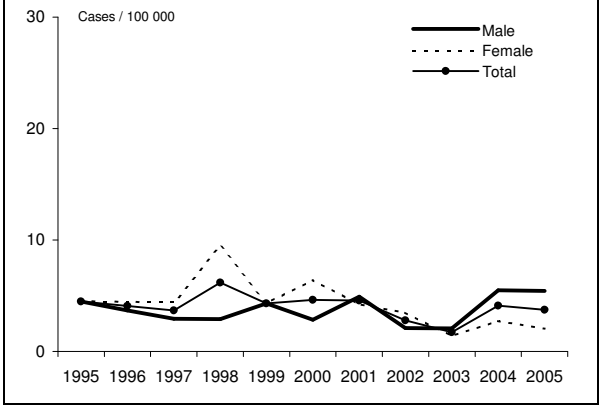
Geographic coverage	National	
International proficiency testing	- *	
Case-linked data reporting	Yes	
Cases with DST results	8	
Cases resistant to isoniazid	0	(0.0%)
Cases resistant to rifampicin	0	(0.0%)
MDR cases	0	(0.0%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	-	-

*** DST done abroad**

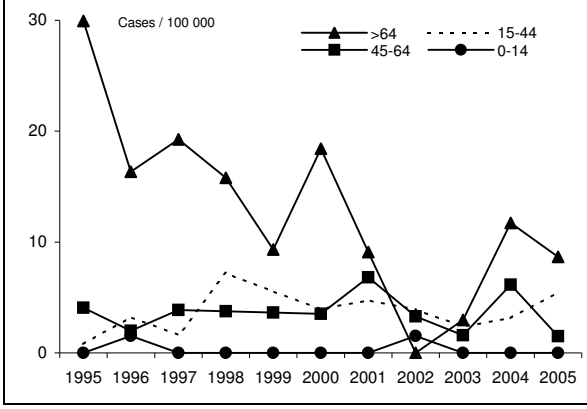
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	4	
Success	3	(75%)
Died	1	(25%)
Failed	0	(0%)
Still on treatment	0	(0%)
Lost to follow up	0	(0%)

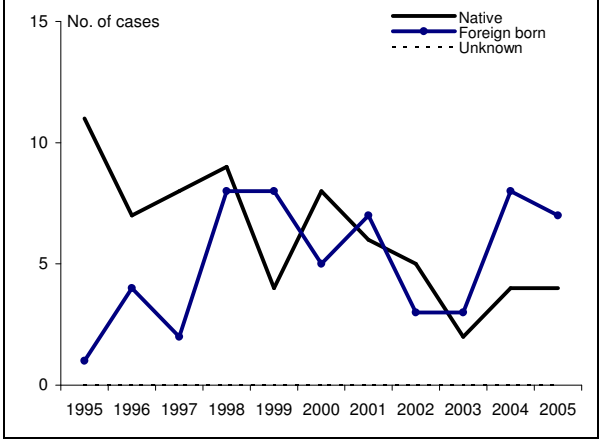
Tuberculosis notification rates by sex, 1995-2005



Tuberculosis notification rates by age group, 1995-2005



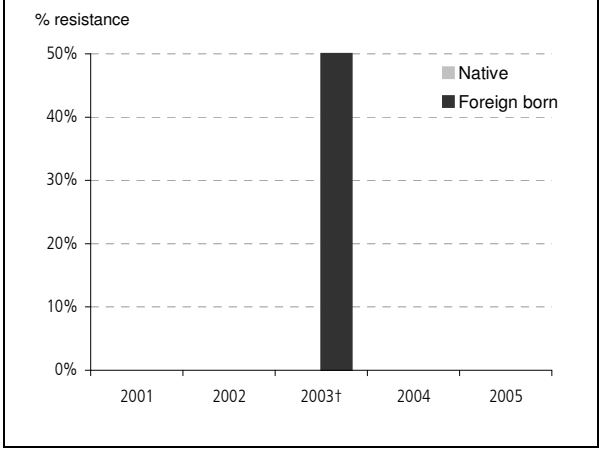
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005

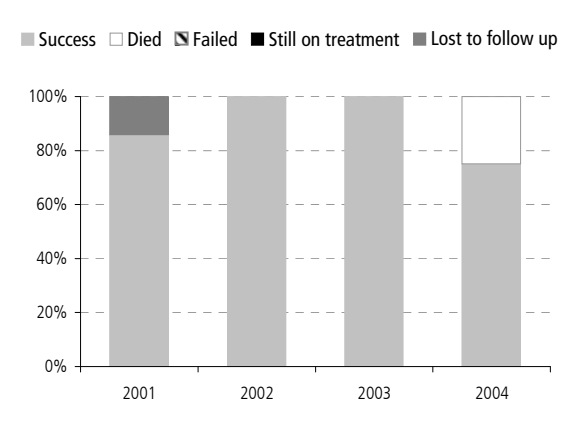
Insufficient number of cases for graphic presentation

Combined multidrug resistance, by origin, 2001-2005



† One of two foreign-born TB cases with DST results in 2003 was MDR (50%)

Outcomes, new pulmonary culture positive cases, 2001-2004



Ireland

Tuberculosis case notifications, 2005

Total number of cases	461	
Notification rate per 100 000	11.1	
Sex ratio (M:F)	1.5	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	25-34 years	
Foreign born	142	(30.8%)
New (not previously diagnosed)*	277	(60.1%)
Culture positive	205	(44.5%)
Pulmonary	319	(69.2%)
of which sputum smear positive	141	(44.2%)
HIV positive TB cases	2	(0.4%)
TB deaths per 100 000 (2004)	0.57	

*** 30% of cases missing history of previous TB**

Drug Resistance Surveillance, 2005

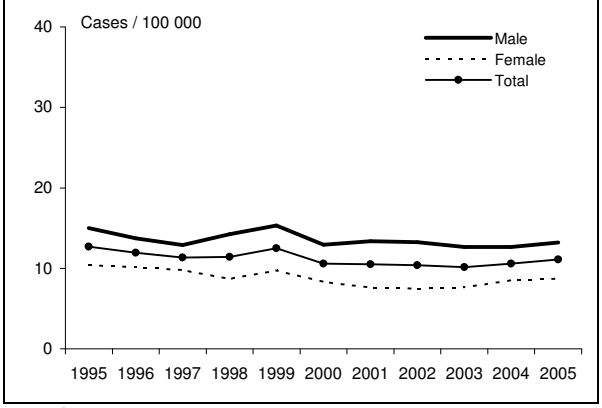
Geographic coverage	National †	
International proficiency testing	Yes (2004)	
Case-linked data reporting	Yes	
Cases with DST results	146	
Cases resistant to isoniazid	6	(4.1%)
Cases resistant to rifampicin	3	(2.1%)
MDR cases	3	(2.1%)
Cases resistant to ethambutol	2	(1.4%)
Cases resistant to streptomycin	-	-

† Data representativeness unknown

Treatment Outcome Monitoring, 2004

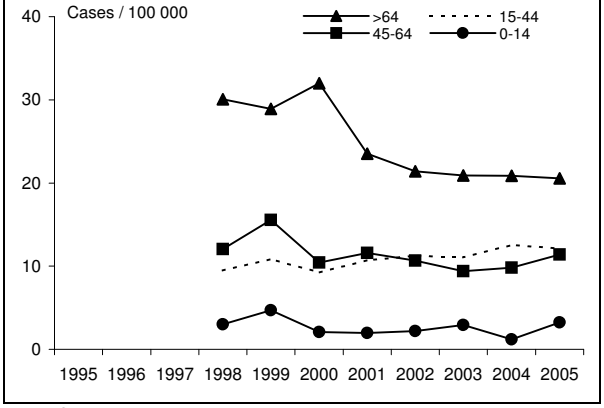
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	225	
Success	150	(67%)
Died	12	(5%)
Failed	1	(0%)
Still on treatment	7	(3%)
Lost to follow up	55	(24%)

Tuberculosis notification rates by sex, 1995-2005 ‡



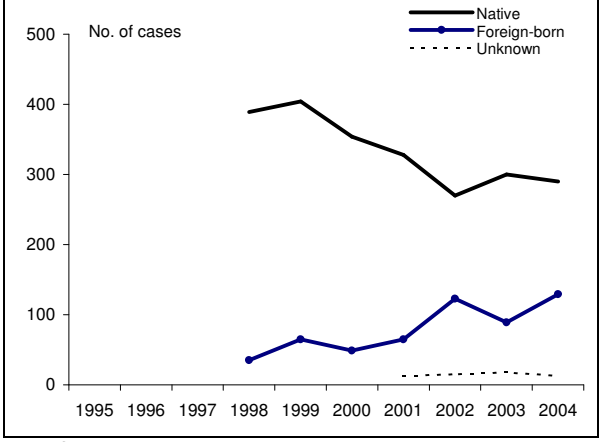
‡ Notification system reorganised in 1998

Tuberculosis notification rates by age group, 1995-2005 ‡



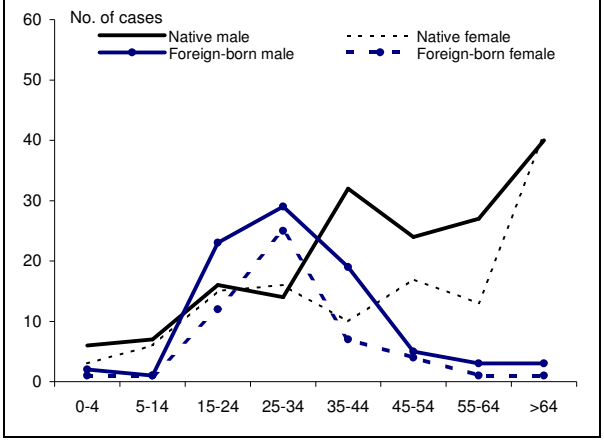
‡ Notification system reorganised in 1998

Tuberculosis cases by geographic origin, 1995-2005 ‡

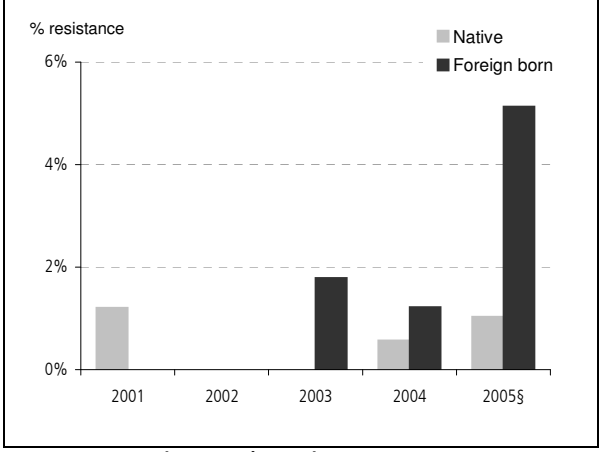


‡ Notification system reorganised in 1998

Tuberculosis cases by origin, age group and sex, 2005

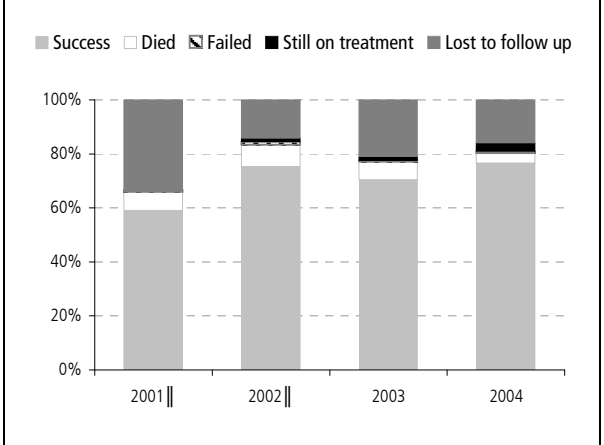


Combined multidrug resistance, by origin, 2001-2005



§ Data representativeness unknown in 2005

Outcomes, new pulmonary culture positive cases, 2001-2004



‖ Data representativeness unknown in 2001-2002

Israel

Tuberculosis case notifications, 2005

Total number of cases	406	
Notification rate per 100 000	6.0	
Sex ratio (M:F)	1.3	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	45-54 years	
Foreign born	332	(81.8%)
New (never-treated)	386	(95.1%)
Culture positive	217	(53.4%)
Pulmonary	308	(75.9%)
of which sputum smear positive	98	(31.8%)
HIV positive TB cases	22	(5.4%)
TB deaths per 100 000 (2003)	0.36	

Drug Resistance Surveillance, 2005

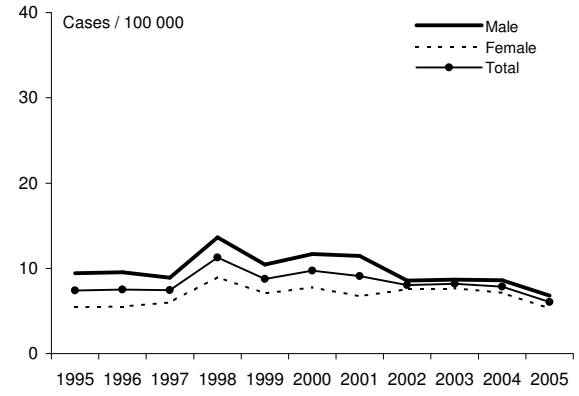
Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	No *	
Cases with DST results	217	
Cases resistant to isoniazid	32	(14.7%)
Cases resistant to rifampicin	12	(5.5%)
MDR cases	12	(5.5%)
Cases resistant to ethambutol	13	(6.0%)
Cases resistant to streptomycin	41	(18.9%)

*** DST results shown from aggregated data reported (all labs doing DST)**

Treatment Outcome Monitoring, 2004

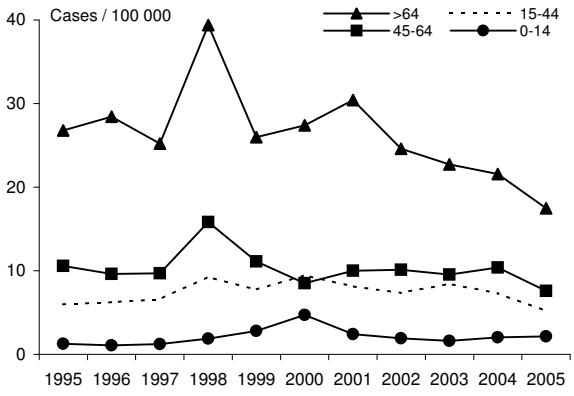
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	274	
Success	219	(80%)
Died	27	(10%)
Failed	3	(1%)
Still on treatment	5	(2%)
Lost to follow up	20	(7%)

Tuberculosis notification rates by sex, 1995-2005*



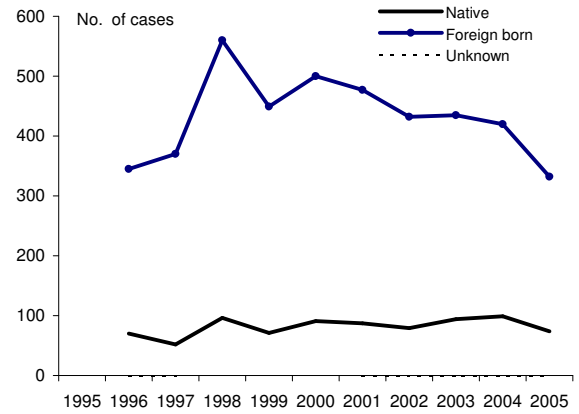
*** TB notification system re-organised in 1998**

Tuberculosis notification rates by age group, 1995-2005*



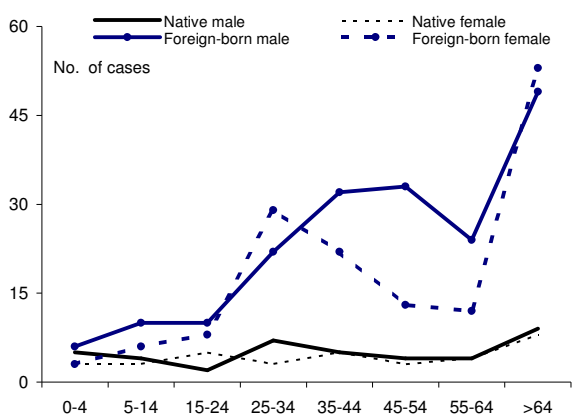
*** TB notification system re-organised in 1998**

Tuberculosis cases by geographic origin, 1995-2005*

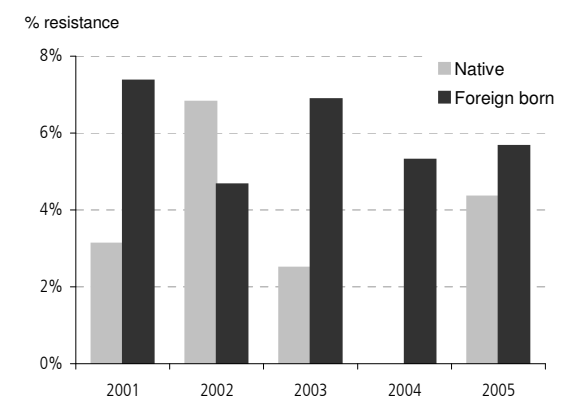


*** TB notification system re-organised in 1998**

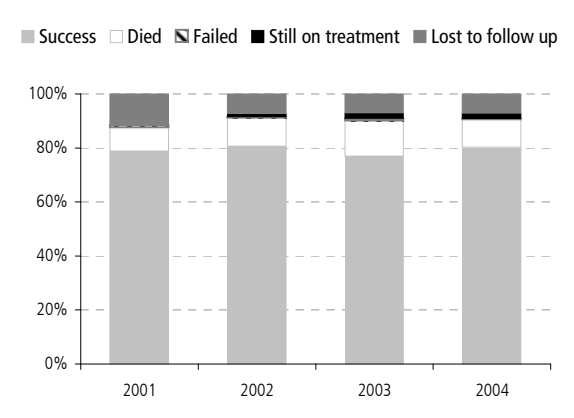
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Italy

Tuberculosis case notifications, 2005

Total number of cases	4 137	
Notification rate per 100 000	7.1	
Sex ratio (M:F)	1.5	
Median age-group, nationals	55-64	years
Median age-group, non-nationals	25-34	years
Foreign born	1 809	(43.7%)
New (never-treated)	3 438	(83.1%)
Culture positive	1 594	(38.5%)
Pulmonary	3 002	(72.6%)
of which sputum smear positive	1 371	(45.7%)
HIV positive (selected TB cases, 2004)	11	(2.7%)
TB deaths per 100 000 (2002)	0.72	

Drug Resistance Surveillance, 2005

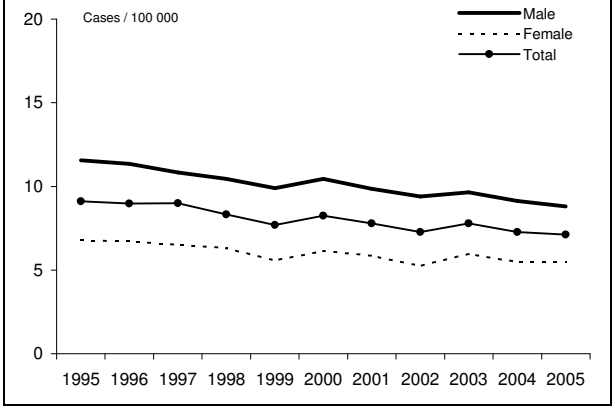
Geographic coverage	Partial *	
International proficiency testing	Yes	
Case-linked data reporting	No	
Cases with DST results	585	
Cases resistant to isoniazid	57	(9.7%)
Cases resistant to rifampicin	26	(4.4%)
MDR cases	22	(3.8%)
Cases resistant to ethambutol	13	(2.2%)
Cases resistant to streptomycin	52	(8.9%)

*** Data from a lab network (representativeness unknown)**

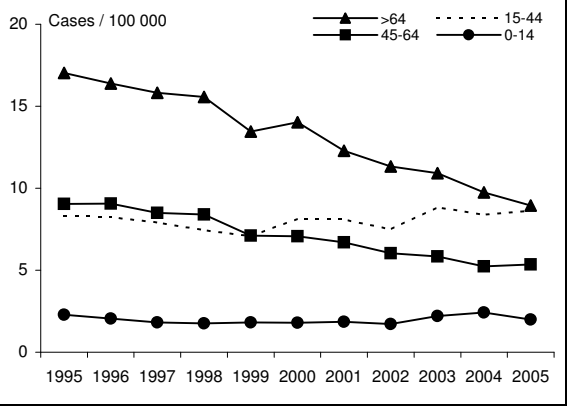
Treatment Outcome Monitoring, 2004

Not available
(reporting on nationwide outcome cohorts to start in 2007)

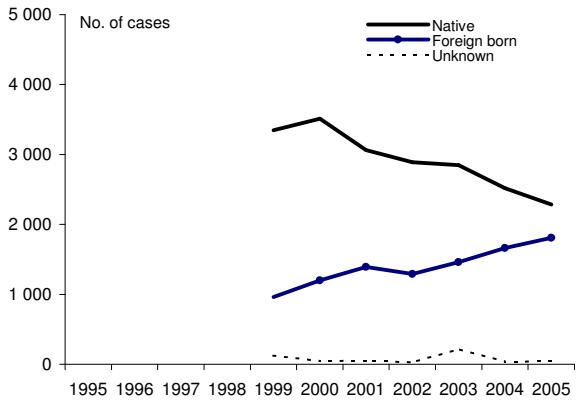
Tuberculosis notification rates by sex, 1995-2005



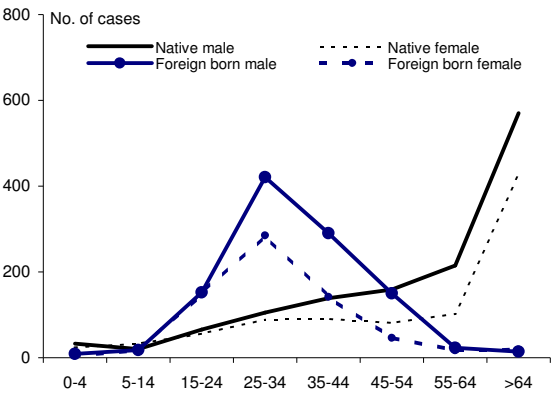
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

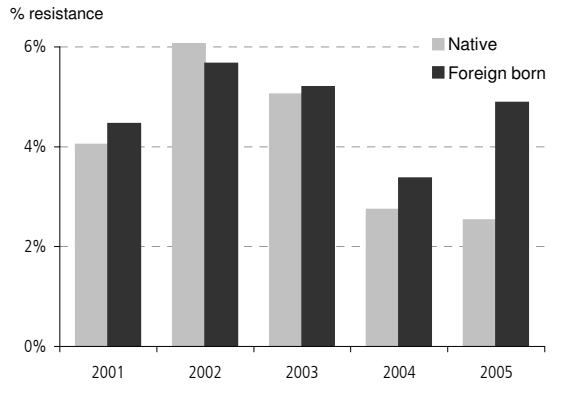


Tuberculosis cases by origin, age group and sex, 2005



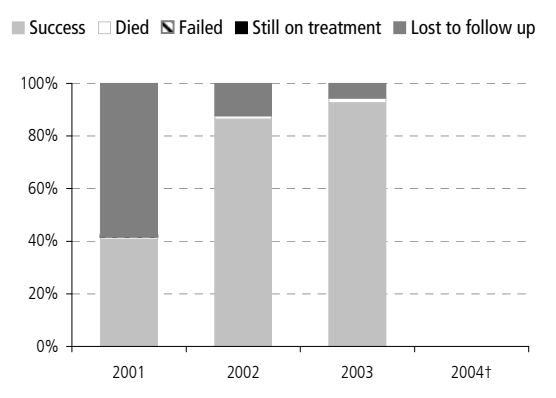
Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



Outcomes, new pulmonary culture positive cases, 2001-2004

Data representativeness unknown



† No data in 2004

Kazakhstan

Tuberculosis case notifications, 2005

Total number of cases	31 187	
Notification rate per 100 000	210.4	
Sex ratio (M:F)	1.4	
Median age-group, nationals	25-34 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	22 303	(71.5%)
Culture positive	5 955	(19.1%)
Pulmonary	30 020	(96.3%)
of which sputum smear positive	12 501	(41.6%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	22.27	

Drug Resistance Surveillance, 2005

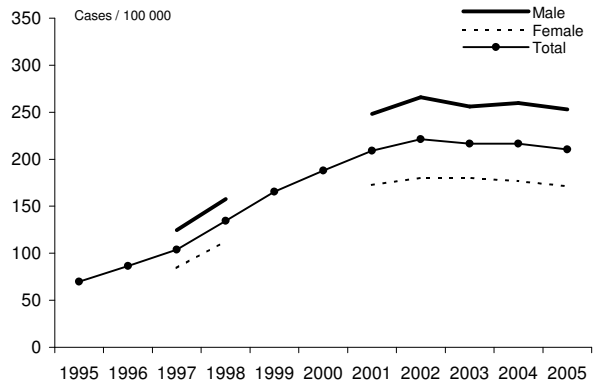
Geographic coverage	National *	
International proficiency testing	Yes (2002)	
Case-linked data reporting	No	
Cases with DST results	16 525	
Cases resistant to isoniazid	8 317	(50.3%)
Cases resistant to rifampicin	5 090	(30.8%)
MDR cases	4 617	(27.9%)
Cases resistant to ethambutol	4 572	(27.7%)
Cases resistant to streptomycin	9 018	(54.6%)

*** All DST labs (representativeness unknown)**

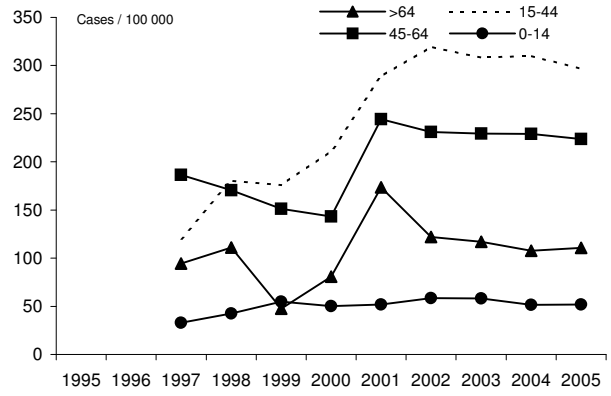
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	11 053	
Success	7 487	(68%)
Died	748	(7%)
Failed	1 310	(12%)
Still on treatment	0	(0%)
Lost to follow up	1 508	(14%)

Tuberculosis notification rates by sex, 1995-2005



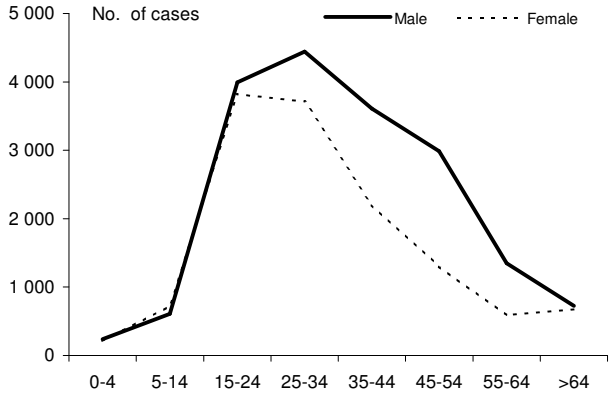
Tuberculosis notification rates by age group, 1995-2005



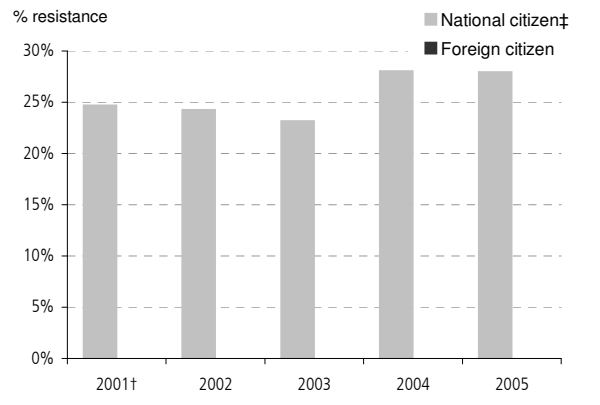
Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

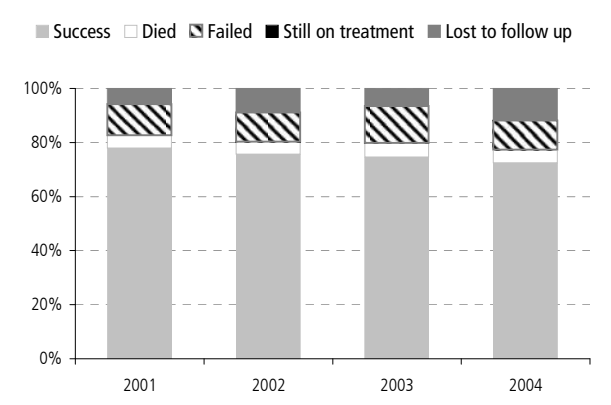
Tuberculosis cases by age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005†



Outcomes, new pulmonary smear positive cases, 2001-2004



† 2001: nationwide representative survey
other years: representativeness unknown
‡ Origin unknown in 2001-2003

Kyrgyzstan

Tuberculosis case notifications, 2005

Total number of cases	6 765	
Notification rate per 100 000	128.5	
Sex ratio (M:F)*	1.3	
Median age-group, nationals*	25-34 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	5 918	(87.5%)
Culture positive	993	(14.7%)
Pulmonary	4 960	(73.3%)
of which sputum smear positive	2 526	(50.9%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	16.48	

Drug Resistance Surveillance, 2005

Geographic coverage	Partial †	
International proficiency testing	Yes	
Case-linked data reporting	No	
Cases with DST results	993	
Cases resistant to isoniazid	458	(46.1%)
Cases resistant to rifampicin	280	(28.2%)
MDR cases	266	(26.8%)
Cases resistant to ethambutol	-	-
Cases resistant to streptomycin	-	-

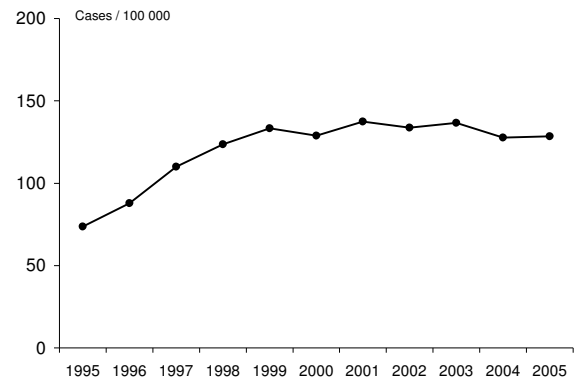
† Data from NRL (representativeness unknown)

Treatment Outcome Monitoring, 2004

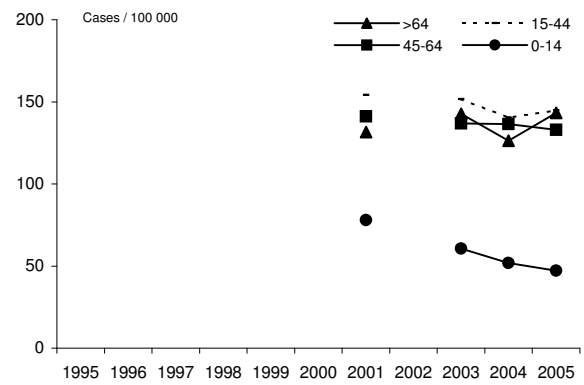
Geographic coverage	National	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	2 114	
Success	1 753	(83%)
Died	106	(5%)
Failed	126	(6%)
Still on treatment	5	(0%)
Lost to follow up	124	(6%)

*** New cases only**

Tuberculosis notification rates, 1995-2005



Tuberculosis notification rates by age group, 1995-2005*

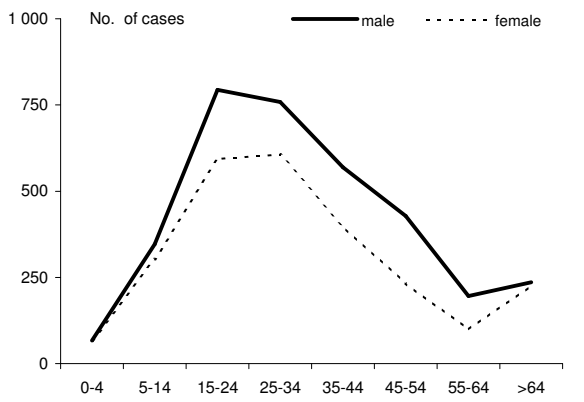


*** New cases only**

Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

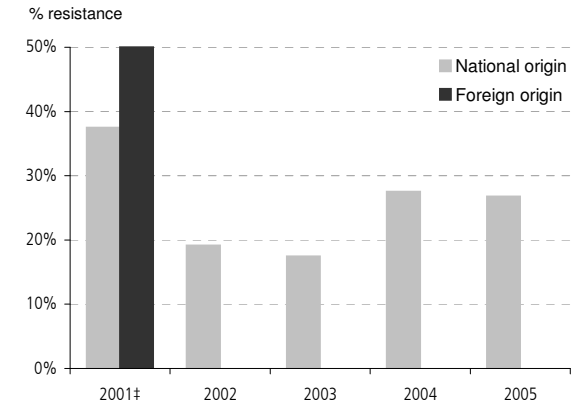
Tuberculosis cases by age group and sex, 2005*



*** New cases only**

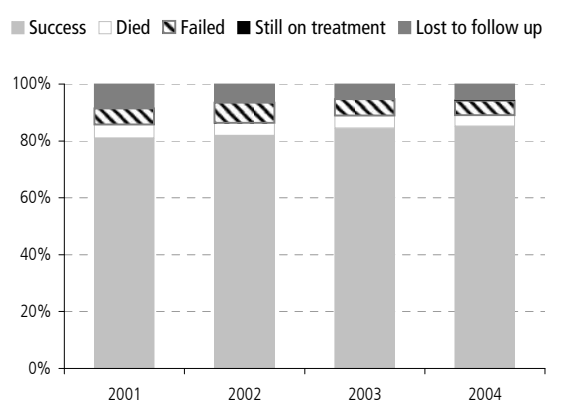
Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



‡ One of 2 cases of foreign origin with DST results in 2001 was MDR (50%)

Outcomes, new pulmonary culture positive cases, 2001-2004



Latvia

Tuberculosis case notifications, 2005

Total number of cases	1 443	
Notification rate per 100 000	62.5	
Sex ratio (M:F)	2.3	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	45-54 years	
Foreign born	84	(5.8%)
New (never-treated)	1 238	(85.8%)
Culture positive	1 096	(76.0%)
Pulmonary	1 295	(89.7%)
of which sputum smear positive	673	(52.0%)
HIV positive TB cases	51	(3.5%)
TB deaths per 100 000 (2004)	7.31	

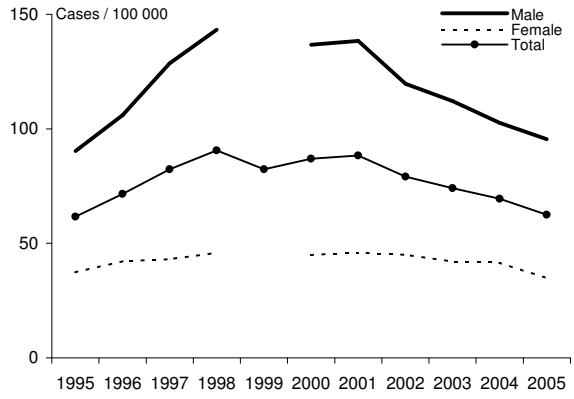
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	1 042	
Cases resistant to isoniazid	354	(34.0%)
Cases resistant to rifampicin	156	(15.0%)
MDR cases	156	(15.0%)
Cases resistant to ethambutol	151	(14.5%)
Cases resistant to streptomycin	359	(34.5%)

Treatment Outcome Monitoring, 2004

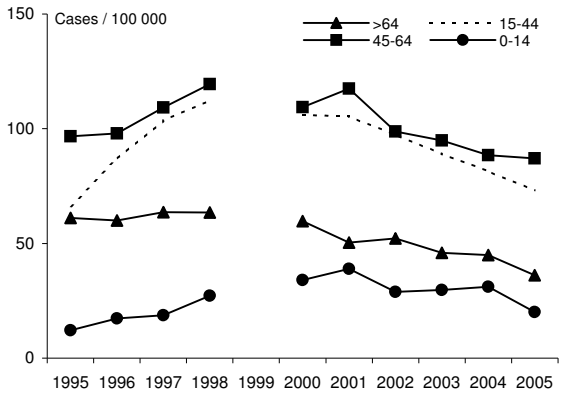
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	1 086	
Success	749	(69%)
Died	87	(8%)
Failed	9	(1%)
Still on treatment	166	(15%)
Lost to follow up	75	(7%)

Tuberculosis notification rates by sex, 1995-2005*



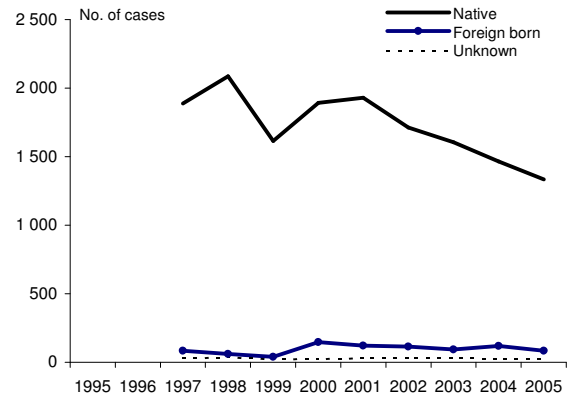
* Retreated cases other than relapses included since 2001

Tuberculosis notification rates by age group, 1995-2005*



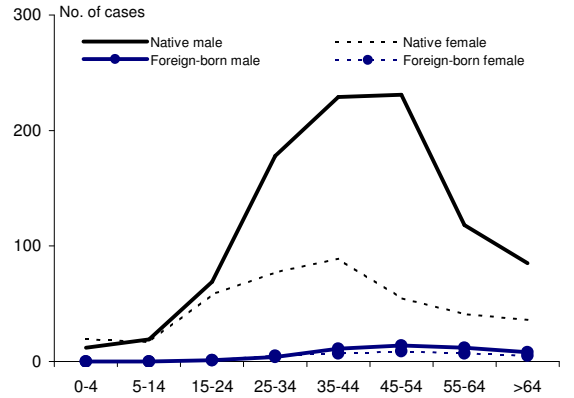
* Retreated cases other than relapses included since 2001

Tuberculosis cases by geographic origin, 1995-2005*

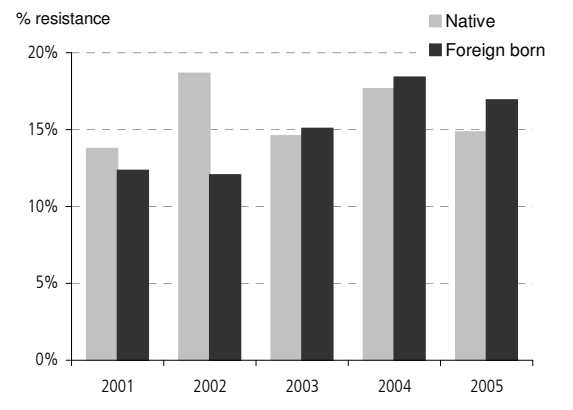


* Retreated cases other than relapses included since 2001

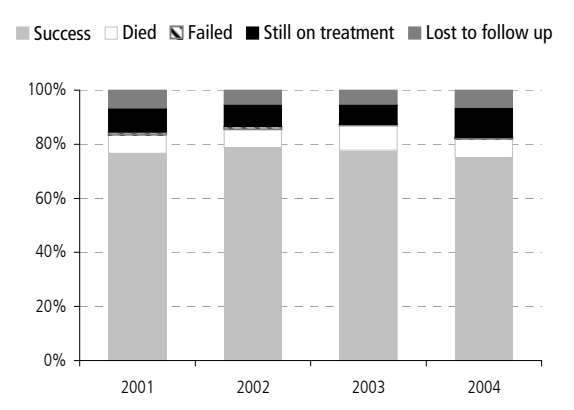
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Lithuania

Tuberculosis case notifications, 2005

Total number of cases	2 574	
Notification rate per 100 000	75.0	
Sex ratio (M:F)	2.2	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	45-54 years	
Foreign born	88	(3.4%)
New (never-treated)	2 108	(81.9%)
Culture positive	1 739	(67.6%)
Pulmonary	2 211	(85.9%)
of which sputum smear positive	1 324	(59.9%)
HIV positive TB cases	7	(0.3%)
TB deaths per 100 000 (2004)	8.97	

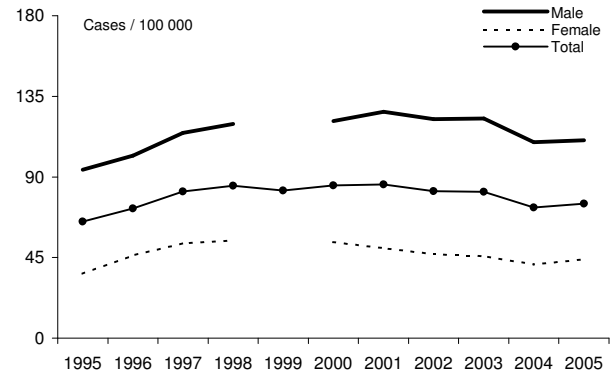
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	1 739	
Cases resistant to isoniazid	514	(29.6%)
Cases resistant to rifampicin	342	(19.7%)
MDR cases	338	(19.4%)
Cases resistant to ethambutol	475	(27.3%)
Cases resistant to streptomycin	204	(11.7%)

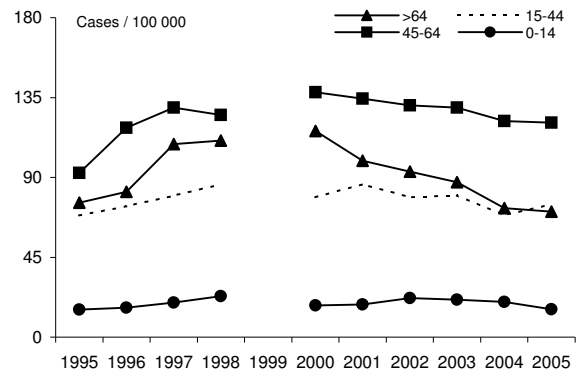
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	1 545	
Success	951	(62%)
Died	200	(13%)
Failed	51	(3%)
Still on treatment	140	(9%)
Lost to follow up	203	(13%)

Tuberculosis notification rates by sex, 1995-2005*

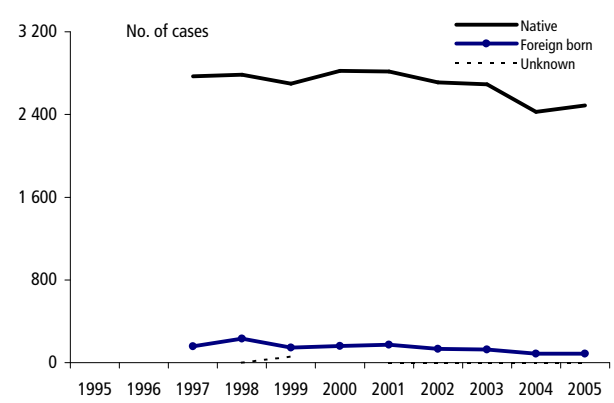


Tuberculosis notification rates by age group, 1995-2005*

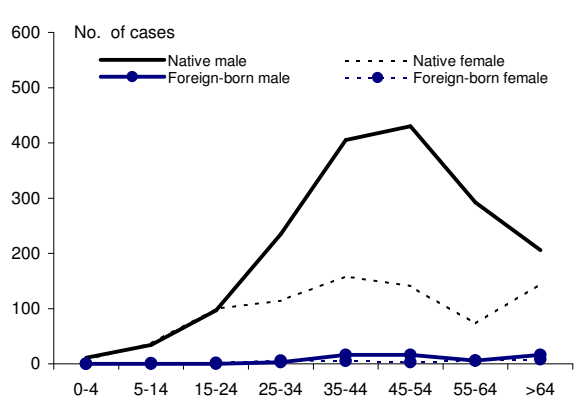


* Retreated cases other than relapses included since 2001

Tuberculosis cases by geographic origin, 1995-2005*

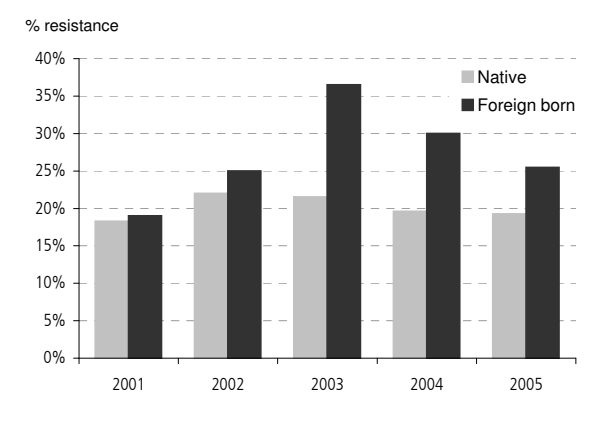


Tuberculosis cases by origin, age group and sex, 2005

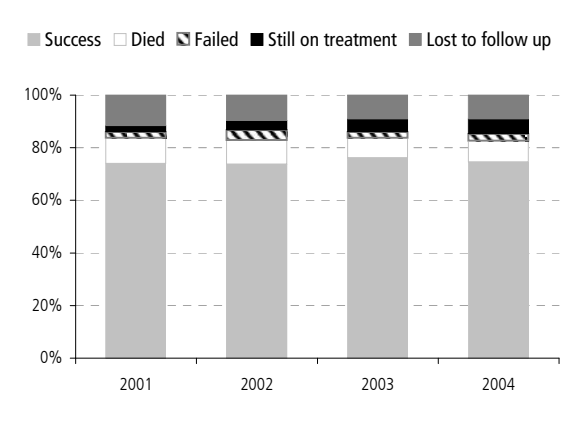


* Retreated cases other than relapses included since 2001

Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Luxembourg

Tuberculosis case notifications, 2005

Total number of cases	37	
Notification rate per 100 000	8.0	
Sex ratio (M:F)	1.5	
Median age-group, nationals	55-64	years
Median age-group, non-nationals	35-44	years
Foreign born	25	(67.6%)
New (never-treated)	36	(97.3%)
Culture positive	37	(100.0%)
Pulmonary	34	(91.9%)
of which sputum smear positive	14	(41.2%)
HIV positive TB cases	-	
TB deaths per 100 000 (2002)	0.67	

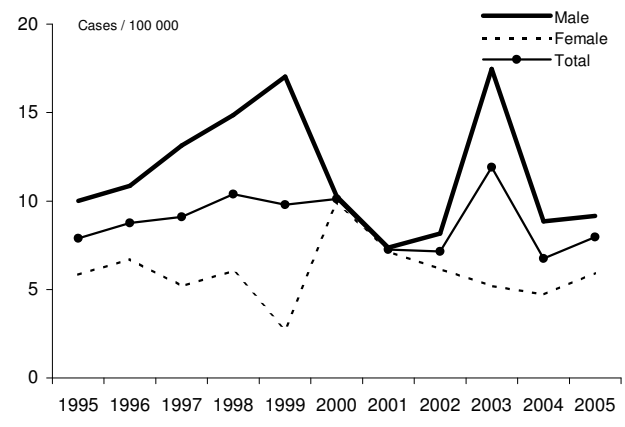
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	No	
Case-linked data reporting	Yes	
Cases with DST results	37	
Cases resistant to isoniazid	3	(8.1%)
Cases resistant to rifampicin	0	(0.0%)
MDR cases	0	(0.0%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	2	(5.4%)

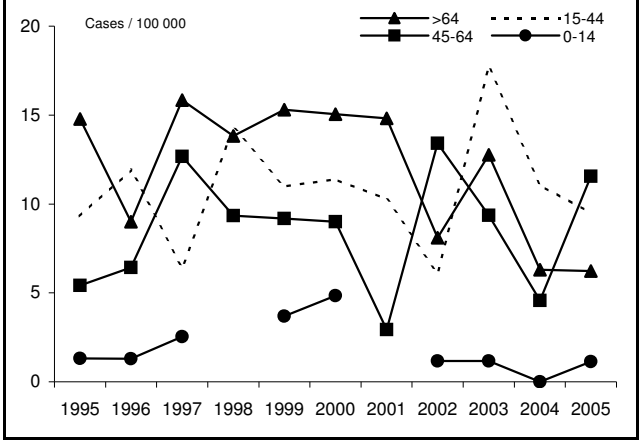
Treatment Outcome Monitoring, 2004

Not available

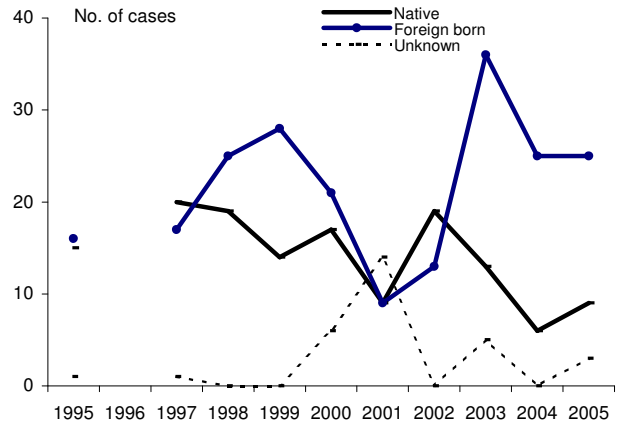
Tuberculosis notification rates by sex, 1995-2005



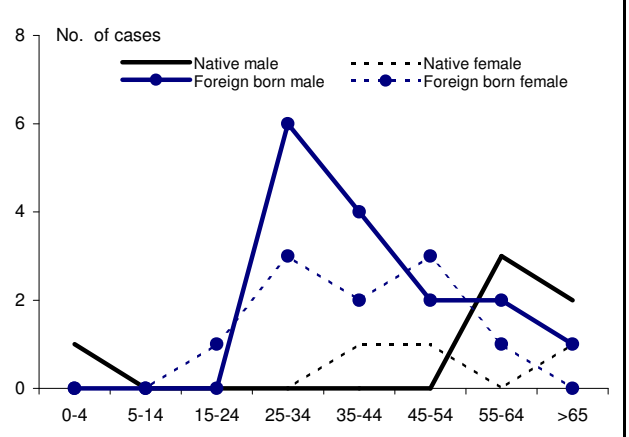
Tuberculosis notification rates by age group, 1995-2005



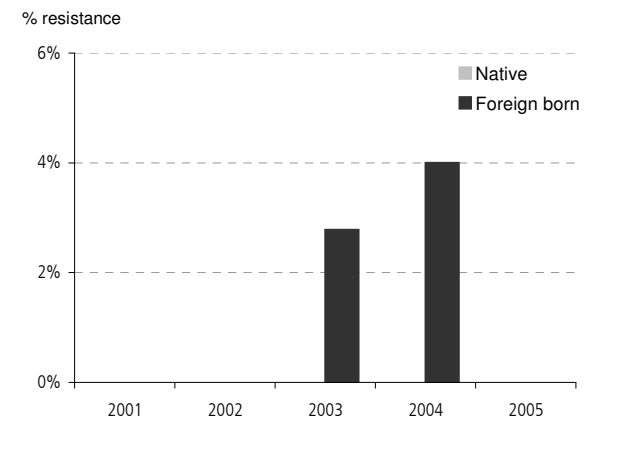
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

F.Y.R. of Macedonia

Tuberculosis case notifications, 2005

Total number of cases	658	
Notification rate per 100 000	32.3	
Sex ratio (M:F)	1.5	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	555	(84.3%)
Culture positive	160	(24.3%)
Pulmonary	511	(77.7%)
of which sputum smear positive	223	(43.6%)
HIV positive TB cases	2	(0.3%)
TB deaths per 100 000 (2003)	3.85	

Drug Resistance Surveillance, 2005

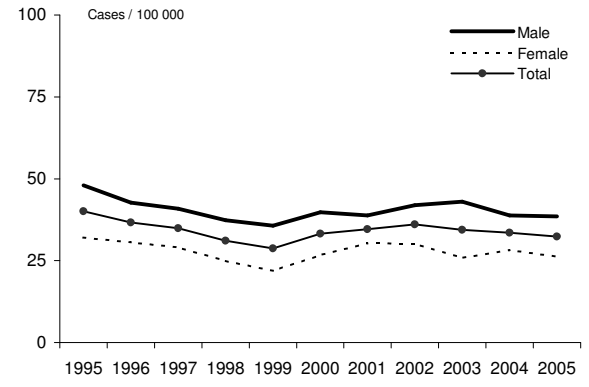
Geographic coverage	National *	
International proficiency testing	No	
Case-linked data reporting	Yes	
Cases with DST results	125	
Cases resistant to isoniazid	7	(5.6%)
Cases resistant to rifampicin	7	(5.6%)
MDR cases	4	(3.2%)
Cases resistant to ethambutol	2	(1.6%)
Cases resistant to streptomycin	9	(7.2%)

*** Data representativeness unknown**

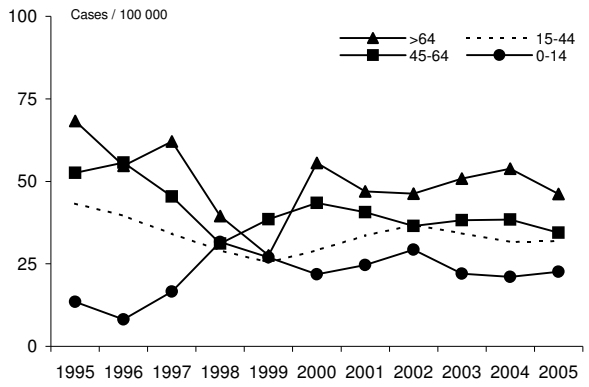
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	244	
Success	208	(85%)
Died	7	(3%)
Failed	2	(1%)
Still on treatment	0	(0%)
Lost to follow up	27	(11%)

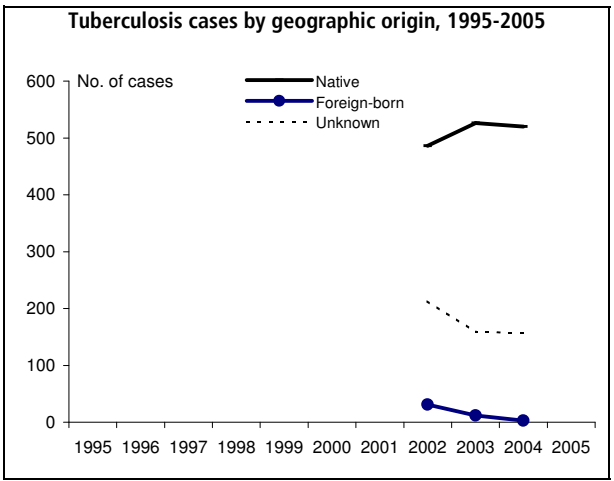
Tuberculosis notification rates by sex, 1995-2005



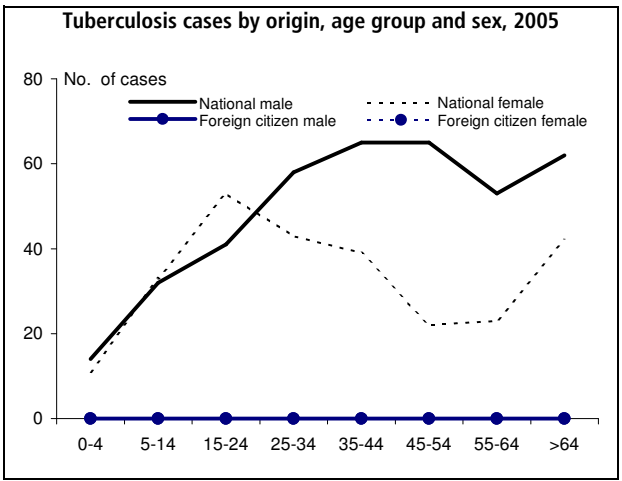
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

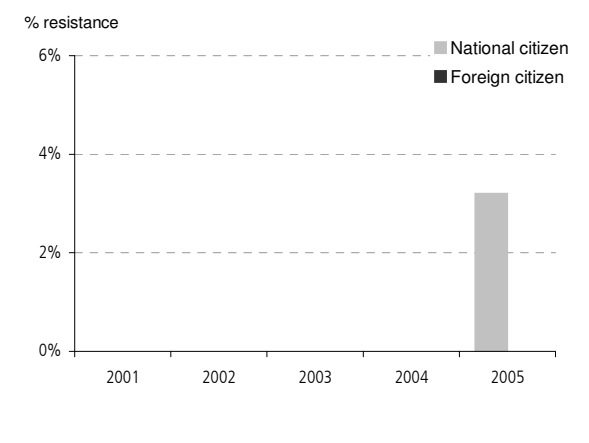


Tuberculosis cases by origin, age group and sex, 2005



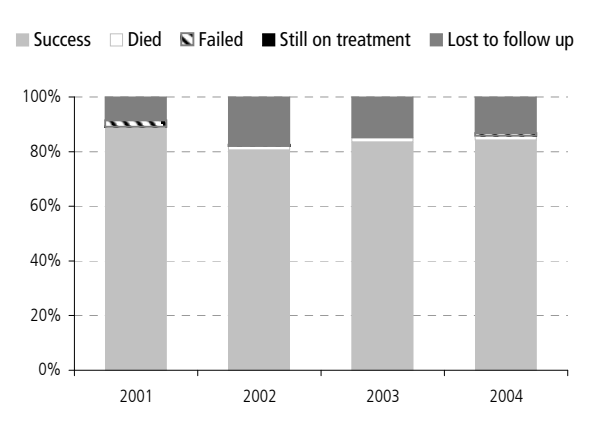
Combined multidrug resistance, by origin, 2001-2005†

Data representativeness unknown



† No data by geographic origin 2001-2004

Outcomes, new pulmonary smear positive cases, 2001-2004



Malta

Tuberculosis case notifications, 2005

Total number of cases	23	
Notification rate per 100 000	5.7	
Sex ratio (M:F)	10.5	
Median age-group, nationals	>64 years	
Median age-group, non-nationals	25-34 years	
Foreign citizens	17	(73.9%)
New (never-treated)	22	(95.7%)
Culture positive	10	(43.5%)
Pulmonary	16	(69.6%)
of which sputum smear positive	5	(31.3%)
HIV positive TB cases	0	(0.0%)
TB deaths per 100 000 (2003)	0.25	

Drug Resistance Surveillance, 2005

Geographic coverage	National *	
International proficiency testing	- †	
Case-linked data reporting	Yes	
Cases with DST results	10	
Cases resistant to isoniazid	0	(0.0%)
Cases resistant to rifampicin	0	(0.0%)
MDR cases	0	(0.0%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	2	(20.0%)

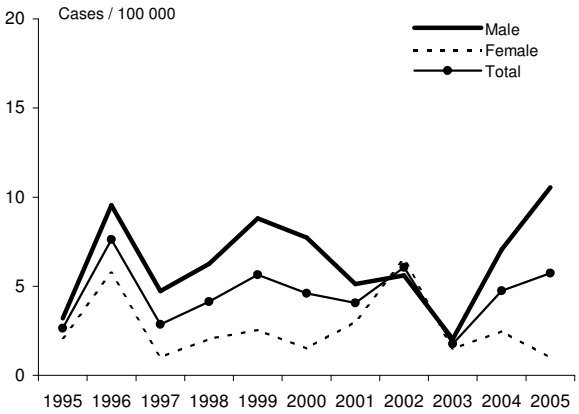
*** Data representativeness unknown**

† DST done abroad

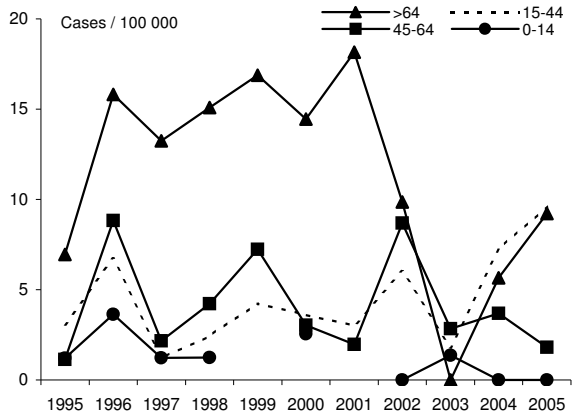
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	5	
Success	5	(100%)
Died	0	(0%)
Failed	0	(0%)
Still on treatment	0	(0%)
Lost to follow up	0	(0%)

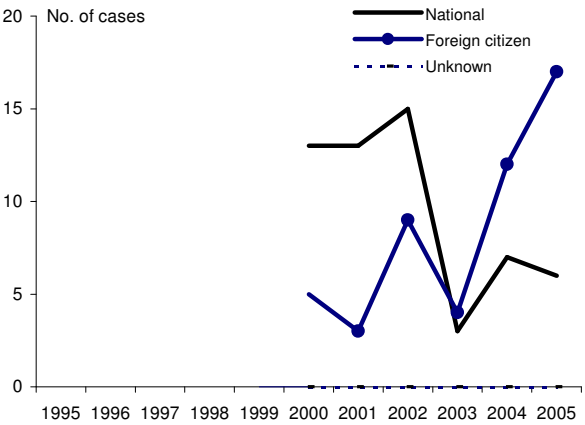
Tuberculosis notification rates by sex, 1995-2005



Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005



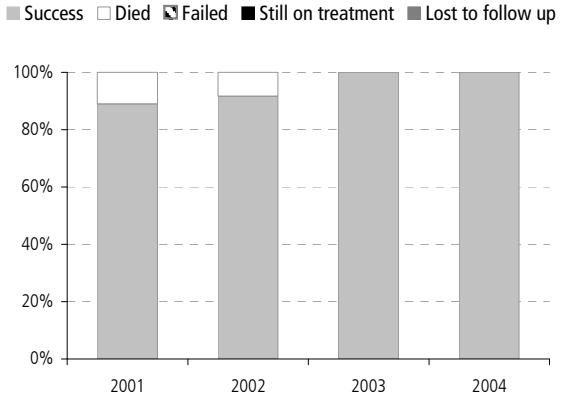
Tuberculosis cases by origin, age group and sex, 2005

Insufficient number of cases for graphic presentation

Combined multidrug resistance, by origin, 2001-2005

No MDR reported

Outcomes, new pulmonary culture positive cases, 2001-2004



Moldova, Republic of

Tuberculosis case notifications, 2005

Total number of cases	6 278	
Notification rate per 100 000	149.3	
Sex ratio (M:F)	3.1	
Median age-group, nationals	-	
Median age-group, non-nationals	-	
Foreign citizens	39	(0.6%)
New (never-treated)	4 501	(71.7%)
Culture positive	1 881	(30.0%)
Pulmonary	5 664	(90.2%)
of which sputum smear positive	2 878	(50.8%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	17.31	

Drug Resistance Surveillance, 2002

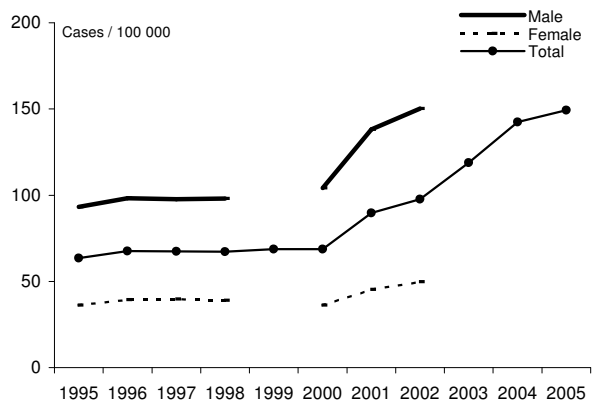
Geographic coverage	National *	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	1 022	
Cases resistant to isoniazid	252	(24.7%)
Cases resistant to rifampicin	262	(25.6%)
MDR cases	192	(18.8%)
Cases resistant to ethambutol	35	(3.4%)
Cases resistant to streptomycin	367	(35.9%)

*** Data representativeness unknown**

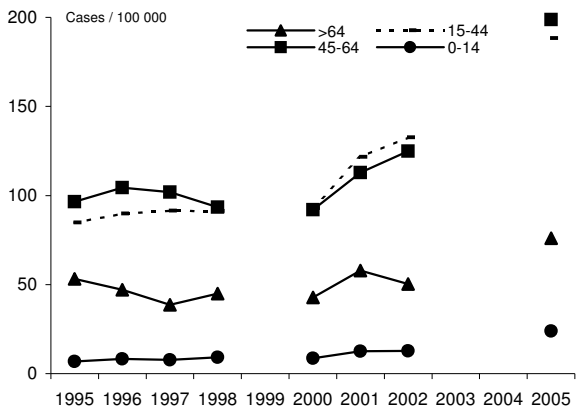
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	2 757	
Success	1 561	(57%)
Died	283	(10%)
Failed	350	(13%)
Still on treatment	34	(1%)
Lost to follow up	529	(19%)

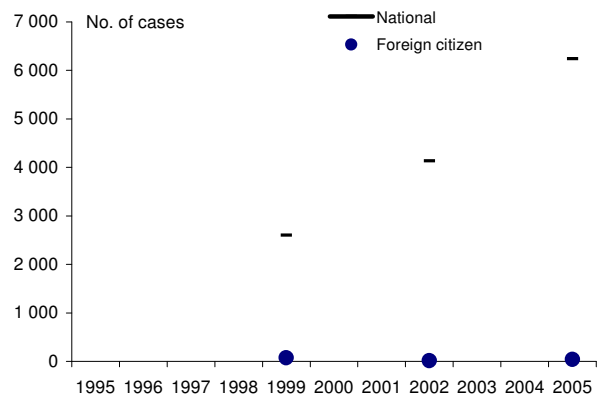
Tuberculosis notification rates by sex, 1995-2005



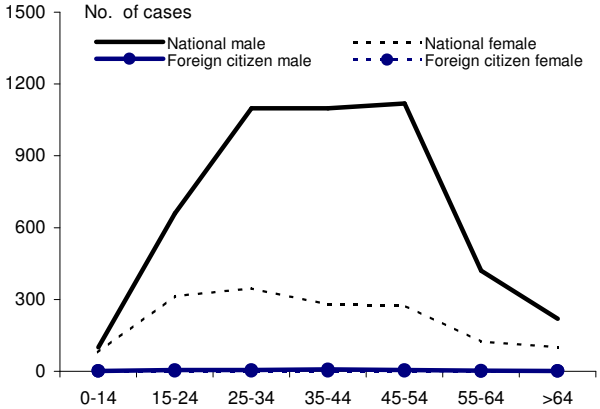
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

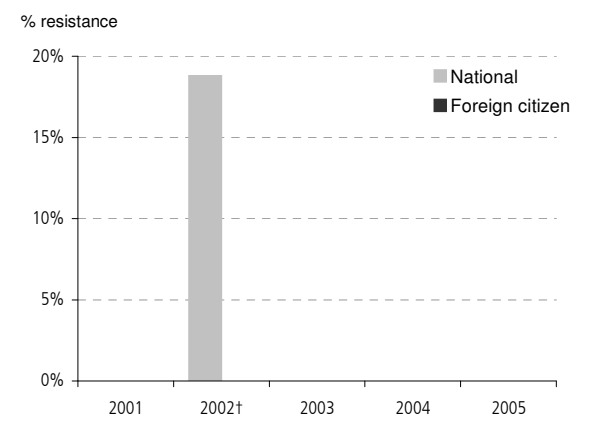


Tuberculosis cases by origin, age group and sex, 2005



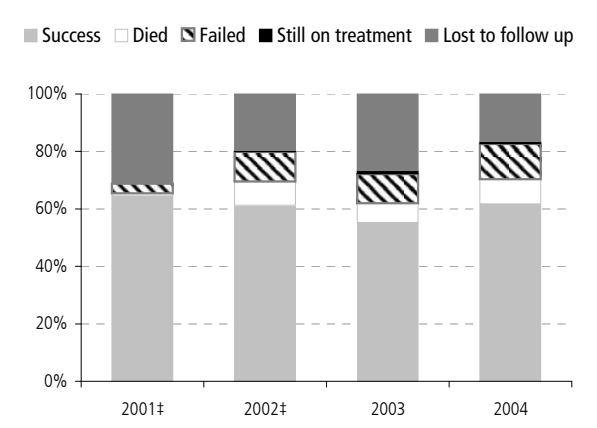
Combined multidrug resistance, by origin, 2001-2005 †

Data representativeness unknown



† Data only available in 2002

Outcomes, new pulmonary smear positive cases, 2001-2004 ‡



‡ Data representativeness unknown 2001-2002

Monaco

Tuberculosis case notifications, 2005

Not available

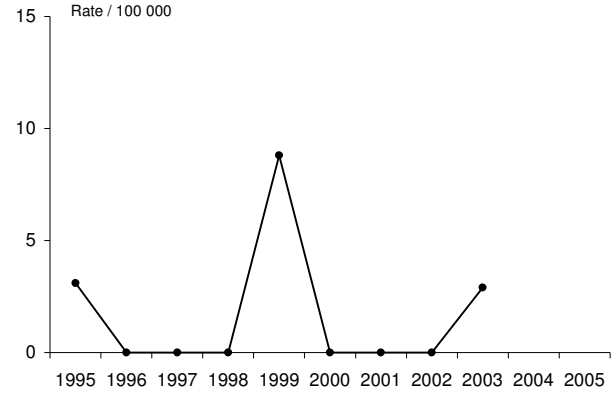
Drug Resistance Surveillance, 2005

Not available

Treatment Outcome Monitoring, 2004

Not available

Tuberculosis notification rates, 1995-2005*



* No data reported in 2004-2005

Tuberculosis notification rates by age group, 1995-2005

Not available

Tuberculosis cases by geographic origin, 1995-2005

Insufficient number of cases for graphic presentation

Tuberculosis cases by origin, age group and sex, 2005

Not available

Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

Montenegro*

Tuberculosis case notifications, 2005

Total number of cases	170	
Notification rate per 100 000	27.3	
Sex ratio (M:F)	1.6	
Median age-group, nationals	45-54	years
Median age-group, non-nationals	55-64	years
Foreign citizens	2	(1.2%)
New (never-treated)	143	(84.1%)
Culture positive	107	(62.9%)
Pulmonary	157	(92.4%)
of which sputum smear positive	74	(47.1%)
HIV positive TB cases	0	(0.0%)
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2005

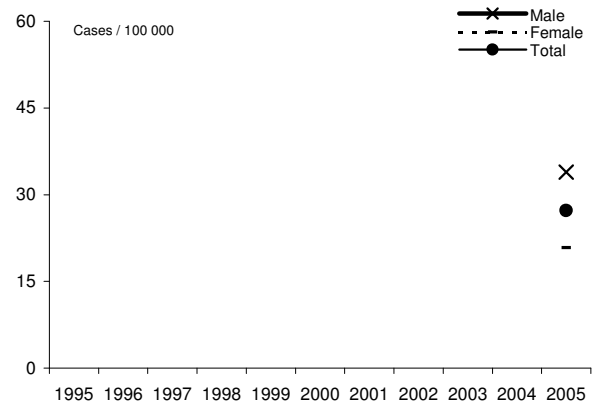
Geographic coverage	National †	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	100	
Cases resistant to isoniazid	2	(2.0%)
Cases resistant to rifampicin	7	(7.0%)
MDR cases	2	(2.0%)
Cases resistant to ethambutol	0	(0.0%)
Cases resistant to streptomycin	-	-

† **Data from NRL**

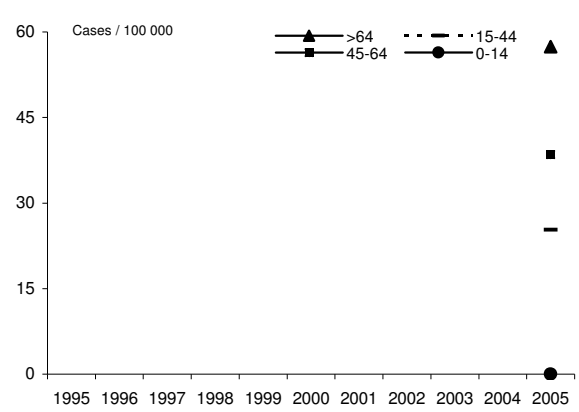
Treatment Outcome Monitoring, 2004

Not available

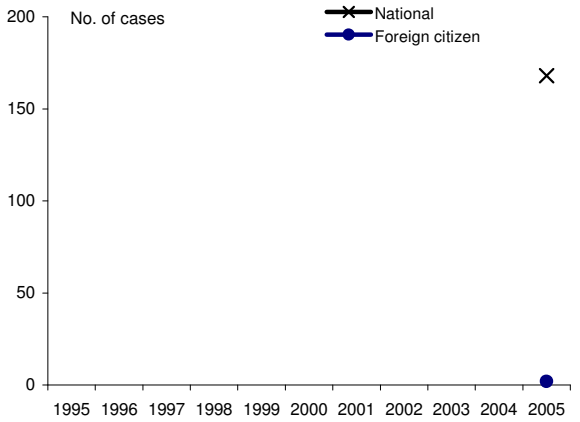
Tuberculosis notification rates, 1995-2005*



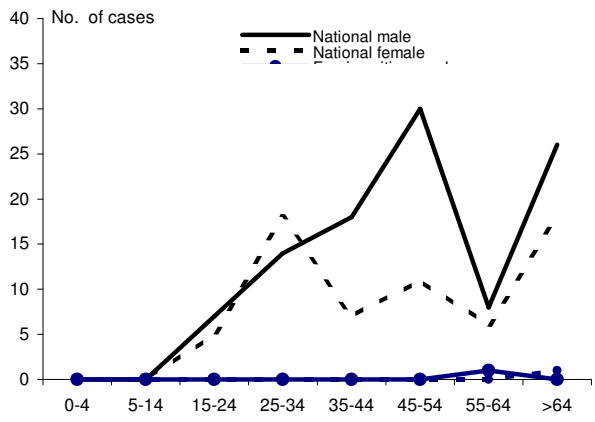
Tuberculosis notification rates by age group, 1995-2005*



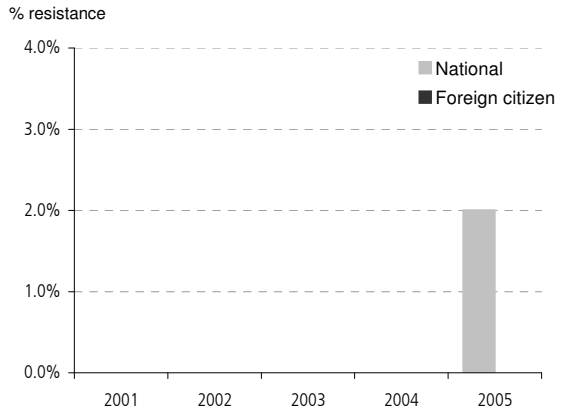
Tuberculosis cases by geographic origin, 1995-2005*



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005*



Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

*** established in 2006 following the split of Serbia & Montenegro; data starting from 2005**

The Netherlands

Tuberculosis case notifications, 2005

Total number of cases	1 157	
Notification rate per 100 000	7.1	
Sex ratio (M:F)	1.4	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	25-34 years	
Foreign born	764	(66.0%)
New (never-treated)	974	(84.2%)
Culture positive	758	(65.5%)
Pulmonary	756	(65.3%)
of which sputum smear positive	252	(33.3%)
HIV positive TB cases	61	(5.3%)
TB deaths per 100 000 (2004)	0.21	

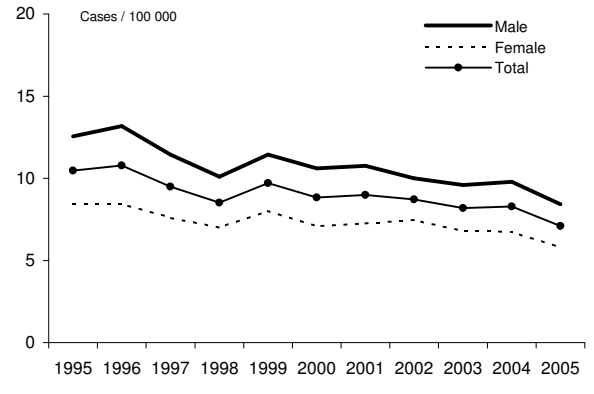
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes (2006)	
Case-linked data reporting	Yes	
Cases with DST results	758	
Cases resistant to isoniazid	41	(5.4%)
Cases resistant to rifampicin	6	(0.8%)
MDR cases	3	(0.4%)
Cases resistant to ethambutol	3	(0.4%)
Cases resistant to streptomycin	0	(0.0%)

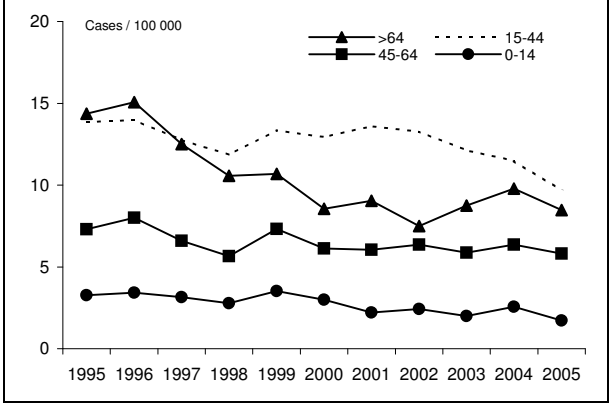
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	510	
Success	426	(84%)
Died	36	(7%)
Failed	0	(0%)
Still on treatment	0	(0%)
Lost to follow up	48	(9%)

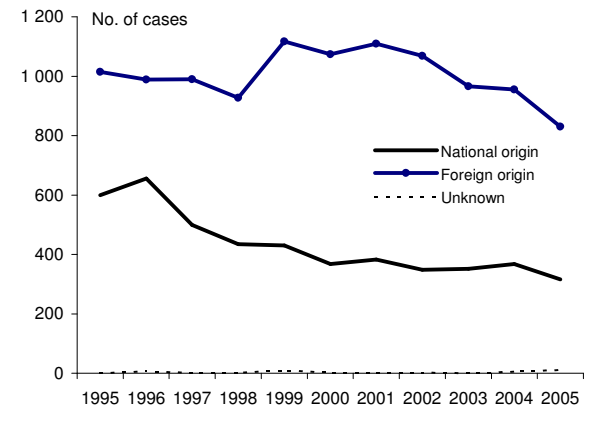
Tuberculosis notification rates by sex, 1995-2005



Tuberculosis notification rates by age group, 1995-2005

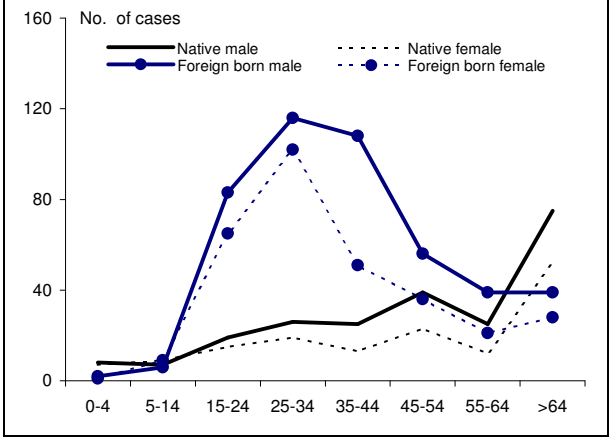


Tuberculosis cases by geographic origin, 1995-2005*

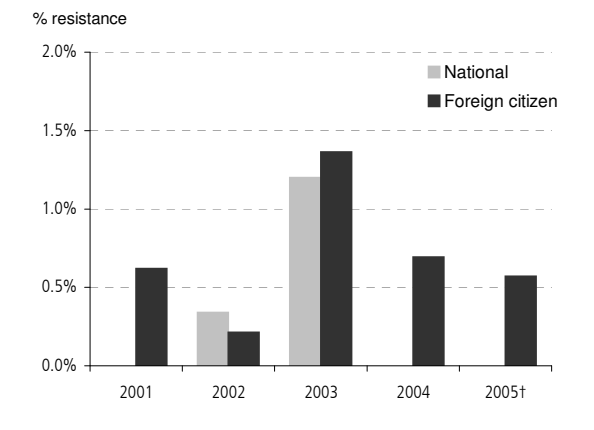


*** by birthplace of case and parents (differs from data shown elsewhere)**

Tuberculosis cases by origin, age group and sex, 2005

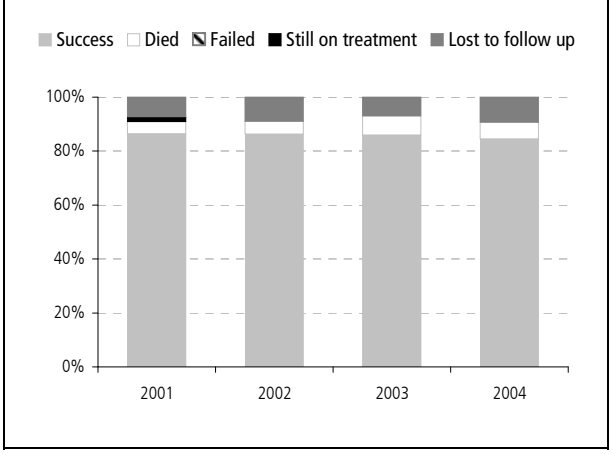


Combined multidrug resistance, by origin, 2001-2005



† By birthplace in 2005

Outcomes, new pulmonary culture positive cases, 2001-2004



Norway

Tuberculosis case notifications, 2005

Total number of cases	290	
Notification rate per 100 000	6.3	
Sex ratio (M:F)	1.1	
Median age-group, nationals	>64 years	
Median age-group, non-nationals	25-34 years	
Foreign born	226	(77.9%)
New (never-treated)	259	(89.3%)
Culture positive	214	(73.8%)
Pulmonary	176	(60.7%)
of which sputum smear positive	51	(29.0%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	0.15	

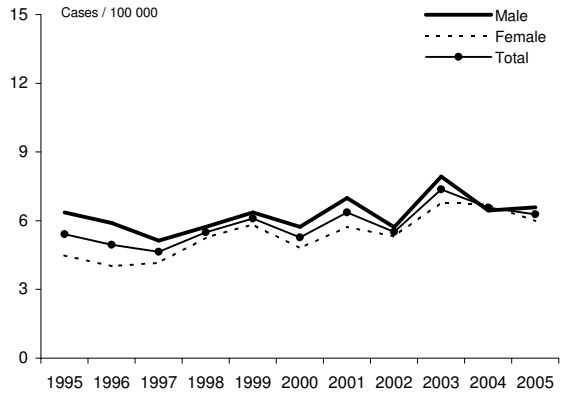
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	214	
Cases resistant to isoniazid	21	(9.8%)
Cases resistant to rifampicin	3	(1.4%)
MDR cases	3	(1.4%)
Cases resistant to ethambutol	4	(1.9%)
Cases resistant to streptomycin	31	(14.5%)

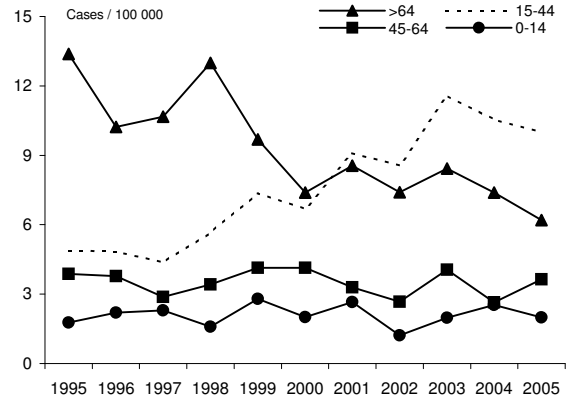
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	159	
Success	133	(84%)
Died	15	(9%)
Failed	1	(1%)
Still on treatment	2	(1%)
Lost to follow up	8	(5%)

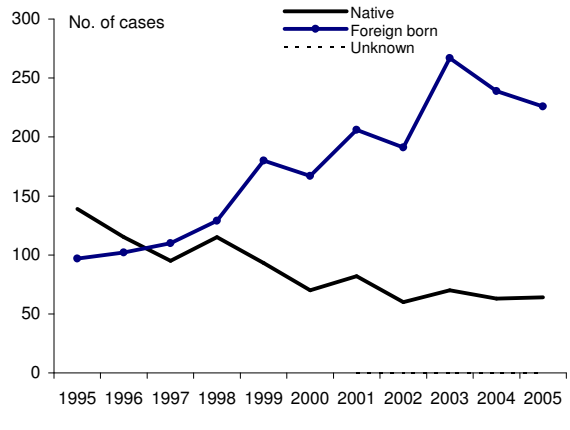
Tuberculosis notification rates by sex, 1995-2005



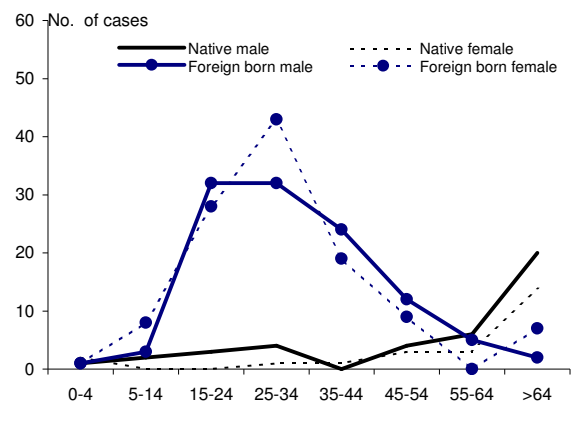
Tuberculosis notification rates by age group, 1995-2005



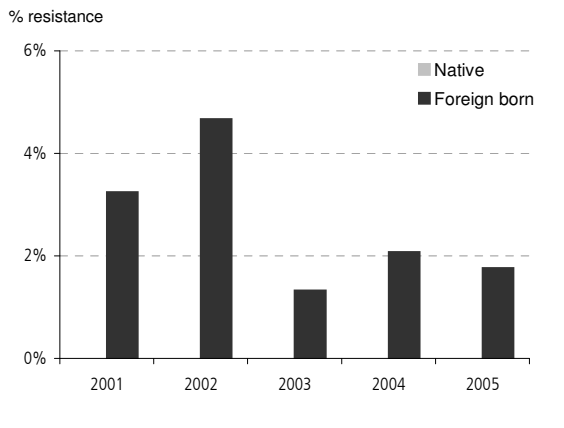
Tuberculosis cases by geographic origin, 1995-2005



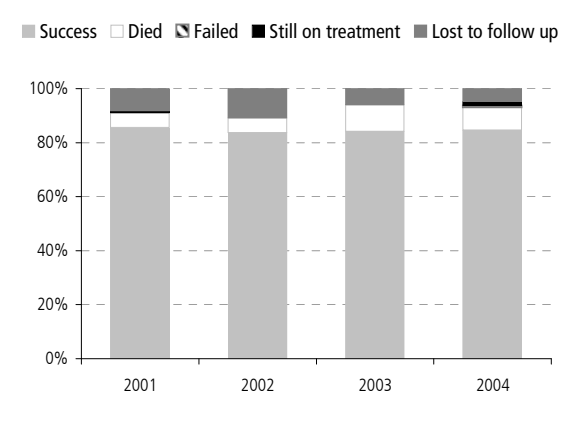
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Poland

Tuberculosis case notifications, 2005

Total number of cases	9 280	
Notification rate per 100 000	24.1	
Sex ratio (M:F)	1.9	
Median age-group (all cases)	45-54 years	
Median age-group, non-nationals	25-34 years	
Foreign citizens	17	(0.2%)
New (not previously diagnosed)	8 203	(88.4%)
Culture positive	5 409	(58.3%)
Pulmonary	8 459	(91.2%)
of which sputum smear positive	3 258	(38.5%)
HIV positive TB cases (2003)	15	(0.1%)
TB deaths per 100 000 (2004)	2.13	

Drug Resistance Surveillance

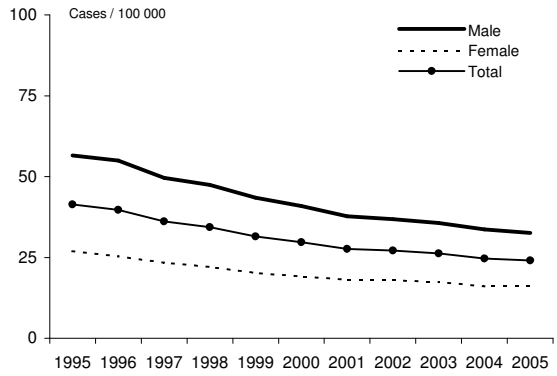
Geographic coverage	National	
International proficiency testing	Yes (2004)	
Case-linked data reporting	No	
Cases with DST results	3 239 *	
Cases resistant to isoniazid	162	(5.0%)
Cases resistant to rifampicin	66	(2.0%)
MDR cases	51	(1.6%)
Cases resistant to ethambutol	16	(0.5%)
Cases resistant to streptomycin	131	(4.0%)

*** Survey in 2001 of all DST laboratories**

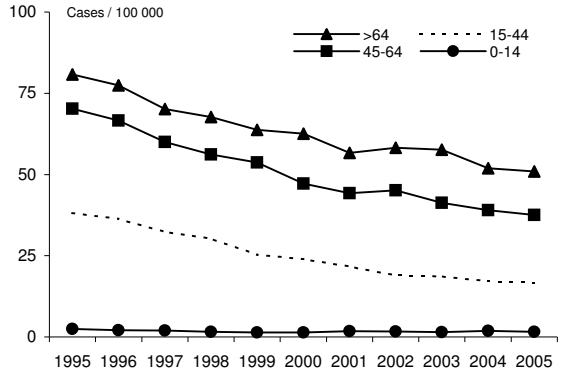
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	4 860	
Success	3 606	(74%)
Died	310	(6%)
Failed	39	(1%)
Still on treatment	19	(0%)
Lost to follow up	886	(18%)

Tuberculosis notification rates by sex, 1995-2005

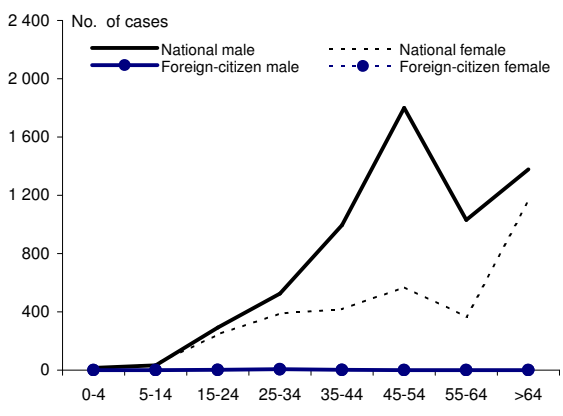


Tuberculosis notification rates by age group, 1995-2005

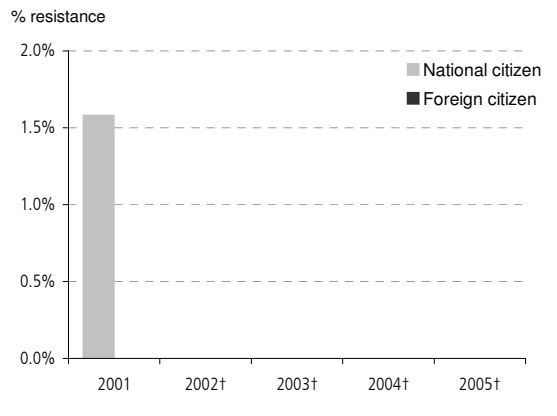


Tuberculosis cases by geographic origin, 1995-2005

Tuberculosis cases by origin, age group and sex, 2005

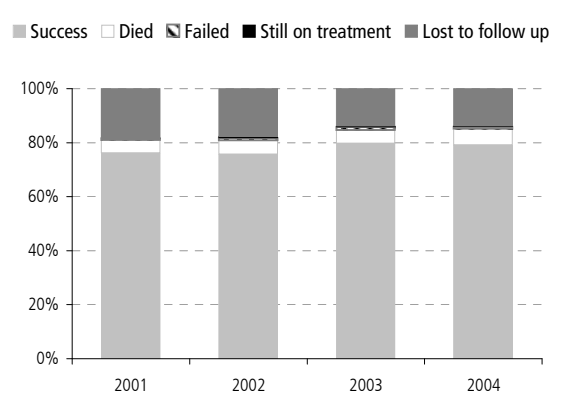


Combined multidrug resistance, by origin, 2001-2005†



† No data for 2002-2005

Outcomes, new pulmonary culture positive cases, 2001-2004



Portugal

Tuberculosis case notifications, 2005

Total number of cases	3 536	
Notification rate per 100 000	33.7	
Sex ratio (M:F)	2.1	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	35-44 years	
Foreign born	413	(11.7%)
New (never treated)	3 186	(90.1%)
Culture positive	1 813	(51.3%)
Pulmonary	2 564	(72.5%)
of which sputum smear positive	1 467	(57.2%)
HIV positive TB cases	546	(15.4%)
TB deaths per 100 000 (2003)	2.01	

Drug Resistance Surveillance, 2005

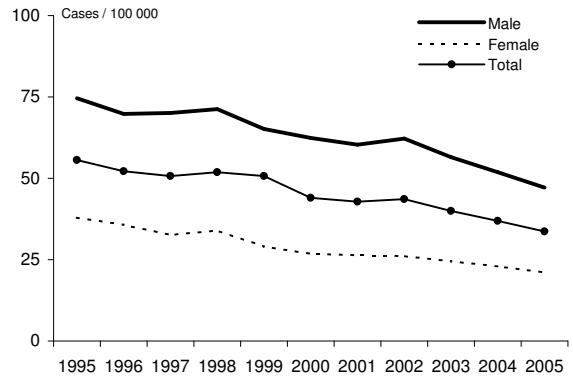
Geographic coverage	National *	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	1 100	
Cases resistant to isoniazid	78	(7.1%)
Cases resistant to rifampicin	24	(2.2%)
MDR cases	23	(2.1%)
Cases resistant to ethambutol	16	(1.5%)
Cases resistant to streptomycin	124	(11.3%)

*** Data representativeness unknown**

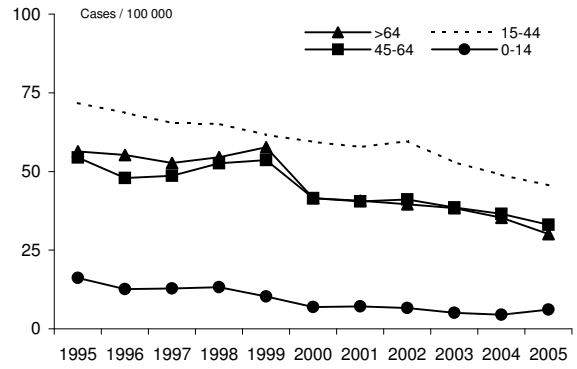
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	2 113	
Success	1 773	(84%)
Died	111	(5%)
Failed	8	(0%)
Still on treatment	67	(3%)
Lost to follow up	154	(7%)

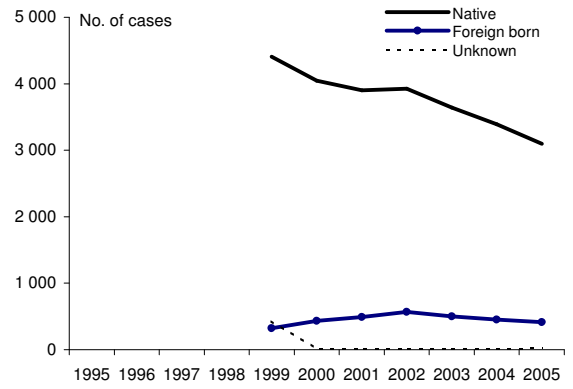
Tuberculosis notification rates by sex, 1995-2005



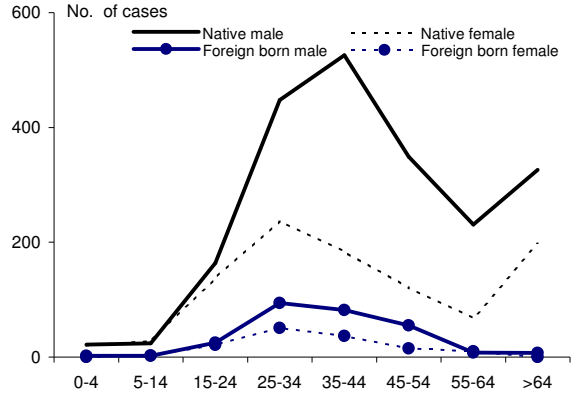
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

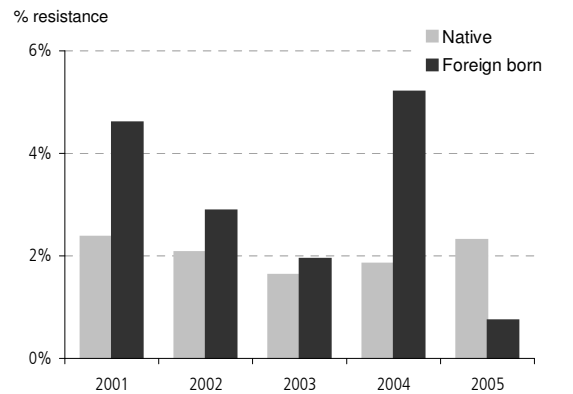


Tuberculosis cases by origin, age group and sex, 2005

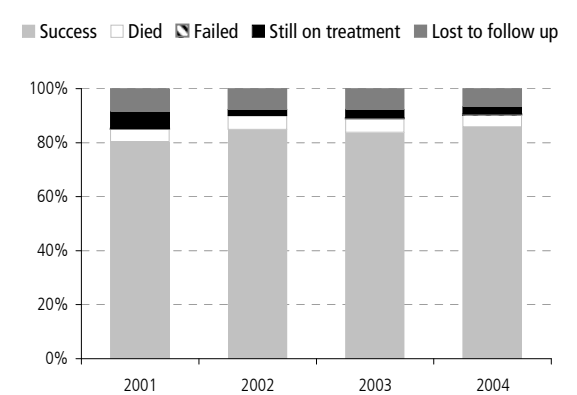


Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



Outcomes, new pulmonary culture positive cases, 2001-2004



Romania

Tuberculosis case notifications, 2005

Total number of cases	29 347	
Notification rate per 100 000	135.2	
Sex ratio (M:F)	2.3	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	35-44 years	
Foreign-born	2	(0.0%)
New (never-treated)	22 408	(76.4%)
Culture positive	11 788	(40.2%)
Pulmonary	25 574	(87.1%)
of which sputum smear positive	15 968	(62.4%)
HIV positive TB cases	187	(0.6%)
TB deaths per 100 000 (2004)	9.64	

Drug Resistance Surveillance, 2003-2004

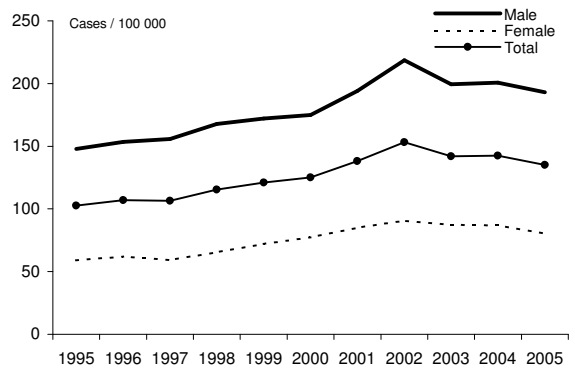
Geographic coverage	National	
International proficiency testing	Yes (2005)	
Case-linked data reporting	No	
Cases with DST results	1 251 *	
Cases resistant to isoniazid	179	(14.3%)
Cases resistant to rifampicin	90	(7.2%)
MDR cases	66	(5.3%)
Cases resistant to ethambutol	74	(5.9%)
Cases resistant to streptomycin	139	(11.1%)

*** Survey in 2003-2004 by NRL; reported as aggregate data**

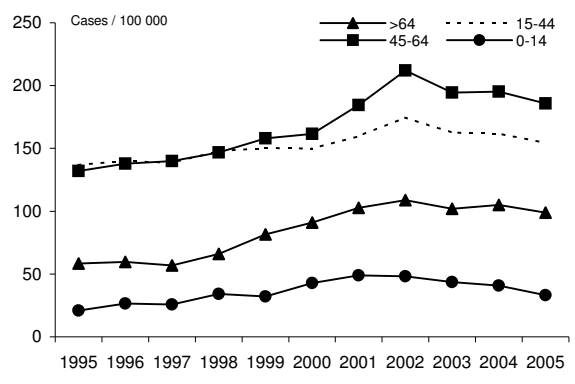
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	18 287	
Success	13 216	(72%)
Died	1 048	(6%)
Failed	1 058	(6%)
Still on treatment	914	(5%)
Lost to follow up	2 051	(11%)

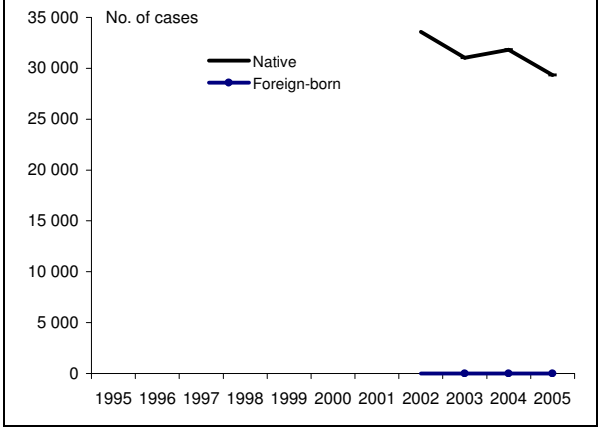
Tuberculosis notification rates by sex, 1995-2005



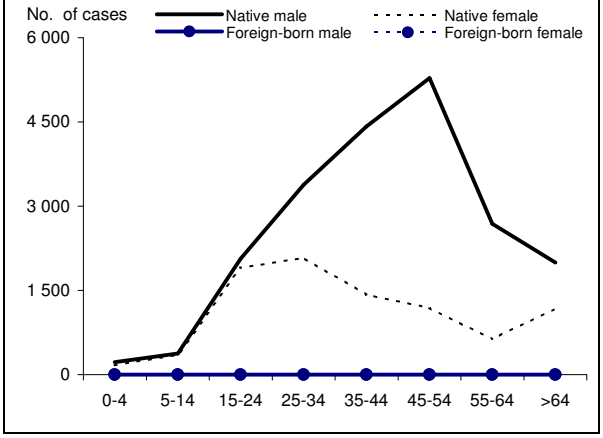
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

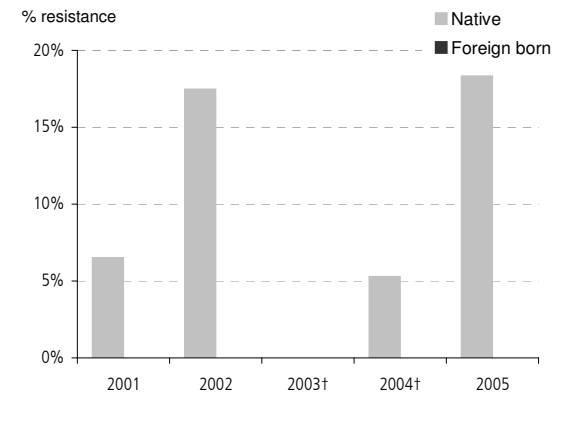


Tuberculosis cases by origin, age group and sex, 2005



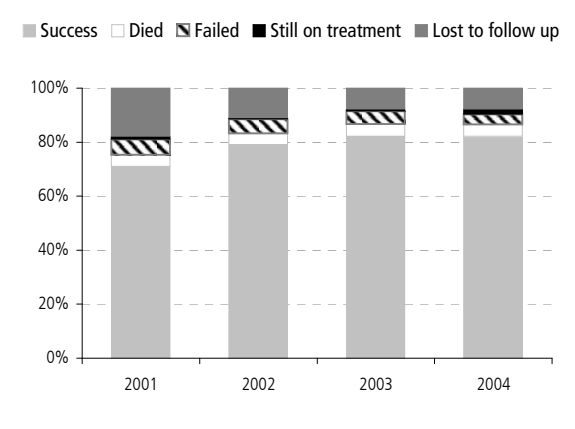
Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown†



† Data for 2004 from representative survey of all DST labs in 2003-2004

Outcomes, new pulmonary culture positive cases, 2001-2004



Russian Federation

Tuberculosis case notifications, 2005

Total number of cases	156 047	
Notification rate per 100 000	109.0	
Sex ratio (M:F)	-	
Median age-group *	35-44	
Median age-group, non-nationals	-	
Foreign citizens *	896	(0.6%)
New (never-treated)	119 226	(76.4%)
Culture positive	31 224	(20.0%)
Pulmonary	132 171	(84.7%)
of which sputum smear positive	39 278	(29.7%)
HIV positive new TB cases	1 544	(1.3%)
TB deaths per 100 000 (2004)	21.44	

*** New and relapse cases**

Drug Resistance Surveillance †

Regions surveyed (2002)	**Tomsk**	**Orel**
Sampling method	All cases	All cases
New cases with DST results	533	379
resistant to isoniazid	155 (29%)	68 (18%)
MDR	73 (14%)	10 (3%)
Retreated cases with DST results	117	210
resistant to isoniazid	60 (51%)	149 (71%)
MDR	51 (44%)	89 (42%)

source: WHO/HTM/TB/2004.343

Note. Nationwide MoH data on 36,217 new cases tested in 1999 reported primary MDR at 6.7%.

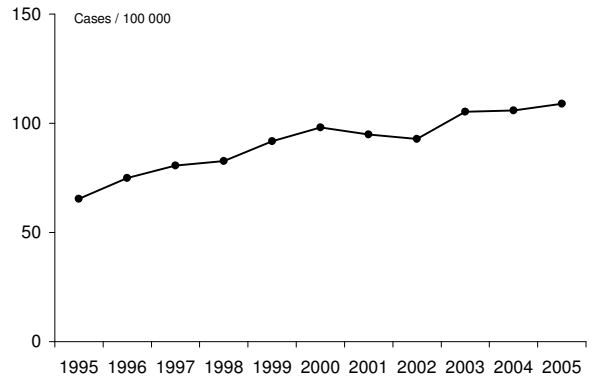
† Data representativeness unknown

Treatment Outcome Monitoring, 2004 †

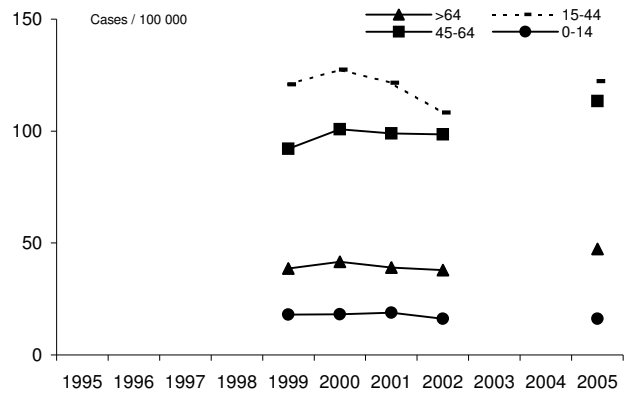
Geographic coverage	DOTS areas	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	10 119	
Success	5 333	(53%)
Died	1 420	(14%)
Failed	1 741	(17%)
Still on treatment	0	(0%)
Lost to follow up	1 625	(16%)

† Data representativeness unknown

Tuberculosis notification rates, 1995-2005

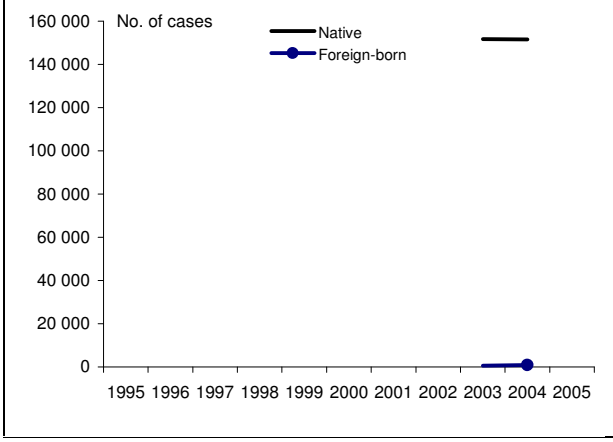


Tuberculosis notification rates by age group, 1995-2005‡



‡ New cases only (including also relapses in 2005)

Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005

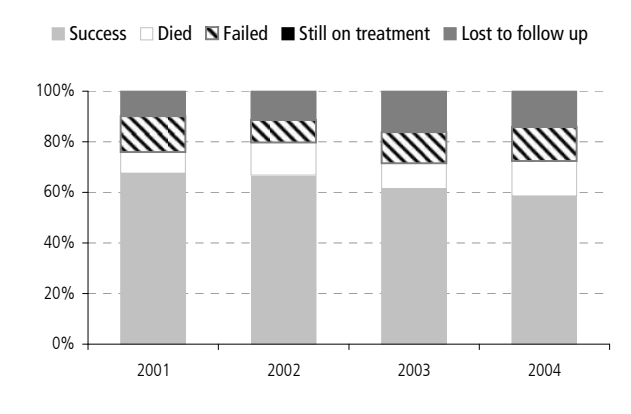
Not available

Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary smear positive cases, 2001-2004

DOTS areas, data representativeness unknown



San Marino

Tuberculosis case notifications, 2005

Not available

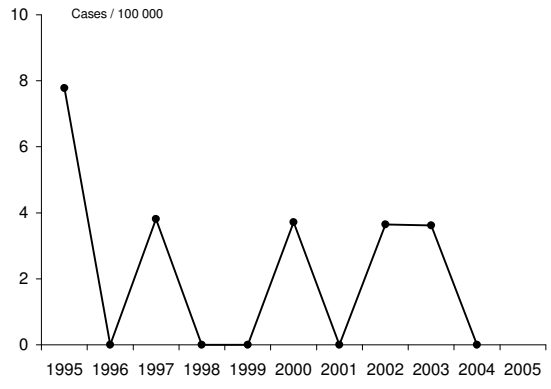
Drug Resistance Surveillance, 2005

Not available

Treatment Outcome Monitoring, 2004

Not available

Tuberculosis notification rates, 1995-2005*



Tuberculosis notification rates by age group, 1995-2005

Insufficient number of cases for graphic presentation

*** No data reported in 2005**

Tuberculosis cases by geographic origin, 1995-2005

Insufficient number of cases for graphic presentation

Tuberculosis cases by origin, age group and sex, 2005

Not available

Combined multidrug resistance, by origin, 2001-2005

No MDR cases reported

Outcomes, new pulmonary culture positive cases, 2001-2004

Insufficient number of cases for graphic presentation

Serbia*

Tuberculosis case notifications, 2005

Total number of cases	2 366 †	
Notification rate per 100 000	31.8	
Sex ratio (M:F)	1.6	
Median age-group, nationals	45-54 years	
Median age-group, non-nationals	45-54 years	
Foreign citizens	39	(1.6%)
New (not previously diagnosed)	2 106	(89.0%)
Culture positive	1 233	(52.1%)
Pulmonary	2 106	(89.0%)
of which sputum smear positive	981	(46.6%)
HIV positive TB cases	3	(0.1%)
TB deaths per 100 000 (2002)	3.29	

† Another 1,102 cases reported by Kosovo

Drug Resistance Surveillance, 2005

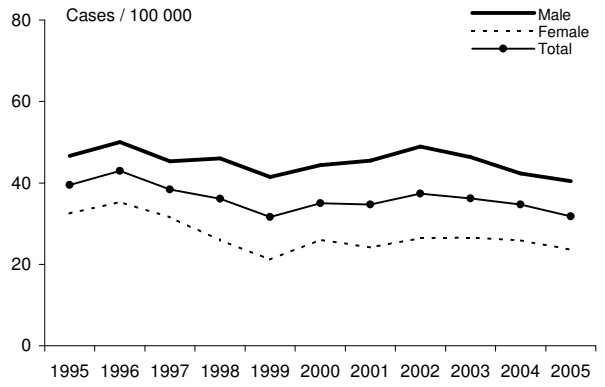
Geographic coverage	Partial ‡	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	1 233	
Cases resistant to isoniazid	16	(1.3%)
Cases resistant to rifampicin	17	(1.4%)
MDR cases	9	(0.7%)
Cases resistant to ethambutol	13	(1.1%)
Cases resistant to streptomycin	28	(2.3%)

‡ Data representativeness unknown

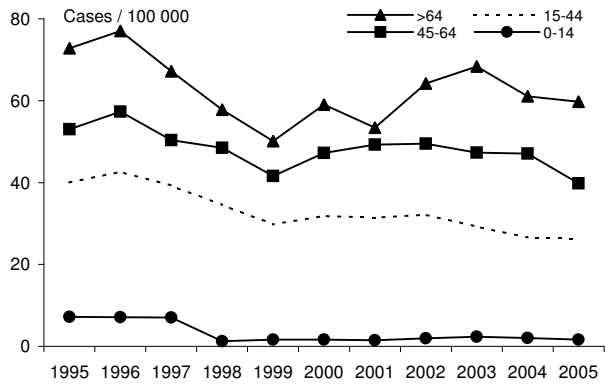
Treatment Outcome Monitoring, 2004

Geographic coverage	Belgrade region	
Outcome cohort	**Pulm smear &/or culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	347	
Success	298	(86%)
Died	24	(7%)
Failed	3	(1%)
Still on treatment	0	(0%)
Lost to follow up	22	(6%)

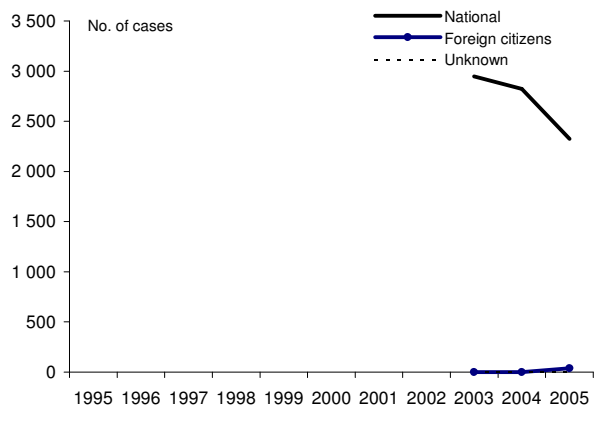
Tuberculosis notification rates by sex, 1995-2005*



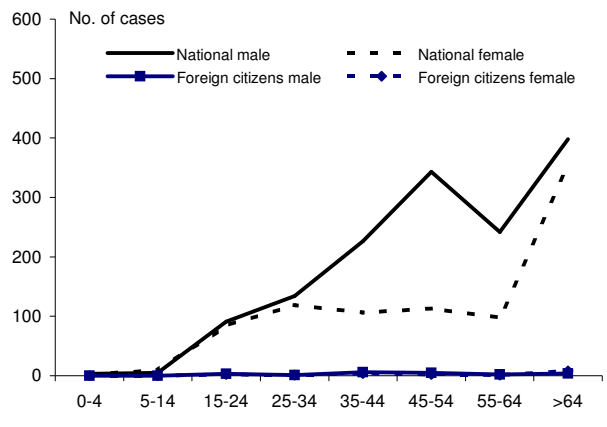
Tuberculosis notification rates by age group, 1995-2005*



Tuberculosis cases by geographic origin, 1995-2005*

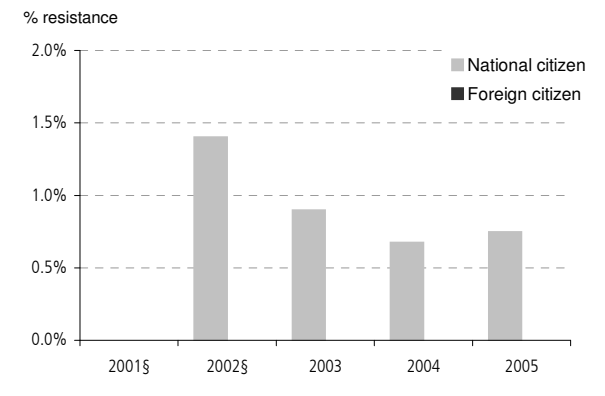


Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005

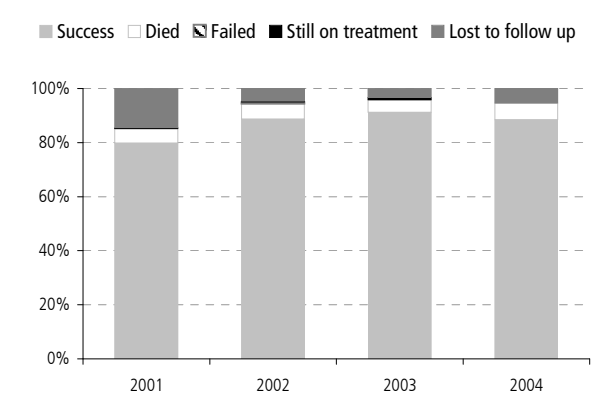
Data representativeness unknown



§ No data for 2001; origin unknown in 2002

Outcomes, new pulm smear &/or culture positive cases, 2001-2004

Belgrade region



*** established in 2006 following the split of Serbia & Montenegro; notifications for Kosovo included until 1997 and for Montenegro until 2004**

Slovakia

Tuberculosis case notifications, 2005

Total number of cases	760	
Notification rate per 100 000	14.1	
Sex ratio (M:F)	1.6	
Median age-group, nationals	55-64 years	
Median age-group, non-nationals	35-44 years	
Foreign born	27	(3.6%)
New (never-treated)	627	(82.5%)
Culture positive	357	(47.0%)
Pulmonary	619	(81.4%)
of which sputum smear positive	186	(30.0%)
HIV positive TB cases	1	(0.1%)
TB deaths per 100 000 (2002)	1.19	

Drug Resistance Surveillance, 2005

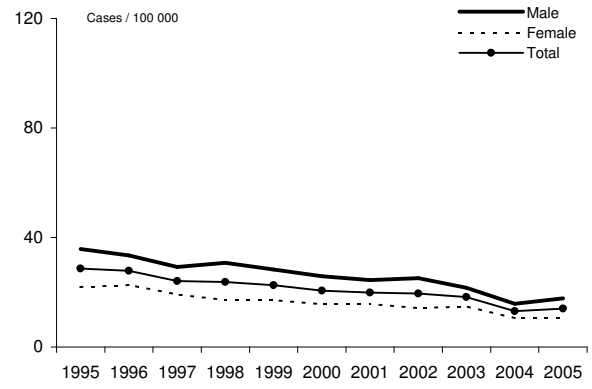
Geographic coverage	National *	
International proficiency testing	Yes (2003)	
Case-linked data reporting	Yes	
Cases with DST results	311	
Cases resistant to isoniazid	23	(7.4%)
Cases resistant to rifampicin	11	(3.5%)
MDR cases	8	(2.6%)
Cases resistant to ethambutol	1	(0.3%)
Cases resistant to streptomycin	13	(4.2%)

* **Data representativeness unknown**

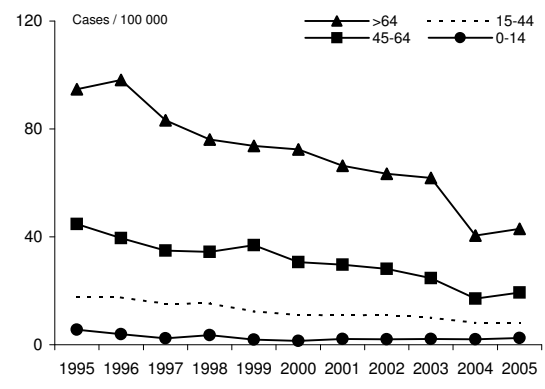
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	323	
Success	282	(87%)
Died	20	(6%)
Failed	2	(1%)
Still on treatment	2	(1%)
Lost to follow up	17	(5%)

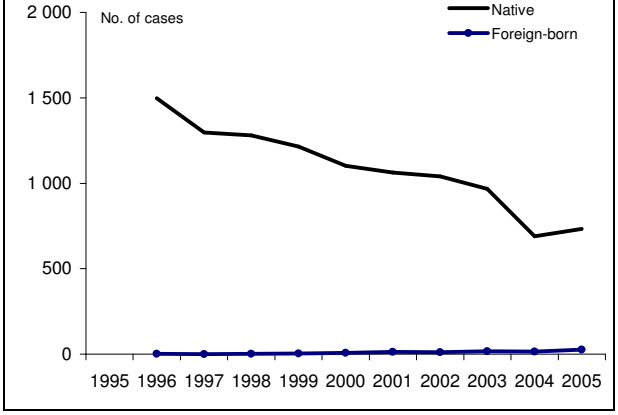
Tuberculosis notification rates by sex, 1995-2005



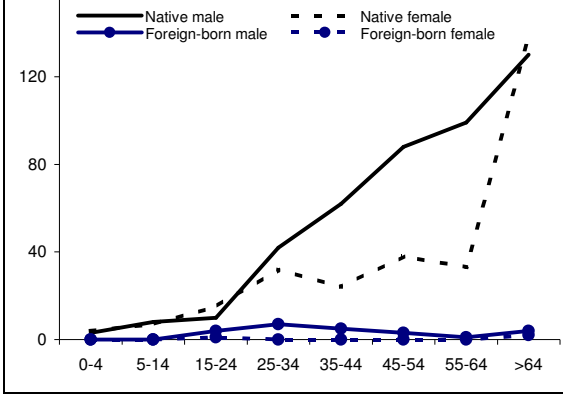
Tuberculosis notification rates by age group, 1995-2005



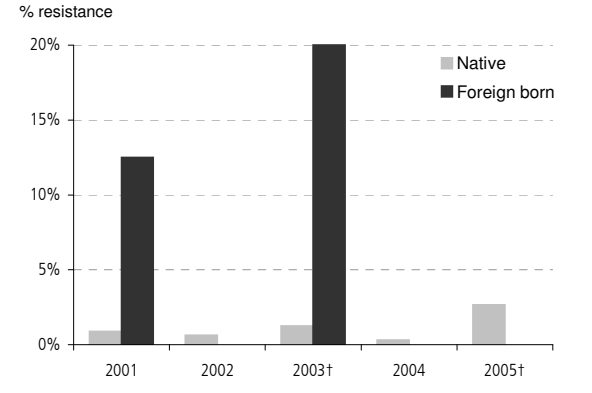
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005

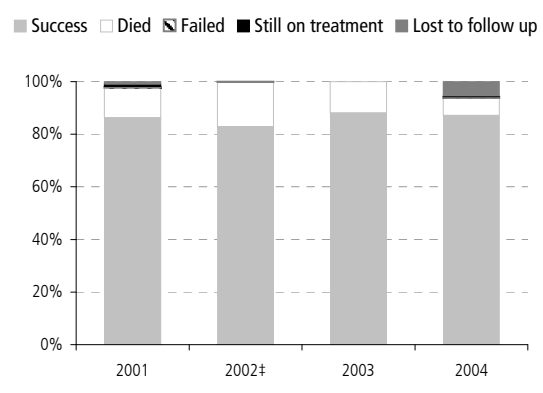


Combined multidrug resistance, by origin, 2001-2005†



† **Data representativeness unknown in 2003 & 2005**

Outcomes, new pulmonary culture positive cases, 2001-2004



‡ **Data representativeness unknown in 2002**

Slovenia

Tuberculosis case notifications, 2005

Total number of cases	278	
Notification rate per 100 000	14.1	
Sex ratio (M:F)	1.4	
Median age-group, nationals	45-54	years
Median age-group, non-nationals	45-54	years
Foreign born	48	(17.3%)
New (never-treated)	249	(89.6%)
Culture positive	245	(88.1%)
Pulmonary	246	(88.5%)
of which sputum smear positive	127	(51.6%)
HIV positive TB cases	0	(0.0%)
TB deaths per 100 000 (2004)	0.6	

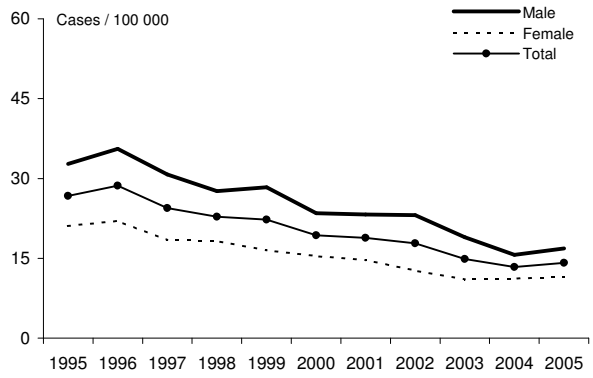
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	245	
Cases resistant to isoniazid	10	(4.1%)
Cases resistant to rifampicin	1	(0.4%)
MDR cases	1	(0.4%)
Cases resistant to ethambutol	1	(0.4%)
Cases resistant to streptomycin	7	(2.9%)

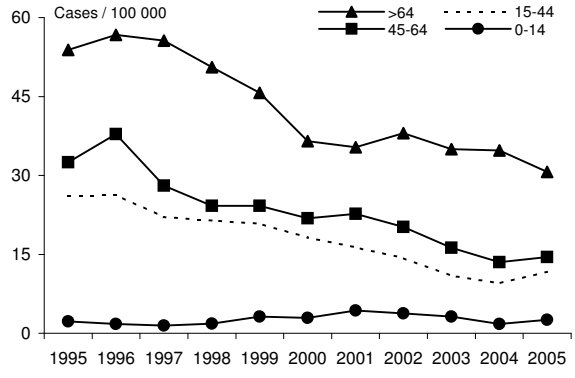
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	194	
Success	167	(86%)
Died	16	(8%)
Failed	2	(1%)
Still on treatment	2	(1%)
Lost to follow up	7	(4%)

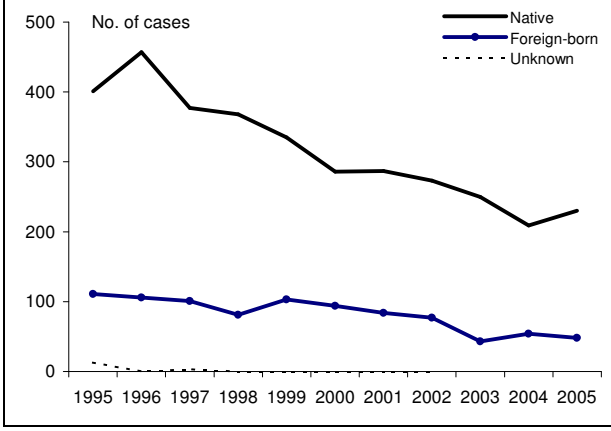
Tuberculosis notification rates by sex, 1995-2005



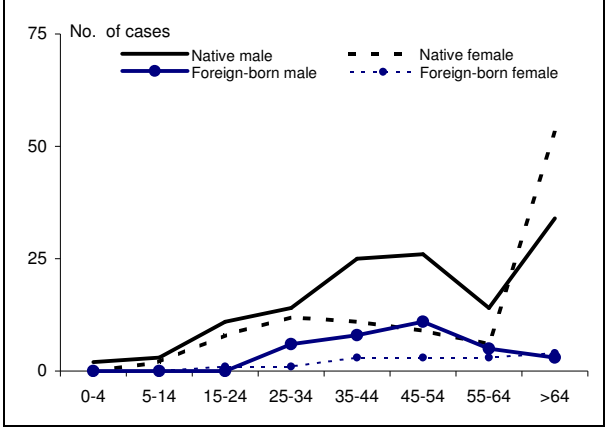
Tuberculosis notification rates by age group, 1995-2005



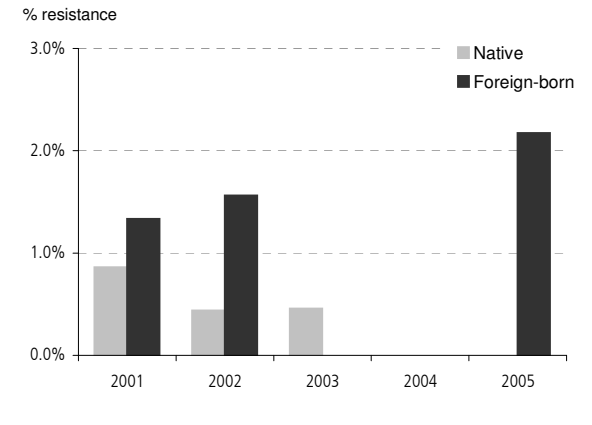
Tuberculosis cases by geographic origin, 1995-2005



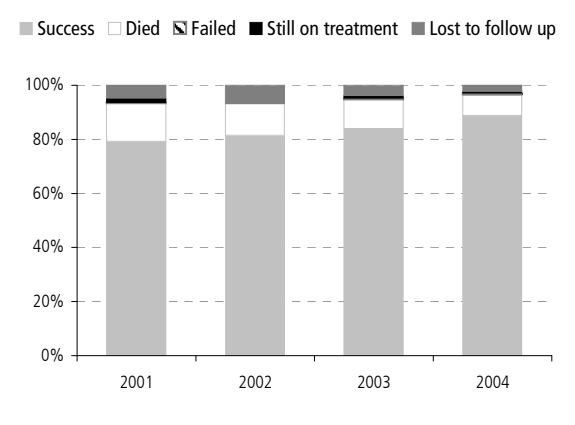
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Spain

Tuberculosis case notifications, 2005

Total number of cases	7 820	
Notification rate per 100 000	18.2	
Sex ratio (M:F)	1.9	
Median age-group, nationals	35-44 years	
Median age-group, non-nationals	25-34 years	
Foreign born*	1 448	(18.5%)
New (never-treated)	6 185	(79.1%)
Culture positive	3 686	(47.1%)
Pulmonary	6 841	(87.5%)
of which sputum smear positive	2 686	(39.3%)
HIV positive TB cases	394	(5.0%)
TB deaths per 100 000 (2004)	0.78	

*** 17% of cases missing information on origin**

Drug Resistance Surveillance, 2005

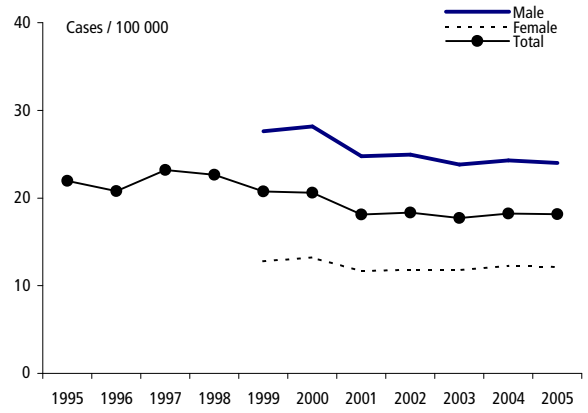
Geographic coverage	National †	
International proficiency testing	Yes	
Case-linked data reporting	No	
Cases with DST results	1 711	
Cases resistant to isoniazid	171	(10.0%)
Cases resistant to rifampicin	95	(5.6%)
MDR cases	80	(4.7%)
Cases resistant to ethambutol	26	(1.5%)
Cases resistant to streptomycin	51	(3.0%)

† Data representativeness unknown

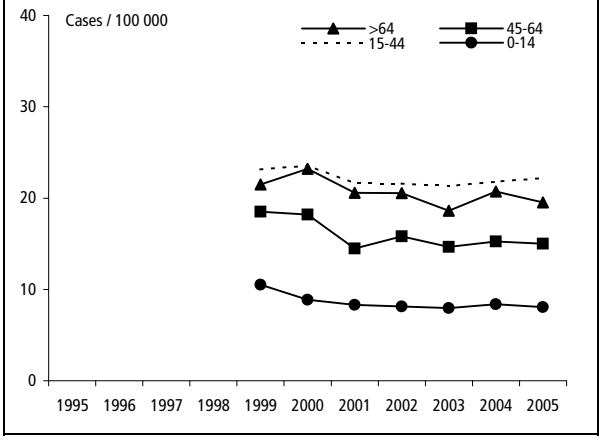
Treatment Outcome Monitoring, 2004

Not available

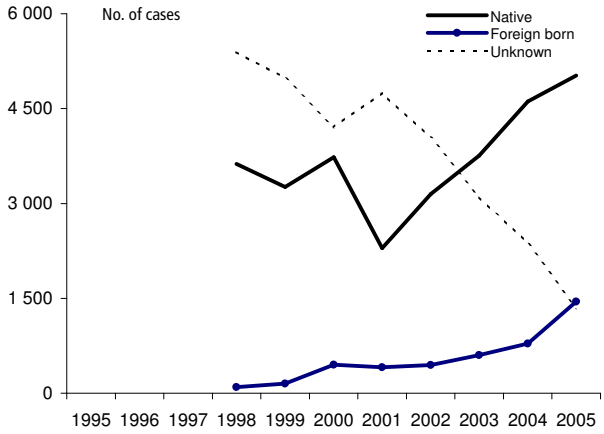
Tuberculosis notification rates, 1995-2005 ‡



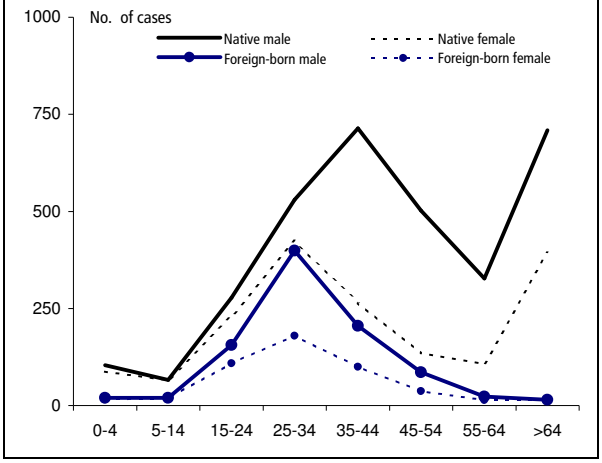
Tuberculosis notification rates by age group, 1995-2005 ‡



Tuberculosis cases by geographic origin, 1995-2004 ‡

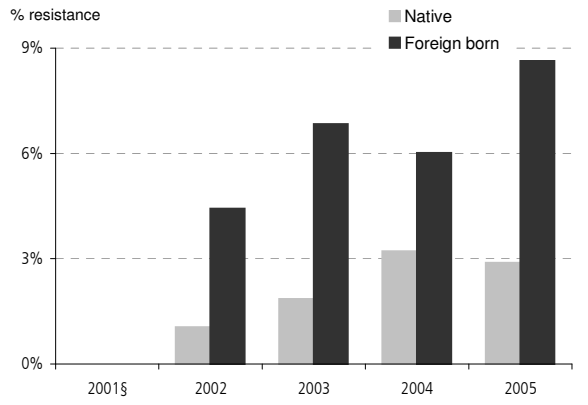


Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005

Data representativeness unknown



§ No data by origin in 2001

Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

‡ 1995-96 new respiratory cases only; 1997-2003 new and recurrent respiratory and meningeal cases

Sweden

Tuberculosis case notifications, 2005

Total number of cases	569	
Notification rate per 100 000	6.3	
Sex ratio (M:F)	1.1	
Median age-group, nationals	>64 years	
Median age-group, non-nationals	35-44 years	
Foreign born	415	(72.9%)
New (never-treated)	539	(94.7%)
Culture positive	446	(78.4%)
Pulmonary	359	(63.1%)
of which sputum smear positive	143	(39.8%)
HIV positive TB cases	-	
TB deaths per 100 000 (2002)	0.24	

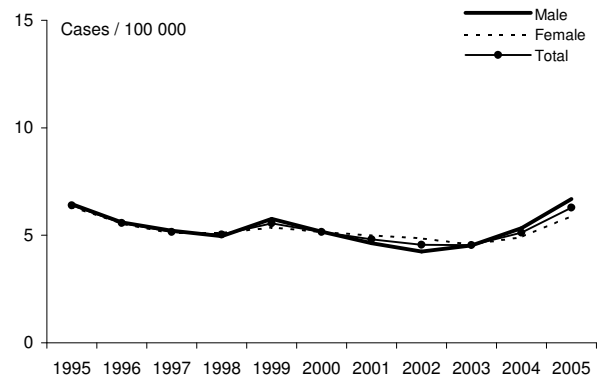
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	444	
Cases resistant to isoniazid	46	(10.4%)
Cases resistant to rifampicin	5	(1.1%)
MDR cases	4	(0.9%)
Cases resistant to ethambutol	3	(0.7%)
Cases resistant to streptomycin	-	-

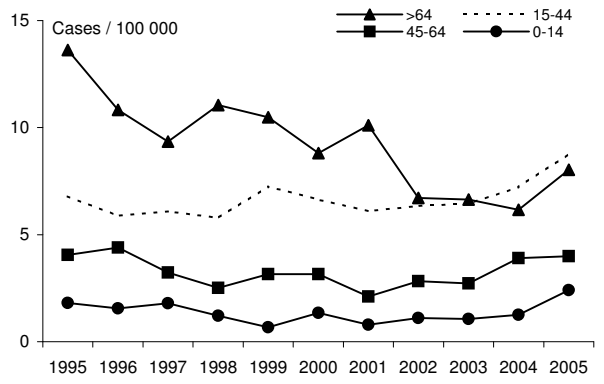
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	122	
Success	78	(64%)
Died	10	(8%)
Failed	1	(1%)
Still on treatment	2	(2%)
Lost to follow up	31	(25%)

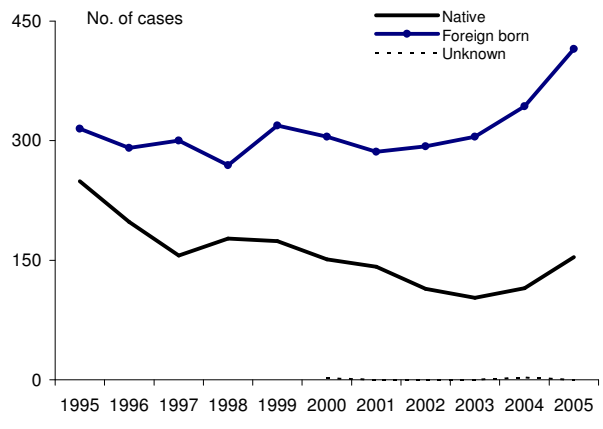
Tuberculosis notification rates by sex, 1995-2005



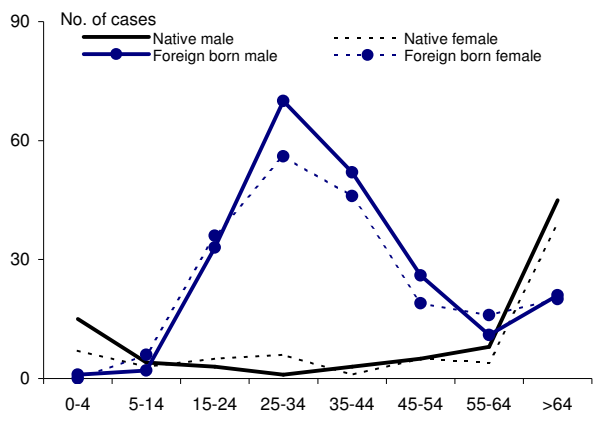
Tuberculosis notification rates by age group, 1995-2005



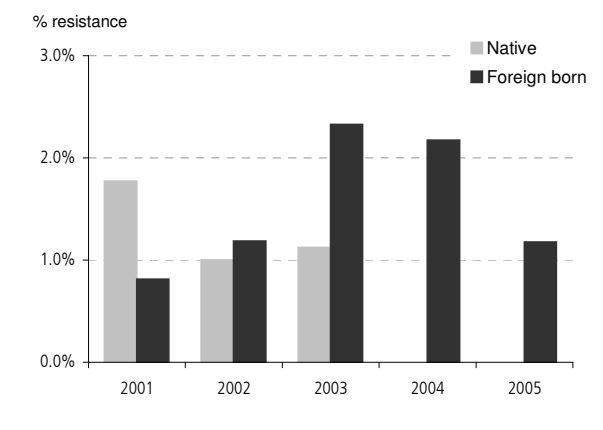
Tuberculosis cases by geographic origin, 1995-2005



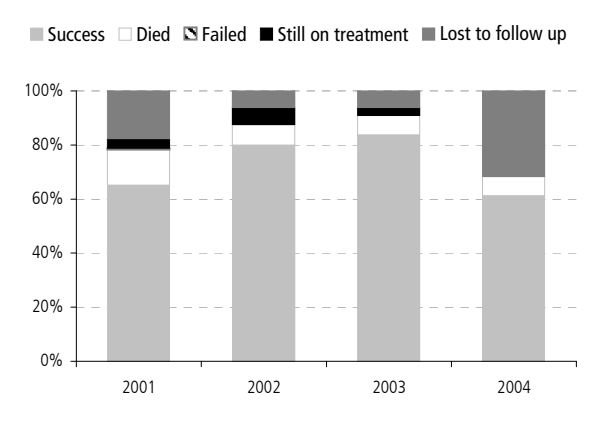
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



Switzerland

Tuberculosis case notifications, 2005

Total number of cases	567	
Notification rate per 100 000	7.8	
Sex ratio (M:F)	1.2	
Median age-group, nationals	55-64	years
Median age-group, non-nationals	25-34	years
Foreign born*	341	(60.1%)
New (never-treated)	407	(71.8%)
Culture positive	463	(81.7%)
Pulmonary	399	(70.4%)
of which sputum smear positive	117	(29.3%)
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	0.22	

*** 13% of cases missing information on origin**

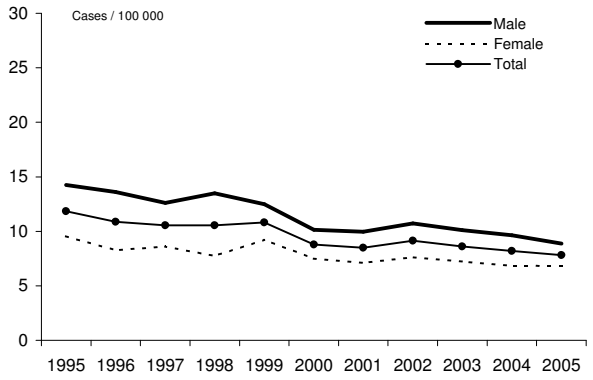
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	457	
Cases resistant to isoniazid	23	(5.0%)
Cases resistant to rifampicin	6	(1.3%)
MDR cases	5	(1.1%)
Cases resistant to ethambutol	2	(0.4%)
Cases resistant to streptomycin	-	-

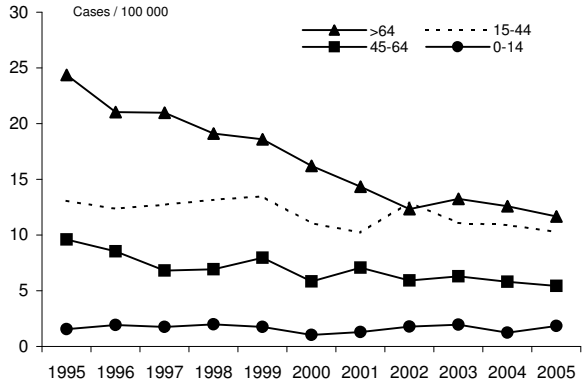
Treatment Outcome Monitoring, 2004

Not available

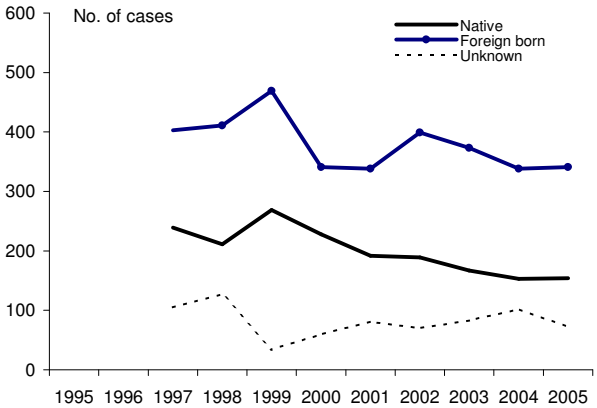
Tuberculosis notification rates by sex, 1995-2005



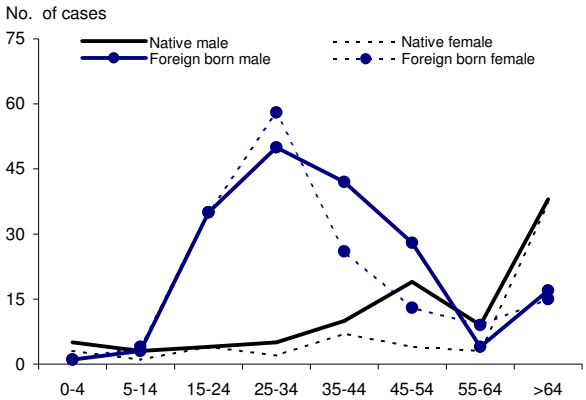
Tuberculosis notification rates by age group, 1995-2005



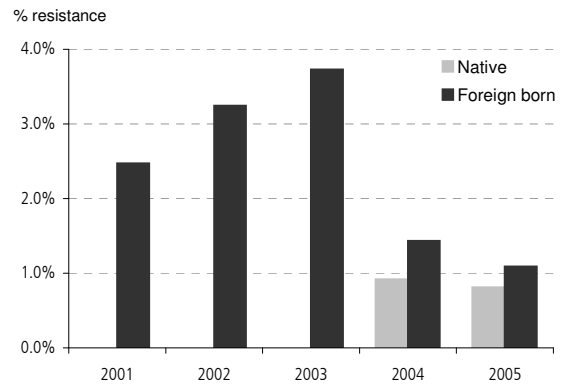
Tuberculosis cases by geographic origin, 1995-2005



Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

Tajikistan

Tuberculosis case notifications, 2005

Total number of cases	7 142	
Notification rate per 100 000	109.8	
Sex ratio (M:F) *	1.3	
Median age-group, all cases *	25-34 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	5 095	(71%)
Culture positive	-	-
Pulmonary	5 718	(80%)
of which sputum smear positive	2 534	(44%)
HIV positive TB cases	-	
TB deaths per 100 000 (2001)	11.06	

*** New cases only**

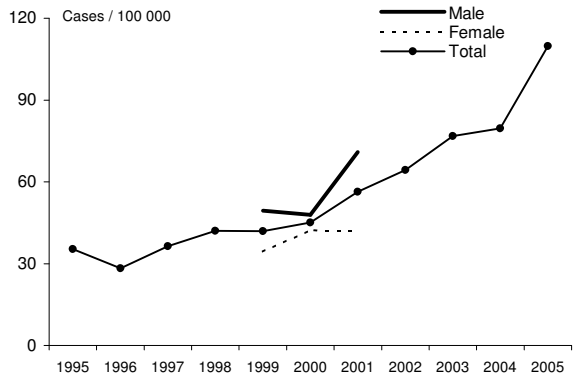
Drug Resistance Surveillance, 2005

Not available

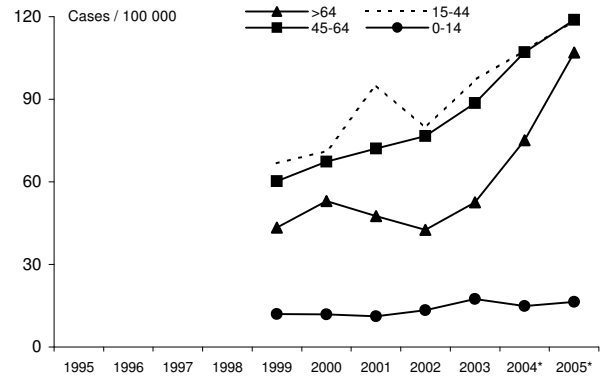
Treatment Outcome Monitoring, 2004

Geographic coverage	National	
Outcome cohort	**New & relapse pulm smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	1 116	
Success	630	(56%)
Died	93	(8%)
Failed	52	(5%)
Still on treatment	0	(0%)
Lost to follow up	341	(31%)

Tuberculosis notification rates, by sex, 1995-2005



Tuberculosis notification rates by age group, 1995-2005

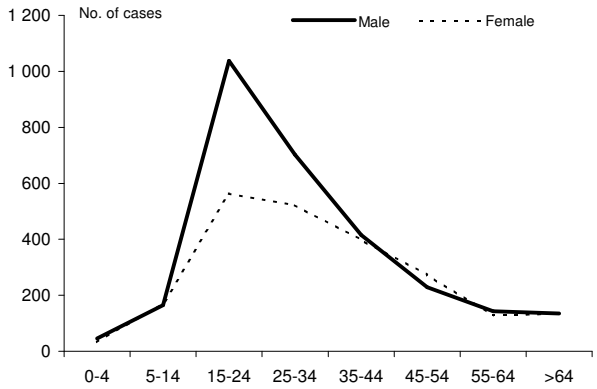


*** New cases only**

Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

Tuberculosis cases by age group and sex, 2005*



*** New cases only**

Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary culture positive cases, 2001-2004†

† Data representativeness unknown in 2002-2003

Turkey

Tuberculosis case notifications, 2005

Total number of cases	20 535	
Notification rate per 100 000	28.1	
Sex ratio (M:F)	1.9	
Median age-group, all cases	25-34	years
Median age-group, non-nationals	25-34	years
Foreign citizens	63	(0.3%)
New (never-treated)	18 753	(91.3%)
Culture positive	5 793	(28.2%)
Pulmonary	14 987	(73.0%)
of which sputum smear positive	8 505	(56.7%)
HIV positive TB cases	-	
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2005

Geographic coverage	National *	
International proficiency testing	Yes	
Case-linked data reporting	Yes	
Cases with DST results	3745	
Cases resistant to isoniazid	430	(11.5%)
Cases resistant to rifampicin	251	(6.7%)
MDR cases	191	(5.1%)
Cases resistant to ethambutol	148	(4.0%)
Cases resistant to streptomycin	304	(8.1%)

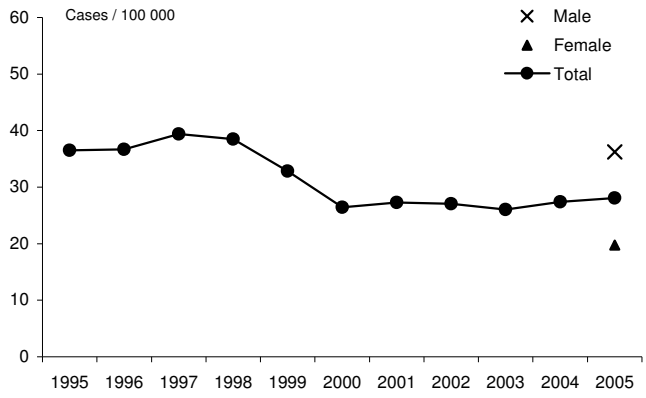
*** Data representativeness unknown**

Treatment Outcome Monitoring, 2004

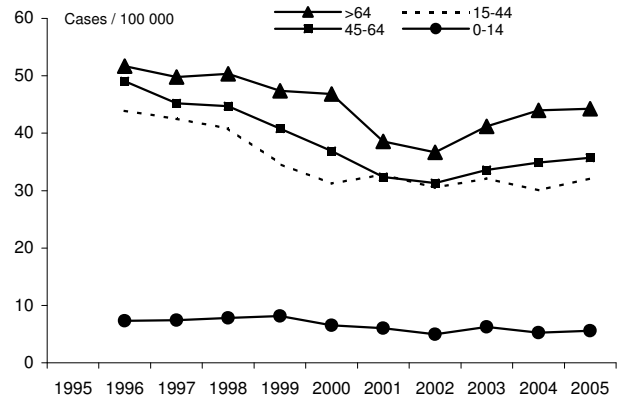
Geographic coverage	National *	
Outcome cohort	**Pulm smear &/or culture positive**	
Case-linked data reporting	No	
Included in TOM cohort	5 854	
Success	4 967	(85%)
Died	163	(3%)
Failed	2	(0%)
Still on treatment	180	(3%)
Lost to follow up	542	(9%)

*** Data representativeness unknown**

Tuberculosis notification rates, 1995-2005

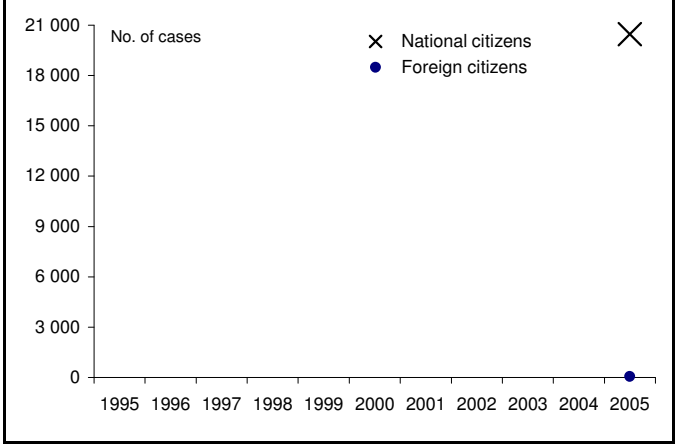


Tuberculosis notification rates by age group, 1995-2005†

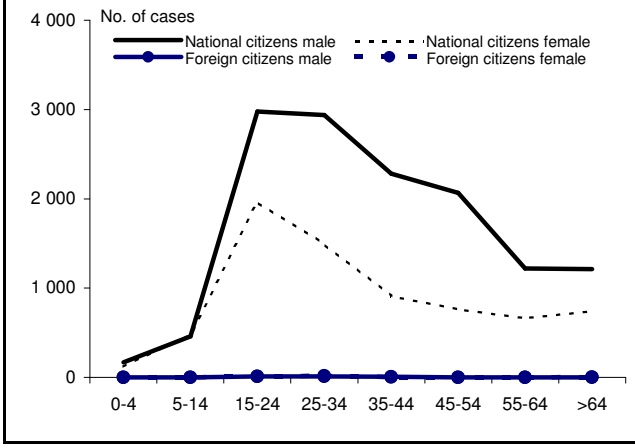


† New cases only

Tuberculosis cases by geographic origin, 1995-2005

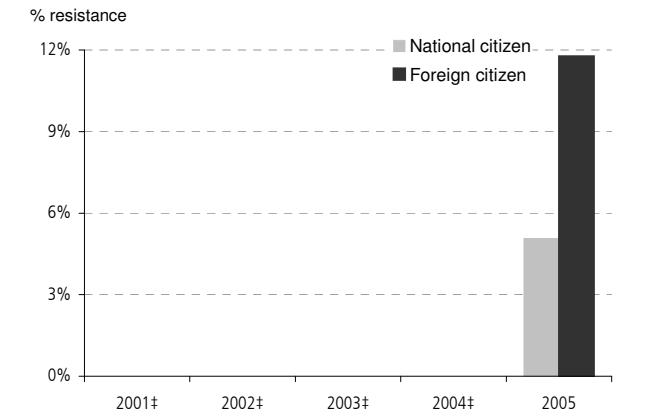


Tuberculosis cases by origin, age group and sex, 2005



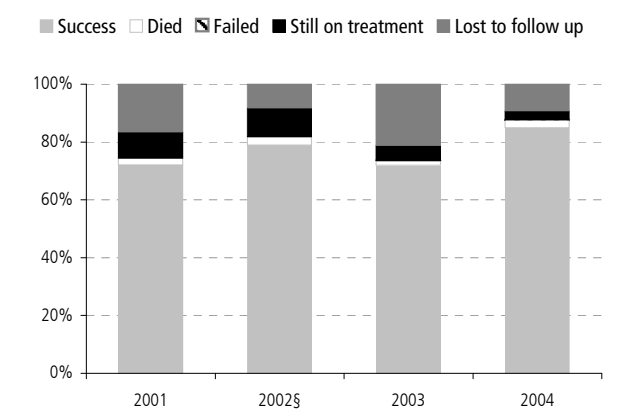
Combined multidrug resistance, by origin, 2001-2005 ‡

Data representativeness unknown



‡ No data for 2001-2004

Outcomes, new pulm smear &/or culture positive cases, 2001-2004



§ Data representativeness unknown in 2002

Turkmenistan

Tuberculosis case notifications, 2005

Total number of cases	3 291	
Notification rate per 100 000	68.1	
Sex ratio (M:F)	1.9	
Median age-group, all cases	25-34 years	
Median age-group, non-nationals	-	
Foreign born	0	(0.0%)
New (never-treated)	3 149	(95.7%)
Culture positive	-	-
Pulmonary	2 635	(80.1%)
of which sputum smear positive	1 104	(41.9%)
HIV positive TB cases	-	
TB deaths per 100 000	-	

Drug Resistance Surveillance, 2001-2002

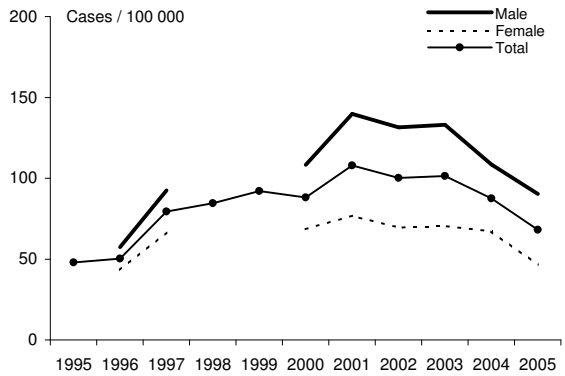
Geographic coverage	Partial *	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	105 *	
Cases resistant to isoniazid	16	(15.2%)
Cases resistant to rifampicin	4	(3.8%)
MDR cases	4	(3.8%)
Cases resistant to ethambutol	2	(1.9%)
Cases resistant to streptomycin	26	(24.8%)

*** Data shown for new cases only included in regional survey 2001-2002 (Dashoguz); representativeness unknown**

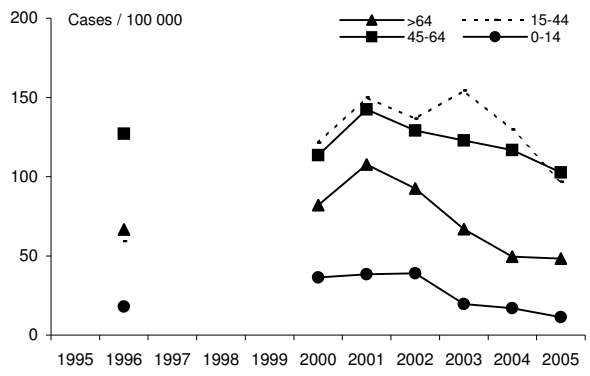
Treatment Outcome Monitoring, 2003

Geographic coverage	National	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	1 694	
Success	1 159	(68%)
Died	161	(10%)
Failed	215	(13%)
Still on treatment	0	(0%)
Lost to follow up	159	(9%)

Tuberculosis notification rates by sex, 1995-2005



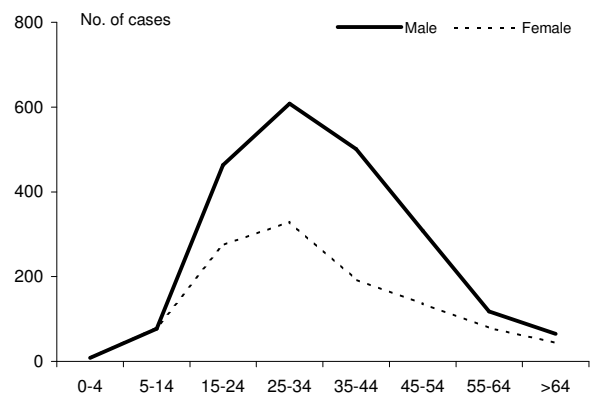
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

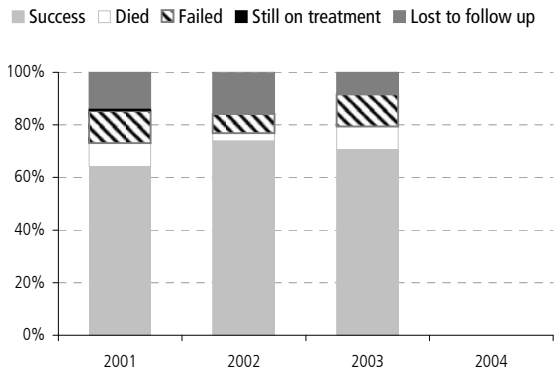
Tuberculosis cases by age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary smear positive cases, 2001-2004



Ukraine

Tuberculosis case notifications, 2005

Total number of cases	43 367	
Notification rate per 100 000	93.3	
Sex ratio (M:F)	-	
Median age-group, nationals	-	
Median age-group, non-nationals	-	
Foreign born/citizens	0	(0.0%)
New (never-treated)	38 403	(88.6%)
Culture positive	-	-
Respiratory	-	-
of which sputum smear positive	-	-
HIV positive TB cases	-	
TB deaths per 100 000 (2004)	22.82	

Drug Resistance Surveillance, 1999

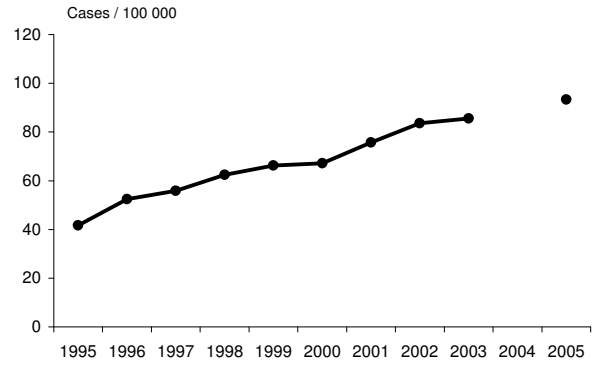
Geographic coverage	Kiev *	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	245 *	
Cases resistant to isoniazid	30	(12.2%)
Cases resistant to rifampicin	27	(11.0%)
MDR cases	19	(7.8%)
Cases resistant to ethambutol	1	(0.4%)
Cases resistant to streptomycin	32	(13.1%)

*** Data shown for new cases only from a single laboratory; representativeness unknown**

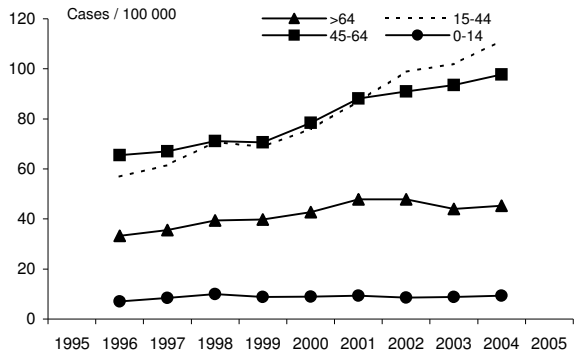
Treatment Outcome Monitoring, 2004

Not available

Tuberculosis notification rates, 1995-2005



Tuberculosis notification rates by age group, 1995-2005†

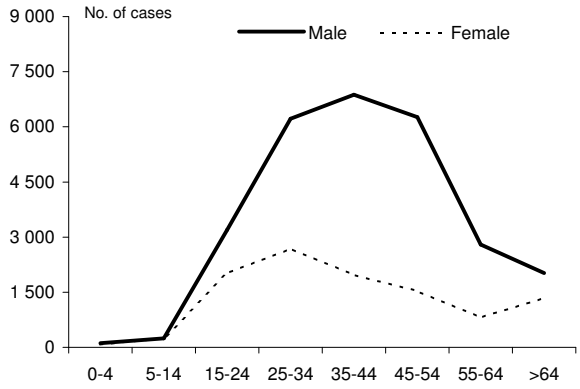


† New cases only

Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

Tuberculosis cases by age group and sex, 2004†



† New cases only

Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary culture positive cases, 2001-2004

Not available

United Kingdom

Tuberculosis case notifications, 2005

Total number of cases	8 465	
Notification rate per 100 000	14.2	
Sex ratio (M:F)	1.2	
Median age-group, all cases	35-44 years	
Median age-group, non-nationals	25-34 years	
Foreign born *	5 392	(63.7%)
New (not previously diagnosed)	6 029	(71.2%)
Culture positive	5 086	(60.1%)
Pulmonary	4 725	(55.8%)
of which sputum smear positive	1 892	(40.0%)
HIV positive TB cases (2003)	548	(8.3%)
TB deaths per 100 000 (2004)	0.64	

*** 11% of cases missing information on origin**

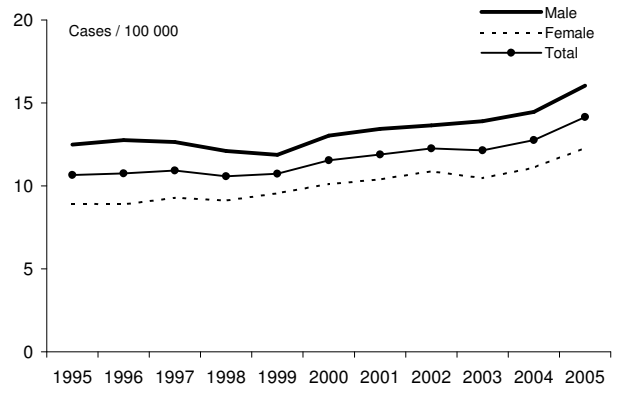
Drug Resistance Surveillance, 2005

Geographic coverage	National	
International proficiency testing	Yes (2004)	
Case-linked data reporting	Yes	
Cases with DST results	4 666	
Cases resistant to isoniazid	322	(6.9%)
Cases resistant to rifampicin	105	(2.3%)
MDR cases	39	(0.8%)
Cases resistant to ethambutol	16	(0.3%)
Cases resistant to streptomycin	-	-

Treatment Outcome Monitoring, 2004

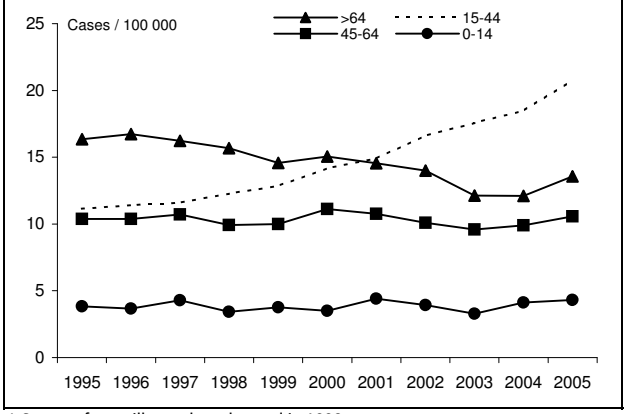
Geographic coverage	National	
Outcome cohort	**All pulmonary culture positive**	
Case-linked data reporting	Yes	
Included in TOM cohort	3 166	
Success	2 105	(66%)
Died	195	(6%)
Failed	0	(0%)
Still on treatment	125	(4%)
Lost to follow up	741	(23%)

Tuberculosis notification rates by sex, 1995-2005†



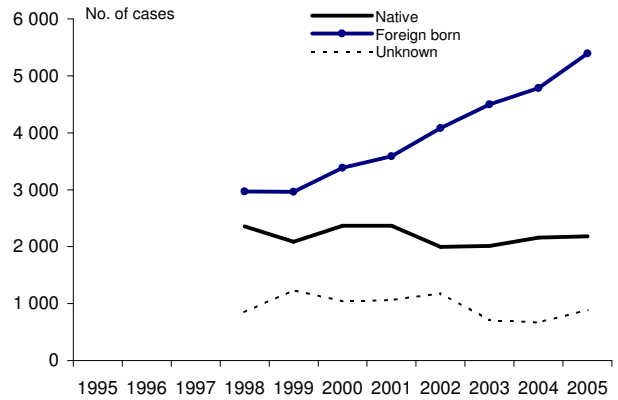
† Source of surveillance data changed in 1998

Tuberculosis notification rates by age group, 1995-2005†



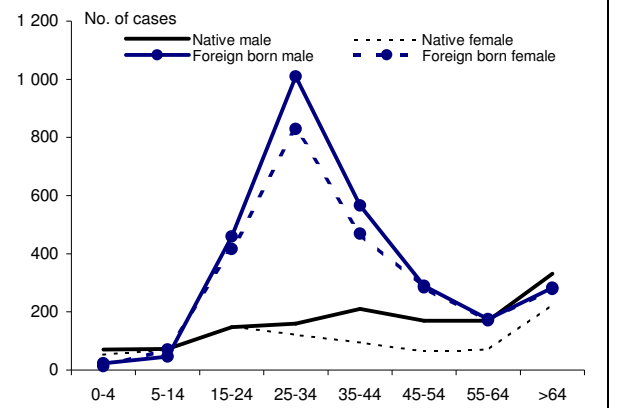
† Source of surveillance data changed in 1998

Tuberculosis cases by geographic origin, 1995-2005†

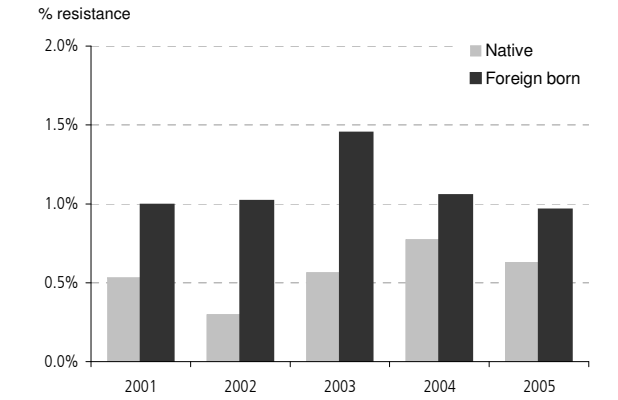


† Source of surveillance data changed in 1998

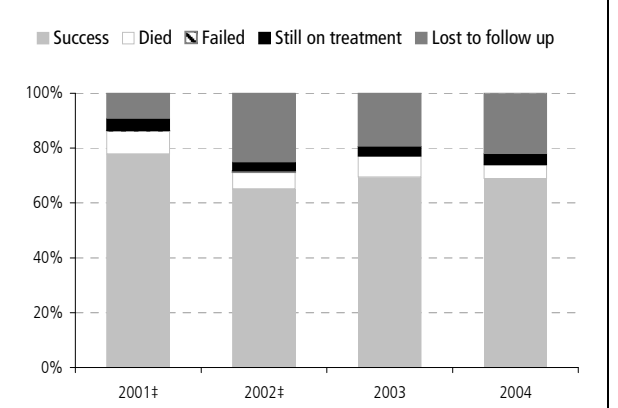
Tuberculosis cases by origin, age group and sex, 2005



Combined multidrug resistance, by origin, 2001-2005



Outcomes, new pulmonary culture positive cases, 2001-2004



‡ Excluding Scotland in 2001-2002

Uzbekistan

Tuberculosis case notifications, 2005

Total number of cases	28 891	
Notification rate per 100 000	108.6	
Sex ratio (M:F)	1.3	
Median age-group, all cases	35-44 years	
Median age-group, non-nationals	-	
Foreign citizens	0	(0.0%)
New (never-treated)	19 876	(68.8%)
Culture positive	-	
Pulmonary	22 018	(76.2%)
of which sputum smear positive	9 262	(42.1%)
HIV positive TB cases	147	(0.5%)
TB deaths per 100 000 (2003)	12.92	

Drug Resistance Surveillance, 2001-2002

Geographic coverage	Partial *	
International proficiency testing	No	
Case-linked data reporting	No	
Cases with DST results	106 *	
Cases resistant to isoniazid	39	(36.8%)
Cases resistant to rifampicin	14	(13.2%)
MDR cases	14	(13.2%)
Cases resistant to ethambutol	16	(15.1%)
Cases resistant to streptomycin	47	(44.3%)

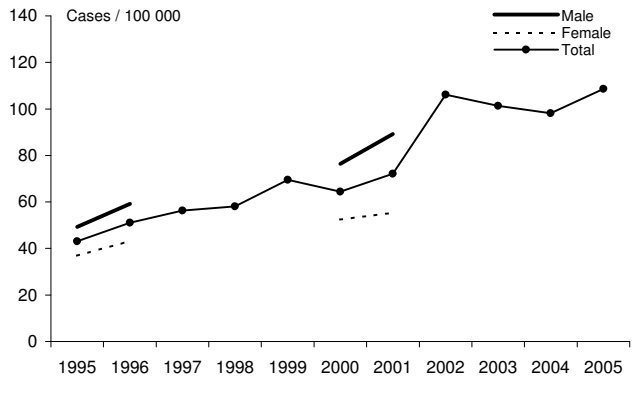
*** Data shown for new cases only included in regional survey 2001-2002 (Karakalpakstan); representativeness unknown**

Treatment Outcome Monitoring, 2004

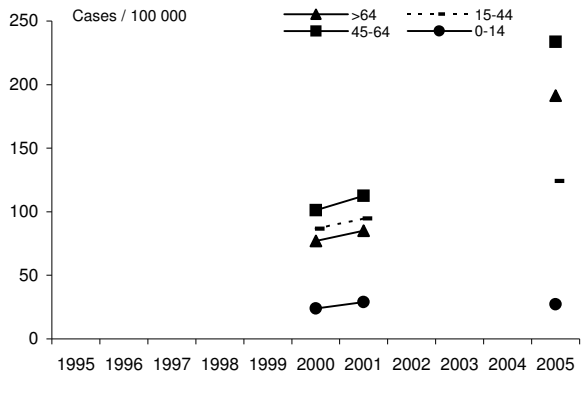
Geographic coverage	DOTS areas†	
Outcome cohort	**All pulmonary smear positive**	
Case-linked data reporting	No	
Included in TOM cohort	5 931	
Success	4 418	(74%)
Died	418	(7%)
Failed	423	(7%)
Still on treatment	0	(0%)
Lost to follow up	672	(11%)

† Data representativeness unknown

Tuberculosis notification rates by sex, 1995-2005



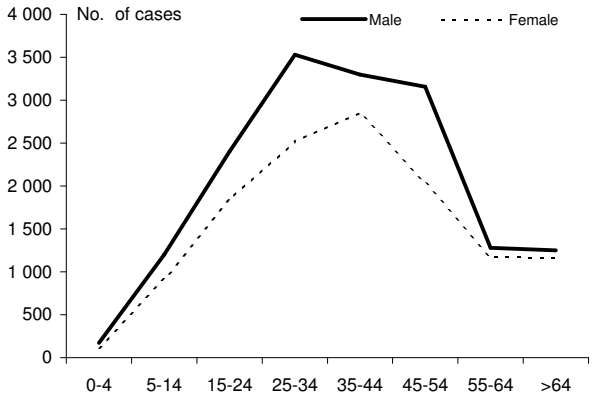
Tuberculosis notification rates by age group, 1995-2005



Tuberculosis cases by geographic origin, 1995-2005

No foreign citizens reported

Tuberculosis cases by age group and sex, 2005

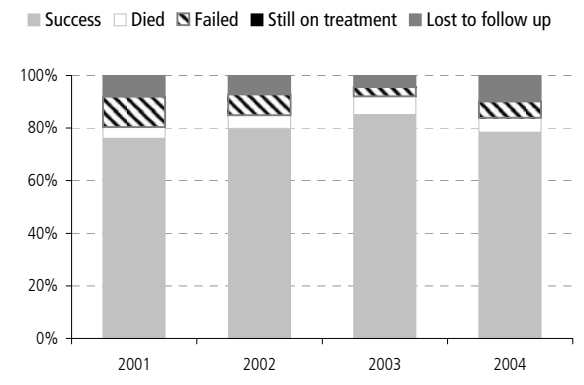


Combined multidrug resistance, by origin, 2001-2005

Not available

Outcomes, new pulmonary smear positive cases, 2001-2004

Data representativeness unknown



6. Technical Note

All 53 countries of the WHO European Region are included in tuberculosis surveillance activities coordinated by EuroTB (list of national Contact Points after title page). National surveillance institutions are responsible for the quality of data provided. The procedures, methods and definitions guiding EuroTB activities are those recommended by European experts, WHO and the International Union against Tuberculosis and Lung Disease (UNION) **[1-4].**

6.1 Reporting of tuberculosis cases, mortality, drug resistance and treatment outcome

TB case reporting and mortality

Since 1996 (reporting year 1995), data on TB notification for the previous calendar year have been collected annually. Reporting of case-based, anonymous data, in accordance with standardised specifications (see www.eurotb.org), is preferred over aggregate reporting.[1] Individual data are now requested for the latest two years to allow for belated exclusion of cases included repeatedly or found not to have TB, as well as for updates of certain data including culture and treatment outcome. This may explain certain differences in data presented in the current report and those shown in previous years or in other publications.

Countries not reporting case-based records report notifications in standard, aggregate tables by age-group, sex, geographic origin, previous history of anti-TB treatment, site of disease, culture and sputum smear results. Following reception, EuroTB staff control data in liaison with the respective country. Since 1999, aggregate TB notification and outcome data have been collected and validated in collaboration with WHO personnel.

Tuberculosis mortality data were retrieved from the WHO Statistical Information System (WHOSIS) Mortality Database, available on Internet **[5].** Both data coded under ICD9 and ICD10 were used. Population data for calculation of mortality rates were likewise downloaded from this site.

TB/HIV surveillance

Information on HIV sero-status of notified TB cases is collected by EuroTB in aggregate format only. Information on TB morbidity at AIDS diagnosis is obtained from case-based information on initial AIDS-indicative diseases reported to EuroHIV **[6].** The number of cases with HIV-associated TB obtained from both TB and AIDS notification is an underestimate. Testing and reporting of HIV sero-status of TB cases is incomplete. Moreover, TB episodes occurring after initial AIDS diagnosis are not reported to AIDS notification systems.

Drug resistance surveillance (DRS)

Since the reporting year 1998, the results of drug susceptibility testing (DST) from initial isolates of *M. tuberculosis* have been collected for isoniazid, rifampicin, ethambutol and streptomycin. In countries where DST results are matched with TB case notifications, DST information is collected as part of the individual data. When this is not possible, or when DRS data are not matched with TB case notifications (e.g. surveys), data are collected as aggregate tables by previous history of anti-TB treatment and by geographic origin (see www.eurotb.org). Information on the organisation of DRS and on laboratory practices for DST is also collected using a standard form. Data from drug resistance surveys published by WHO are also included in this report **[7]**.

Treatment outcome monitoring

Since the reporting year 2002, outcome data are collected for all cases in individual format by resubmission of an updated individual dataset for the year before the last (thus in 2006, outcome data were collected for TB cases notified in 2004). Alternatively, treatment outcome data are reported separately in tabular format (see www.eurotb.org).

6.2 Data analysis and presentation

TB case reporting and mortality

While most countries reported data by November 2006, changes to the national totals of TB notifications shown in this report were allowed until end January 2007 and minor updates to data until 5 March 2007. Notification data were not adjusted for under- or over-reporting. Where relevant, particularly for countries in the EU & West, tables have been stratified by origin (national/foreign). The incomplete geographic coverage of notification data from certain countries has been noted in the report (see also below). For calculation of notification rates, country population denominators by age-group and sex were derived from United Nations statistics **[8].** Population data for Montenegro (for 2005) and Serbia (since 1998) were supplied by the respective national Contact Points.

Mortality data for countries in which reporting completeness or estimated coverage was <80% in the latest available year (as reported by WHOSIS in March 2006) are not shown in Figure 2 but they are included in the Tables (identified in italics) and in the Country Profiles.

[1] By 2006, all countries of the EU & West and the Balkans except Bulgaria, Monaco, Montenegro, San Marino and Spain were reporting individual demographic and clinical data on TB cases to EuroTB, of which 30 countries also included data on drug-susceptibility testing and 24 on outcome. In contrast, no country in the East was reporting in individual format.

TB/HIV surveillance

Information on HIV sero-status of TB cases is incomplete in many countries. HIV prevalence is calculated as the percentage of all TB cases reported known to have a positive test, which may thus result in an under-estimated HIV prevalence. AIDS data for the latest year are presented by year of report. The number of AIDS cases with TB as initial AIDS indicative disease, expressed as a proportion of total TB cases notified in the same year, is used to give a conservative estimate of HIV-associated TB. Time trends in numbers of AIDS-defining TB cases are presented by year of diagnosis adjusted for reporting delays **[9]**.

Drug resistance surveillance

Data on the result of DST for isoniazid, rifampicin, ethambutol and streptomycin at the start of treatment are reported as "susceptible" or "resistant". Proportions of drug-resistant cases are calculated using as a denominator cases with available DST results for at least isoniazid and rifampicin. If 90% of these cases or more had results for ethambutol and streptomycin, DST results for the latter antibiotics are also shown. DRS methodology varies across countries. Initial DST results may be collected routinely for all culture positive TB cases notified, or for cases included in specific surveys or diagnosed in / referred to selected laboratories. Geographic coverage of DRS is partial in some countries. The representativeness of diagnostic DST data depends on the routine use of culture and DST at TB diagnosis. On the basis of differences in geographic coverage and on underlying laboratory practices, DRS data are analysed and presented in two groups:

Group A:

- nationwide data matched to TB case notification in countries using culture routinely (50%+ of cases reported as culture positive in 2005) and DST results for isoniazid and rifampicin are available for the majority of culture positive cases (80%+ in 2005)

or

- data from laboratory networks or surveys using sampling methods considered nationally representative;

Group B:

- data with incomplete or undefined geographic coverage;
- diagnostic DST data from countries where:
  - culture and DST are routinely used but conditions for being in group A above are not met (<50% culture confirmation or <80% culture positive cases with DST results)

    or
  - diagnostic DST results are provided from selected laboratories or areas.

Data in Group A are considered representative of the national situation and comparable across countries, whereas data in Group B are not considered representative.

Time-trends were considered statistically significant if Chi-squared test for linear trend has a P value <0.05.

Treatment outcome monitoring

Treatment outcome data are now collected for all cases in case-based format or in aggregate tables. Cases eligible for outcome analysis (cohorts) are expected to include all definite pulmonary TB cases notified in the calendar year of interest, after exclusion of cases with final diagnosis other than TB as well as cases found to have been reported more than once. In countries reporting individual data, the cohort is defined on the basis of the new dataset updated following initial notification (see above). In countries reporting aggregate outcome data, completeness of cohorts is assessed by comparing the total number of cases included in TOM cohorts with those initially notified as pulmonary culture or smear positive depending on the type of cohort.

On the basis of available information, TOM data are presented in two groups:

- **Group A,** cohorts including at least 90% of definite pulmonary TB cases notified, considered as country-representative and complete
- **Group B,** cohorts including less than 90% of TB cases initially notified, or from selected areas, or for which data for assessing completeness of TOM cohorts were not available. In this report, if the total of Defaulted, Transferred and Unknown exceeds 35% of cases included in the cohort, data are included under Group B.

'DOTS areas' as used in this report refer to units within the country adopting the WHO-recommended strategy to control TB.

Geographic areas

The 53 countries of the WHO European Region have been grouped into geographic areas, based on epidemiological and geo-political features (map on cover page):

- the European Union and West (EU & West): the 27 Member States of the EU in 2007 plus Andorra, Iceland, Israel, Monaco, Norway, San Marino and Switzerland.
- the Balkans: Albania, Bosnia & Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey.
- the East: 12 countries of the former Soviet Union - Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

The respective total populations of the three areas in 2005 were 510, 95 and 278 million.

TB notifications from Greenland and Kosovo in 2005 are footnoted in Table 1 and in the Country Profiles of Denmark and Serbia respectively, but are not included in the totals of the latter countries or of the WHO European Region. Data for the part of Cyprus outside the government-controlled area, for Abkhazia and for Southern Ossetia were not available.
In 2006, Montenegro and Serbia became separate states following the division of the country to which they previously belonged. Bulgaria and Romania joined the EU in 2007 and are included under EU & West in this report. In Table 1, distinction is made between the 15 countries which made up the EU until 2003 and the 12 which joined since 2004.
The template used for maps in this report was adapted from the map of the WHO European Region located at the WHO EURO website (www.euro.who.int).

6.3 Definitions

TB case definition for surveillance

Definite TB case

- in countries where laboratories able to perform culture and identification of *M. tuberculosis* complex are routinely available, a definite case is a patient with culture-confirmed disease due to *M. tuberculosis, M. africanum* or *M. bovis* (excluding *M. bovis* BCG);
- in countries where routine culturing of specimens is not feasible, patients with sputum smear positive for acid-fast bacilli (AFB) are also considered as definite cases.

Other-than-definite TB case

A patient meeting the two following conditions:

- a clinician's judgement that the patient's clinical and/or radiological signs and/or symptoms are compatible with tuberculosis,

and

- a clinician's decision to treat the patient with a full course of anti-tuberculosis treatment.

Previous anti-TB treatment status

Never treated case

A case who never received drug treatment for active TB in the past, or who received anti-TB drugs for less than one month.

Previously treated case (retreated case)

A case who was diagnosed with TB and received treatment with anti-TB drugs (excluding preventive therapy) for at least one month.

Site of disease

Pulmonary case

A case with TB affecting the lung parenchyma, the tracheo-bronchial tree or the larynx.

Extra-pulmonary case

A case with TB affecting any site other than pulmonary (see above). Pleural TB and intra-thoracic lymphatic TB by themselves are considered as extra-pulmonary.

Notes

- The above definitions conform to the European Commission's definitions for tuberculosis surveillance **[4]**. Cases with laryngeal TB are included with pulmonary for surveillance purposes;
- All definite and other-than-definite TB cases notified in the calendar year of interest should be reported to EuroTB and are included in the totals presented in this report. Cases should be notified only once in a given calendar year;
- Never treated cases are commonly referred to as "new" cases although this term should not be considered to indicate "incidence" in the strict epidemiological sense. Among retreated cases, relapses (cases having bacteriologically positive TB who had previously completed treatment for tuberculosis) are included in notifications in all countries whereas cases retreated after failure or after default or chronic cases are variably included in notifications across countries. In countries where information on previous anti-TB treatment is incomplete or not available, information on whether or not TB had been previously diagnosed is used as a proxy (as in Table 12);
- Cases with disseminated tuberculosis (i.e. tuberculosis involving more than two organ systems or the isolation of *M. tuberculosis* complex from blood) are classified as pulmonary if the lung parenchyma, the larynx or the tracheo-bronchial tree are involved, and as extra-pulmonary otherwise. Miliary tuberculosis is included under pulmonary (shown separately from respiratory in analysis of mortality, see Table 32). In individual data, detailed information is collected on the major site and one minor site of disease. A pulmonary localisation when present is always classified as the major site. In contrast to the recommended pulmonary classification, under the respiratory classification pulmonary cases as well as cases with pleural and intra-thoracic lymphatic TB are classified as 'respiratory' cases, and cases with another localisation as 'extra-respiratory'.

Geographic origin

The geographic origin of TB cases is classified according to place of birth (born in the country / foreign born) or, if unavailable, citizenship (citizen / non citizen). In Denmark, the place of birth of the parents is also used in classifying origin (similarly in the Netherlands for time-trend data shown in Table 6 and in the Country Profile). The country or continent of origin is included in individual data. The term "national" as used in this report refers to cases born in, or having citizenship of, the country of report.

Drug resistance

Resistance among cases never treated: it indicates primary drug resistance due to infection with resistant bacilli.

Resistance among cases previously treated: this *usually* indicates acquired drug resistance emerging during treatment as a consequence of selection of drug-resistant mutant bacilli. It can also result from exogenous re-infection with resistant bacilli.

Combined resistance: overall resistance in the population regardless of prior treatment **[7]**.

Multi-drug resistance (MDR): resistance to at least isoniazid and rifampicin.

Extensive drug resistance (XDR): resistance to (1) at least isoniazid and rifampicin (i.e. MDR) and (2) resistance to a fluoroquinolone and (3) resistance to one or more of the following injectable drugs: amikacin, capreomycin, or kanamycin **[10]**.

Treatment outcome

Cohort

TB cases notified in the calendar year of interest, after exclusion of cases with final diagnosis other than TB or cases found to have been reported more than once.

Notes:

1) since 2002 cohorts, individual outcome data have been collected for all TB cases;

2) up to 2003 cohorts, only aggregate data on definite pulmonary cases were collected. Since 2004 cohorts, aggregate data are also collected for all types of extra-pulmonary and retreated cases.

Period of observation

Cases are observed until meeting the first outcome, for a maximum of 12 months after the start of treatment.

Outcome categories

Since 2001 cohorts, outcome categories are those internationally recommended - with two additional categories "still on treatment at 12 months", and "unknown" **[3, 11]**

Cured: Treatment completion and:

- culture becoming negative on samples taken at the end of treatment and on at least one previous occasion

or

- in countries where sputum smear positive cases are classified as definite cases sputum microscopy becoming negative for AFB at the end of treatment and on at least one previous occasion.

Completed: Treatment completion and does not meet the criteria to be classified as cure or treatment failure

Failed: Culture or sputum smear remaining positive or becoming positive again 5 months or later into the course of treatment.

Died: Death before cure or treatment completion irrespective of cause.

Defaulted: Treatment interrupted for 2 months or more, not resulting from a decision of the care provider or patient lost to follow-up for 2 months or more before the end of treatment, except transferred.

Transferred: Patient referral to another clinical unit for treatment and information on outcome not available

Still on treatment: Patient still on treatment at 12 months and who did not meet any other outcome during treatment. It includes patients with:

- initial treatment changed due to polyresistance (i.e. resistance to at least two first line drugs) on the isolate taken at the start of treatment.
- treatment prolonged because of side effects / complications, initial regimen planned for > 12 months
- information on the reasons for being still on treatment not available

Unknown: Information on outcome not available, for cases not known to have been transferred

In this report:

- "Success" refers to the combined ratios of cured and completed
- "Loss to follow up" is the combination of defaulted, transferred and unknown.

6.4 References

1. Rieder H, Watson J, Raviglione M, et al. Surveillance of tuberculosis in Europe. Recommendations of a Working Group of the World Health Organization (WHO) and the European Region of the International Union Against Tuberculosis and Lung Disease (IUATLD) for uniform reporting on tuberculosis cases. Eur Respir J 1996; 9:1097-1104.

2. Schwoebel V, Lambregts-van Weezenbeeck CSB, Moro ML, et al. Standardisation of antituberculosis drug resistance surveillance in Europe. Recommendations of a World Health Organization (WHO) and International Union Against Tuberculosis and Lung Disease (IUATLD) Working Group. Eur Respir J 2000; 16: 364-371.

3. Veen J, Raviglione M., Rieder HL, et al. Standardised tuberculosis treatment outcome in Europe. Eur Respir J 1998; 12: 505-510.

4. 2002/253/EC. COMMISSION DECISION (19 March 2002) laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council.

5. WHO Statistical Information System (WHOSIS). WHO Mortality Database. Update 17 November 2006 (www3.who.int/whosis/). Last accessed 18 February 2007.

6. EuroHIV and the national coordinators for tuberculosis surveillance in the WHO European Region. European Non-Aggregate AIDS Data Set (ENAADS). EuroHIV, Institut de veille sanitaire, Saint-Maurice, France. Update December 2005 (accessed December 2006).

7. World Health Organization. Anti-tuberculosis Drug Resistance in the World. 3rd global report. WHO, Geneva, Switzerland 2004. WHO/HTM/TB/2004.343.

8. United Nations Population Division. Annual Populations 1950-2050 (The 2004 Revision), United Nations, New York, 2005.

9. EuroHIV. HIV/AIDS Surveillance in Europe. End-year report 2005. Saint-Maurice, France: Institut de veille sanitaire, 2006. No 73.

10. World Health Organization. Case definition for extensively drug-resistant tuberculosis. Weekly Epidemiol Rec 2006 Oct 20;81(42):408. (www.who.int/wer/2006/wer8142.pdf)

11. Falzon D, Scholten J, Infuso A. Tubeculosis outcome monitoring - is it time to update European recommendations? Eurosurveillance 2006; 11 (3):20-5.

Surveillance

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