



## **SURVEILLANCE** REPORT



# Tuberculosis surveillance in Europe

# 2007

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# Abbreviations

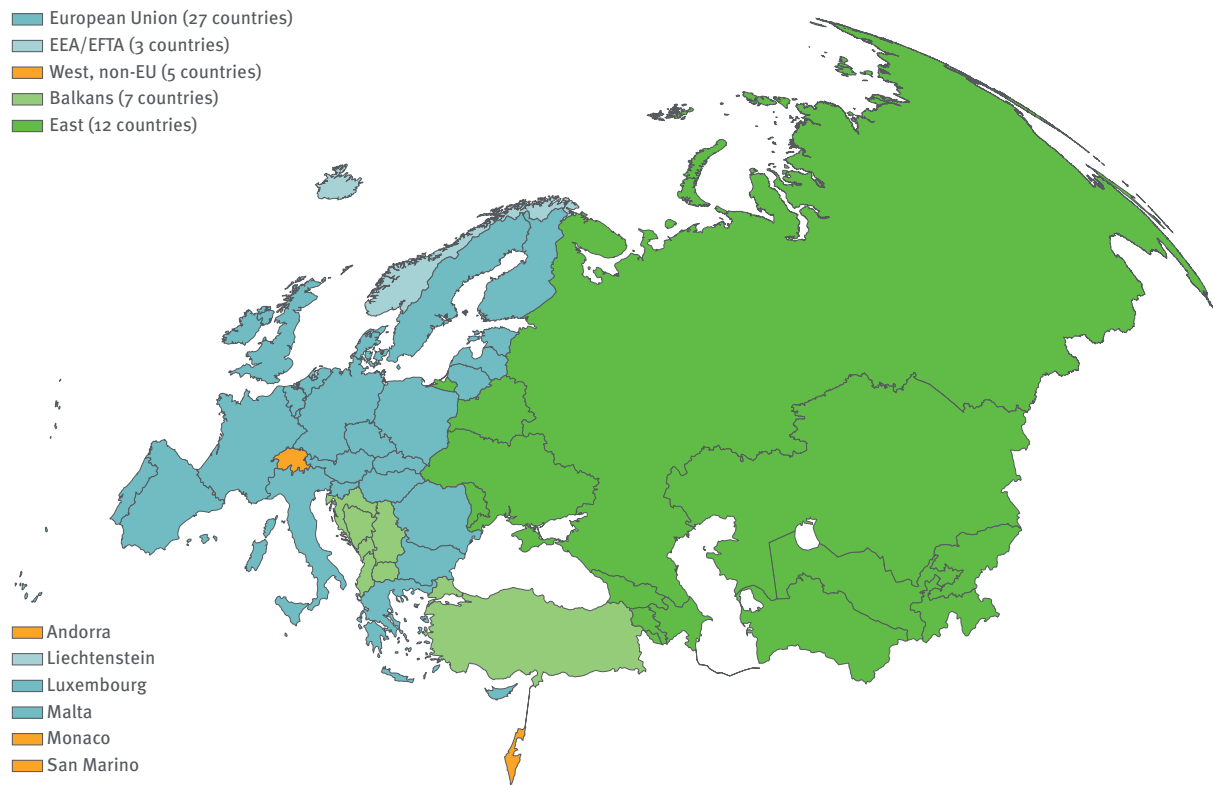
<b>AIDS</b>	Acquired immunodeficiency syndrome
<b>DOTS</b>	The internationally recommended strategy for the control of tuberculosis
<b>DRS</b>	Drug resistance surveillance
<b>DST</b>	Drug sensitivity testing
<b>ECDC</b>	European Centre for Disease Prevention and Control
<b>EFTA</b>	European Free Trade Association
<b>EEA</b>	European Economic Area
<b>EQA</b>	External quality assessment
<b>EU</b>	European Union
<b>F</b>	Female
<b>HIV</b>	Human immunodeficiency virus
<b>MDR TB</b>	Multidrug-resistant tuberculosis
<b>M</b>	Male
<b>TB</b>	Tuberculosis
<b>TESSy</b>	The European Surveillance System
<b>TOM</b>	Treatment outcome monitoring
<b>WHO</b>	World Health Organization
<b>WHOSIS</b>	World Health Organization Statistical Information System
<b>XDR TB</b>	Extensively drug-resistant tuberculosis





# 1. Summary

**Map: Tuberculosis surveillance in Europe 2007<sup>a</sup>**



<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

## Summary

Since 1st January 2008, the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe jointly coordinate the tuberculosis (TB) surveillance in Europe. Their aim is to ensure a high quality of TB standardised data covering all 53 countries in the WHO European Region.

In 2007, 477 327 cases of TB were reported by the 51<sup>1</sup> countries of the WHO European Region plus Liechtenstein<sup>2</sup>. The overall notification rate averaged 54 cases per 100 000, with a wide variability between countries and an incremental west-to-east gradient evident in recent years. This represents an increase of 54 497 cases from 2006 and an overall notification rate increase of 13% (from 48/100 000 to 54/100 000), mainly attributable to the registration by the Russian Federation of previously unreported re-treated cases, following the expansion of its notification system coverage and improved patient access to care. The notification rate of previously untreated cases in the entire Region decreased by 2.5% (from 36.6 to 35.7 per 100 000). In general, TB mortality rates in recent years mirrored overall notification rates in their geographical distribution across the Region (median overall rate: 0.6/100 000, country range: 0.0–22.3). The median level of primary MDR TB was 1.5% in the 22 countries reporting MDR TB data. The average treatment success rate was 73%, with 11% of cases lost to follow-up, 8% death and 7% failures of treatment.

### European Union (EU) and European Economic Area (EEA)/European Free Trade Association (EFTA) countries (30 countries)

The 27 countries of the EU and three EEA/EFTA countries (Iceland, Norway and Liechtenstein), reported 84 917 TB cases in 2007. TB notification rates (17/100 000 overall) were highest in Romania (118), Bulgaria (40) and in the Baltic States (36–71). Between 2003 and 2007, overall notification rates decreased by 4% annually, reflecting a decline in previously untreated TB cases. However, substantial increases were observed in Malta (+61%) and Iceland (+37%), some increase in Sweden (+5%), and in the United Kingdom and Cyprus (both +3%), mostly in foreign origin cases. In 2007, 21% of cases (country range: 0–78%) were in persons of foreign origin, almost two-thirds of whom were from Asia or Africa and 6% from non-EU eastern European and central Asian countries. HIV prevalence among TB cases increased between 2001 and 2007 in Estonia and Latvia (from < 1% to 11% and 4%, respectively) and doubled in the United Kingdom in 2000–2003 (from 4% to 8%). In the rest of the countries that submitted data, the HIV prevalence among TB cases was 1% or less in five countries, 2–5% in seven

others, and 14% in Portugal. Multidrug resistance (MDR) remained more frequent in the Baltic States (combined MDR: 10–21%) than in the other countries (0–4%), where it was generally more common in cases of foreign origin. Twenty-one countries reported treatment outcome monitoring (TOM) data for definite pulmonary TB cases in 2006. For the cases included in the TOM cohorts, among previously untreated cases, 80% had a successful outcome. Loss to follow-up was more frequent among pulmonary cases in persons of foreign origin than among nationals (35% vs. 16%, respectively), while death was less frequently reported (8% vs. 4%). TB mortality rates ranged from 0.0–10.9/100 000 (29 countries, latest available data 2001–2006).

### West (non-EU) (5 countries)

In 2007, 881 TB cases were reported by three countries – Andorra, Israel and Switzerland – with rates ranging from 5.6 to 7.3/100 000. Rates were generally low and the majority of notified TB cases were of foreign origin. Data on drug resistance surveillance were reported by Switzerland and Israel, with their MDR TB prevalence for all tested cases at 2.3% and 6.7%, respectively. Treatment outcomes for cases registered in 2006 were reported by Israel, with a success rate of 74% for new definite pulmonary cases.

### Balkans (7 countries)

The Balkan countries notified 26 296 cases in 2007, of which 75% were reported by Turkey alone (an additional 930 cases were reported by the UN Administered Province of Kosovo). The overall TB notification rate in 2007 was 29/100 000, and was higher in Bosnia and Herzegovina (62) than in Albania, Croatia, The former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey (range: 14–28). The HIV prevalence among TB cases was 0.0–0.4% in the countries with data (Albania, Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia, Montenegro, and Serbia). Combined primary and acquired MDR was between 0% to 0.6% and 9.7% to 34.6%, respectively, in the four countries with MDR data reported (Albania, Montenegro, The former Yugoslav Republic of Macedonia, Serbia). The success rate among new definite pulmonary cases in 2006 was 80–97% in five countries, and lower in two others providing data (35–70%). TB mortality rates ranged between 0.25 and 21/100 000 (five countries, latest available complete data 2001–2006).

### East (12 non-EU eastern European and central Asian countries)

In 2007, 365 233 TB cases were reported in the East, 59% of them by the Russian Federation. TB notification rates in 2007 (131/100 000 overall) were highest in Kazakhstan (258), the Republic of Moldova (178), the Russian

<sup>1</sup> No data from Monaco and San Marino.

<sup>2</sup> Liechtenstein is included in the report, but is only presented as EEA/EFTA country – it does not belong to WHO European Region.

Federation (151), Georgia (135), and Kyrgyzstan (125), followed by Armenia, Azerbaijan, Belarus, Tajikistan, Turkmenistan, Ukraine and Uzbekistan (59–119). The mean annual increase between 2002 and 2007 was the same as observed over the years 1998–2002 (+6%). The number of new cases decreased between 2006 and 2007 in six countries. The HIV prevalence among TB cases was 1% or lower in five countries in recent years, but was higher in the Russian Federation and Ukraine (7% and 6%, respectively, among new cases in 2007). National and regional drug resistance data from a number of countries suggest a widespread, high prevalence of MDR. Combined MDR TB prevalence ranged from 14% to 57%, although the representativeness of the data varied among countries. In countries reporting outcomes of new smear-positive pulmonary TB cases (2006), the average success rate was 64% (range: 58–86%). Low success, associated with high failures (mean: 12%, range: 3–16%) were mainly due to the prevalence of primary MDR and loss to follow-up (mean: 13%, range: 4–35%). TB mortality rates ranged from 3.0 to 22.3/100 000 (all countries, except Turkmenistan, with complete data, latest available for any year between 2003 and 2006).

## Conclusions

The non-EU eastern European and central Asian countries remain the regional priority for TB control. In these countries the situation is often complicated by low specificity or poor quality of information and persistent lack of resources necessary to mount a best-suited response and/or inadequate use of existing ones. Further west, a diversity of TB patterns persists. Industrialised countries aiming at TB elimination are increasingly recognising the aggregation of cases among particular vulnerable populations. Among intermediate burden countries, such as the Baltic States, prevalence of MDR TB remains high. A number of surveillance recommendations in support of strengthening TB control can be drawn from the analysis of the data including:

- standardising the case definition used throughout the Region and the tools for data management;
- integrating TB into overall communicable disease surveillance;
- emphasising the use of cohort analysis for treatment outcome monitoring;
- developing a better insight into the TB/HIV co-epidemic; and
- conducting careful assessments of prevalence and trends of MDR TB at country and regional level.

## Резюме

С 1 января 2008 года Европейский центр по профилактике и контролю заболеваний (ECDC) и Европейское региональное бюро ВОЗ совместно координируют эпидемиологический надзор за туберкулезом (ТБ) в Европе. Цель надзора состоит в том, чтобы обеспечить высокое качество стандартизированных данных о распространении ТБ во всех 53 странах Европейского региона ВОЗ.

В 2007 г. в 51<sup>3</sup> стране Европейского региона ВОЗ и в Лихтенштейне<sup>4</sup> было зарегистрировано 477 327 случаев ТБ. Показатель общей регистрации составил в среднем 54 случая на 100 000 населения с большими различиями между странами и с тенденцией роста в направлении с запада на восток, которая становится все более очевидной в последние годы. Это нашло отражение в увеличении числа случаев на 54 497, начиная с 2006 г., и повышении показателя общей регистрации в целом на 13% (с 48 до 54 на 100 000), главным образом в связи с тем, что Российская Федерация стала регистрировать ранее не учитываемые случаи повторного лечения в результате повышения охвата системой регистрации и улучшения доступа пациентов к услугам противотуберкулезной помощи. Показатель регистрации новых случаев в целом по Региону снизился на 2,5% (с 36,6 до 35,7 на 100 000). Показатели смертности от ТБ за последние годы в целом отражают показатель общей регистрации ТБ с учетом географического распределения в масштабах Региона (медиана: 0,6 на 100 000, с пределами вариации между странами: 0,0–22,3). Распространенность множественной лекарственной устойчивости среди новых случаев туберкулеза в целом по Региону составило 1,5%. В среднем показатель успешного лечения достиг 73%, 11% прерванного лечения, 8% и 7% умерших и неудачами в лечении соответственно.

### Страны Европейского союза (ЕС) и Европейской экономической зоны (ЕЭЗ)/ Европейской ассоциации свободной торговли (ЕАСТ) (30 стран)

В 2007 г. в 27 странах ЕС и трех странах ЕЭЗ/ЕАСТ (Исландия, Норвегия и Лихтенштейн) всего зарегистрировано 84 917 случаев ТБ. Показатели общей регистрации случаев ТБ (в среднем 17 на 100 000) были самыми высокими в Румынии (118), Болгарии (40) и в странах Балтии (36–71). Между 2003 и 2007 гг. показатель общей регистрации снижался в среднем на 4% ежегодно, отражая уменьшение числа новых случаев ТБ. Однако значительное повышение наблюдалось

в Мальте (+61%) и в Исландии (+37); некоторый рост отмечен в Швеции (+5%), а также в Соединенном Королевстве и на Кипре (в обеих странах +3%), главным образом случаев иностранного происхождения. В 2007 г. 21% случаев (с пределами вариации между странами: 0–78%) зарегистрирован среди лиц иностранного происхождения, почти две трети из которых были выходцами из Азии или Африки, и 6% – из стран бывшего СССР. Распространенность ВИЧ-инфекции среди больных ТБ увеличилась за период между 2001 и 2007 гг. в Эстонии и Латвии (с < 1% до 11% и 4%, соответственно) и удвоилась в Соединенном Королевстве в период 2000–2003 гг. (с 4% до 8%). В остальных странах, представивших данные, распространенность ВИЧ-инфекции среди больных ТБ составила 1% или менее в пяти странах, 2–5% в семи других и 14% в Португалии. Множественная лекарственная устойчивость (МЛУ-ТБ) по-прежнему чаще регистрировалась в странах Балтии (комбинированная распространенность МЛУ-ТБ: 10–21%), чем в других странах (0–4%), где она в основном наблюдалась у лиц иностранного происхождения. Двадцать одна страна сообщила данные по исходам лечения установленных случаев легочного ТБ в 2006 г. Для всех случаев, включенных в когорту 2006 года, общий показатель успешного лечения составил 80% среди новых случаев. Досрочное прерывание лечения чаще регистрировалось среди лиц иностранного происхождения, чем среди коренных жителей (35% по сравнению с 16%, соответственно), хотя случаи смерти регистрировались реже (3% по сравнению с 8%). Показатели смертности от ТБ колебались в пределах 0,0–10,9 на 100 000 (29 стран, последние доступные данные за 2001–2006 гг.)

### Запад (5 стран, не входящих в ЕС)

В 2007 г. три страны – Андорра, Израиль и Швейцария – сообщили о 881 случае ТБ (пределы вариации – 5,6–7,3 на 100 000). В целом показатели были низкие, и большинство случаев ТБ были иностранного происхождения. Швейцария и Израиль предоставили данные эпиднадзора в отношении лекарственной устойчивости: распространенность МЛУ-ТБ среди всех случаев, прошедших тестирование, составила соответственно 2,3% и 6,7%. Израиль сообщил об исходах лечения случаев, зарегистрированных в 2006 г.: успех был достигнут в 74% вновь выявленных случаев легочного ТБ.

<sup>3</sup> Нет данных из Монако и Сан-Марино.

<sup>4</sup> Лихтенштейн включен в отчет, но только как страна ЕЭЗ/ЕАСТ (не входит в Европейский регион ВОЗ).

### Балканы<sup>5</sup> (7 стран)

Балканские страны сообщили о 26 296 случаях ТБ в 2007 г., из которых 75% зарегистрировано в Турции (в дополнение к этому 930 случаев было зарегистрировано в Косово). В целом показатель общей регистрации в 2007 г. составил 29 случаев ТБ на 100 000 и был выше в Боснии и Герцеговине (62), чем в Албании, бывшей югославской Республике Македонии, Сербии, Турции, Хорватии и Черногории (14–28). Распространенность ВИЧ-инфекции среди больных ТБ колебалась в пределах 0,0–0,4% в странах, предоставивших данные (Албания, Босния и Герцеговина, бывшая югославская Республика Македония, Сербия, Черногория). Комбинированная распространенность (первичной и приобретенной форм) МЛУ-ТБ составила, соответственно, 0–0,6% и 9,7–34,6% в четырех странах, предоставивших данные по МЛУ-ТБ (Албания, бывшая югославская Республика Македония, Сербия, Черногория). Эффективность лечения вновь выявленных случаев легочного ТБ в 2006 г. составила 80–97% в пяти странах и несколько ниже (35–70%) в двух других из предоставивших данные. Показатели смертности от ТБ колебались от 0,25 до 21 на 100 000 (пять стран, последние доступные полные данные за 2001–2006 гг.).

### Восток (12 стран бывшего СССР)

В 2007 г. в данной группе стран было зарегистрировано 365 233 случая ТБ, из них 59% – в Российской Федерации. Значения показателя общей регистрации случаев ТБ в 2007 г. (в целом 131 на 100 000) были наиболее высокими в Казахстане (258), Республике Молдова (178), Российской Федерации (151), Грузии (135) и Кыргызстане (125); за ними следовали Азербайджан, Армения, Беларусь, Таджикистан, Туркменистан, Узбекистан и Украина (59–119). Среднегодовое увеличение между 2002 и 2007 гг. было таким же, как в 1998–2002 гг. (+6%). Число новых случаев уменьшилось между 2006 и 2007 гг. в шести странах. Распространенность ВИЧ-инфекции среди больных ТБ составила в последние годы до 1% в пяти странах, но была выше в Российской Федерации и Украине (7% и 6%, соответственно, среди новых случаев в 2007 г.). Национальные и субнациональные данные о лекарственной устойчивости, полученные из ряда стран, свидетельствуют о широкой распространенности МЛУ-ТБ. Комбинированная распространенность МЛУ-ТБ составляла от 14% до 57%, хотя репрезентативность данных отличалась по странам. В странах, сообщивших об исходах лечения новых случаев легочного ТБ в 2006 г. (подтвержденных исследованием мокроты), средний показатель успешного лечения составил 64% (58–86%). Низкий показатель успешности лечения (в среднем: 12%, с

колебанием: 3–16%) был связан в основном с распространенностью первичного МЛУ-ТБ и отрывами пациентов от лечения (в среднем: 13%, с колебанием: 4–35%). Показатель смертности от ТБ варьировал от 3,0 до 22,3 на 100 000 (все страны, за исключением Туркменистана, предоставили полные данные, последние из доступных по каждому году с 2003 г. по 2006 г.).

### Выводы

Страны бывшего СССР остаются региональным приоритетом по борьбе с ТБ. В этих странах ситуация часто усложняется низкой специфичностью и качеством информации, а также систематическим дефицитом ресурсов, необходимых для достижения наилучшего эффекта борьбы с ТБ, и/или нерациональным использованием средств, имеющихся в наличии. Далее к западу, разнообразие определяющих факторов для распространения и борьбы с ТБ остается прежним. В промышленно развитых странах, направляющих свои усилия на искоренение ТБ, все чаще отмечается концентрация случаев в определенных уязвимых группах населения. Среди стран с промежуточным уровнем бремени ТБ, таких как страны Балтии, распространенность МЛУ-ТБ по-прежнему остается высокой. Анализ представленных данных позволяет дать ряд рекомендаций по эпиднадзору, необходимых для усиления борьбы с ТБ:

- стандартизация определений при ведении случаев ТБ, для использования в масштабах всего Региона, а также инструментов управления данными;
- интеграция надзора за ТБ в общую систему эпиднадзора за инфекционными болезнями;
- особый упор на использовании когортного анализа для мониторинга и оценки исходов лечения;
- углубление знаний и представлений об эпидемиологии сочетанной инфекции ТБ/ВИЧ;
- проведение тщательной оценки распространенности и тенденций развития МЛУ-ТБ на национальном и субнациональном уровнях.

<sup>5</sup> В данном отчете, как и в предыдущих годовых отчетах по туберкулезу, использовано географическое определение “Балканы”, в отношении семи стран Юго-Восточной Европы, не входящих в состав Европейского Союза. Данное определение ни в коем случае не отражает какое-либо мнение секретариата Всемирной Организации Здравоохранения в отношении юридического статуса какой-либо страны, территории, города или части, области, или руководящих органов, или в отношении делимитации границ, территориальных образований.

## 2. Commentary





## 2. Commentary

In 2007, 477 327 (rate 54/100 000) tuberculosis (TB) cases were reported by 51<sup>6</sup> of the 53 countries of the WHO European Region (Tables 1, 2), representing 5% of TB cases reported to WHO worldwide in the same year [1]. This represents an increase of 54 497 cases from 2006 and an overall notification rate increase of 13% (from 48/100 000 to 54/100 000), mainly attributable to the registration by the Russian Federation of re-treated cases not registered in previous years. In fact, if only the notification rate of previously untreated cases is taken into account, a decrease of 2.5% is observed between 2006 and 2007 (from 36.6 to 35.7 per 100 000). Seventy-seven percent of all TB notifications in the Region were reported from the East; 17% from the European Union, EEA/EFTA and West (non-EU); and 6% from the remaining countries in the Balkans (Map 1).

The TB overall case notification rate increased progressively when moving from West to East, mirroring also the geographical gradient in TB notified mortality rates (Maps 2, 3 and Figure 1).

Males are predominant among TB cases in nearly all European countries (overall M:F ratio 2.4:1). Pulmonary TB was reported in 88% of European cases and 12% had exclusively extrapulmonary disease. The sputum smear-positive rate was 20.8 cases per 100 000 region-wide, with levels of almost 50 cases per 100 000 in the 12 non-EU eastern European and central Asian countries. Overall, only 35% of the TB cases reported in 2007 were culture-confirmed (45% in EU and EEA/EFTA and western non-EU countries and 32% in the 12 non-EU eastern European and central Asian countries).

The overall treatment success rate at the regional level among new cases was 73%. This low success rate is explained by a combination of a high level of loss to follow-up (11%), failures (7%) and death (8%). Levels of primary MDR TB are extremely variable with a region-wide median of 1.5% of all TB cases.

### 2.1 European Union (EU) and European Economic Area (EEA)/European Free Trade Association (EFTA) countries

#### TB case notification

In 2007, 84 917 TB cases were reported by the 27 EU and the EFTA/EEA countries of Iceland, Norway and Liechtenstein (Table 2), representing a decrease of 3 196 cases (-4%) from 2006. Over two-thirds of cases occurred in the six countries that reported more than

5 000 cases each (France, Germany, Poland, Romania, Spain, and United Kingdom).

The overall notification rate was 17/100 000, with rates lower than 10/100 000 reported in 15 countries and higher than 20/100 000 in Romania (118), the Baltic States — Lithuania (71), Latvia (55), Estonia (36) — Bulgaria (40), and Portugal (30). The overall notification rate was 15% lower than that in 2003, reflecting a net downward trend in 25 countries. Overall, the average annual decrease in rates between 2003 and 2007 was larger than that observed between 1998 and 2002 (mean -4.0% vs. -1.3%, respectively).

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: 2.0 in nationals vs. 1.4 in foreign cases, Table 3). This difference remains significant even when excluding Romania (not reporting foreign-born TB cases). Total M:F ratios were generally lower in countries with < 10 cases/100 000 than in those with > 25/100 000 (median: 1.6 vs. 2.2, respectively).

Nearly all countries experienced a decline or stabilisation at low levels in paediatric (under 15 years) notification rates in recent years, suggesting a decrease or low levels of transmission in the general population (see Country Profiles). In Bulgaria, Latvia, Lithuania and Romania, however, rates in children are high (16–30/100 000) and have increased in Bulgaria over the past three years (from 17 to 19/100 000). Increases in paediatric notifications have been recorded also in Sweden and in the United Kingdom, where the increase was largely restricted to disease in foreign-born cases.

Paediatric cases represented 4% of notifications, in both cases of national and foreign origin (Tables 4, 5). In contrast, the middle-aged (45–64 years) and the elderly (> 64 years) together represented more than half of the cases of national origin (natives) but only 28% of foreign cases. Most cases of foreign origin were reported among younger adults, especially in the 25–44 year age group (53%).

In 2007, 21% of reported TB cases were of foreign origin. This proportion was higher when excluding data from Bulgaria and Romania (31%), and it ranged from 26% to 79% in 17 countries (Map 4). Overall, 27 countries reported area of origin of TB cases: 32% of foreign cases originated from Asia; 26% from Africa; 10% from other countries of the EU/EEA/EFTA and West (non-EU); 5% from the Balkans; and 6% from non-EU eastern European and central Asian countries (Table 6). Between 2001 and 2007, notifications among nationals decreased in nearly all countries but cases of foreign origin increased up to 2005 and decreased in 2006 and 2007 (Table 7, Figure 2).

<sup>6</sup> No data from Monaco and San Marino. Liechtenstein is included in the report, but is only presented as EEA/EFTA country — it does not belong to WHO European Region.

A drop in foreign cases was observed in Germany and Italy between 2006 and 2007, after an increase in previous years, while a steadier decline occurred since at least 2003 in the Netherlands and Portugal. Cases in foreigners increased progressively and substantially in the United Kingdom since at least 2003.

Pulmonary TB was reported in 80% of cases and 20% had exclusively extrapulmonary disease (Table 8). The proportion of pulmonary TB has stabilised in the United Kingdom (Table 9), concurrent with recent increases in imported TB cases. In Italy, the proportion of native and foreign-born cases with pulmonary TB decreased, as well as the absolute number of pulmonary cases among natives. Severe forms of extrapulmonary TB accounted for only 1% of all TB cases reported (range: 0–6% in 19 countries with data (Table 10).

Over the period 2003–2007, the rate of TB meningitis in children under five years of age remained < 1.0/10 million of the general population in most of these countries (Table 11). Rates > 1.0 for two consecutive years or more were reported by Austria (total TB case rates 10.5/100 000 in 2007), as well as Lithuania, and Romania (total TB rates > 30).

Sputum smear-positive rates were lower than 5 cases /100 000 in 21 countries in the last three years (Table 12). These rates were consistently higher than 10.0 in the Baltic States, Portugal and Romania. Where rates were < 2 cases /100 000, a proportion of pulmonary cases with a positive sputum smear < 40% suggests underreporting. Sputum smear-positive rates increased in Greece (39–54%) in 2005–2007, in parallel with the proportion of pulmonary TB cases reported as sputum smear-positive, and decreased slightly in Finland (51–44%).

In 2007, 79% of the reported cases had not previously received anti-TB treatment, with wide variation between countries (Table 13, Map 5). This proportion has not changed markedly in the past years, but the total number of new cases has decreased progressively and is probably the main reason for the decline of TB in the EU, EEA/EFTA countries (Figure 1). Wide fluctuations in the proportion of previously treated cases may be the result of changes in definition or in patient access to services (e.g. Estonia, Romania).

Forty-five percent of cases reported in 2007 were culture-confirmed, but the level differed widely across countries (range: 16–100%, Table 14, Map 6). The overall proportion declined from 56% to 45% from 2004 to 2007, but has remained quite steady over the last two years, except for Romania, where the proportion of culture confirmation has continued to decline from 2006 to 2007 (20% to 16%). A substantial improvement in culture confirmation has occurred in Cyprus, France and Poland. It has remained high — 75% or more — in Belgium, Estonia, Slovenia and Norway. Species identification showed *M. tuberculosis* in 74% of culture-positive cases in 2007 (27 countries, Table 15). *M. bovis* (0.3%) was reported by 12 countries and *M. africanum* (0.2%) by

nine countries. Data on the other members of *M. tuberculosis* complex were not analysed for 2007.

European case definitions for reporting communicable diseases were revised and published for the first time in the previous report for cases notified in 2006. This time, in 26 countries reporting individual data, most or all of the cases satisfied the clinical criteria in terms of the revised European TB case definition<sup>7</sup> (Table 16). Post-mortem diagnosis of TB was reported in 0.1–5% of cases from 16 countries. The highest rates were reported by the Czech Republic and Austria.

### Tuberculosis and HIV infection

Aggregated data on HIV serostatus of TB cases reported in 2004 or later were available for 19 countries (Table 17). The completeness of information varied widely due to differences in testing policies and in data collection (only HIV-positive results were reported in some countries). The proportion of TB cases with positive HIV serostatus (for the latest available year 2004–2007) was highest in Iceland (15% cases in 2006), Portugal (14%) and Estonia (11%), and it was 3–7% in six countries and 0–2% in 11 countries. This proportion increased since 2001 in Estonia (from 0.1% to 11.1%) and Latvia (from 0.7% to 4.4%), both countries which experienced a sharp increase in HIV infection in the early years of this decade [3].

TB was the initial AIDS-indicative disease in 991 (25%) of 3957 AIDS cases reported in 2007 (26 countries, Table 18). No data on AIDS-indicative TB were available for Liechtenstein, the Netherlands, Norway and Italy. AIDS cases with TB as the initial AIDS-indicative disease represented 1.3% of all TB cases notified in 2007, but those countries with the highest estimated HIV prevalence among adults, had higher proportions — Estonia (6%) and Portugal (4%). Annual numbers of AIDS cases with TB as initial AIDS-indicative disease decreased by about 57% overall between 2001 and 2007 (26 countries with data, Table 19).

### Anti-tuberculosis drug resistance

Data on anti-TB drug resistance surveillance (DRS) in 2007 were made available by 28 countries (Table 20).

Of the 21 countries that had more than one laboratory performing drug susceptibility testing (DST), national external quality assurance schemes existed in 13 (Table 21). Apart from Cyprus, Malta, and Iceland, all national reference laboratories (NRL) had participated in international quality assurance for DST since 2006. Reported concordance with supranational laboratories was 100% for both isoniazid and rifampicin in 18 countries, and 89–99% for one or both drugs in five countries.

<sup>7</sup> 2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC 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 (notified under document number C(2008) 1589)

Data from 22 countries performing culture and DST routinely in 2007, or providing DST results as part of a national case-linked dataset, were considered to be representative (Table 22). Nationwide aggregated data from France were included with this group. DST data from another seven countries were considered non-representative. These countries reported DST results in case-based format but the use of culture and/or DST was not routine or results incomplete.

Overall, the proportion of cases with MDR TB (combined MDR TB) in the 22 countries was 4.0%.

Cases resistant to one or more first-line anti-TB drugs were reported by all countries. The Baltic States, Bulgaria, Germany, Spain, Romania and the United Kingdom had 50 or more multidrug resistant (MDR) cases (Table 23). The proportion of new cases with MDR ranged from 0–17% (Table 24, Map 7), but was higher in the Baltic States (7–17%) and in Malta (6%, but one case). Drug resistance was commonly higher in cases of foreign origin compared to nationals (Tables 25, 26, Country Profiles).

The proportion of combined MDR cases is high and stable in the Baltic States. It decreased in Latvia (2004–2007) but these trends remained not significant for primary MDR cases. This suggests that re-treated cases are decreasing faster than incident ones in these countries.

### Treatment outcome

Twenty-one countries reported treatment outcome monitoring (TOM) data for definite pulmonary TB cases reported in 2006 (Table 28). However, the TOM for these countries suggests sub-optimal coverage. Overall, out of a total of 40 959 culture-confirmed pulmonary cases reported in 2006 (updated for 2007 report), 92% (37 646) reported a treatment outcome.

For the cases reported in the TOM cohorts, among previously untreated cases (Table 29), 80% had a successful outcome, 7% died, 2% failed, 2% continued treatment beyond 12 months, and 9% were lost to follow-up (defaulted, transferred or no known outcome). Among countries with more than 20 new cases, success rates varied widely from 50% in Hungary to 87% in Portugal and Slovakia. Five countries achieved 85% success or more. Success rates < 75% were associated with a high loss to follow-up (10–26%). In Estonia and Lithuania, this was also associated with protracted treatment necessary for their larger case-load of drug-resistant cases. A reduction in cases lost to follow-up has led to improvements in success rate over time, particularly in countries like Portugal and Romania (Figure 3, Country Profiles).

Among previously treated cases (Table 30), the overall success rate was lower than among new cases (54%; range: 38–78%). Death (11%) or failure or still on treatment (8%) were more frequently reported in this group 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 (19%) also lowered success rate.

In the 20 countries reporting comprehensive case-linked data, success was marginally higher in nationals than in cases of foreign origin (72% vs. 59%, Table 31), but mortality numbers are higher in nationals (8% vs. 4%) due mainly to the older age of TB cases of national origin. In contrast, nationals were less likely to be lost to follow-up (16% vs. 35%). Cases with pulmonary TB were less likely to have a successful treatment and more likely to die than extrapulmonary cases (75% and 8% vs. 82% and 4%, respectively, Table 32)

## 2.2 West (non-EU)

### TB case notification

In 2007, 881 cases of TB were reported by three out of five countries from this group (Table 2). Monaco and San Marino did not report any cases. The majority of cases was reported by Switzerland and Israel (99% of total). The overall TB notification rate was 6/100 000. Between 2003 and 2007, rates have decreased by 8% annually.

The majority of reported TB cases were of foreign origin (85% in Israel and 55% in Switzerland) (Table 3). Male notification rates were slightly higher than female (M:F ratio 1.2). Paediatric cases represented 8% of reported cases in 2007 (Table 4).

Pulmonary cases represented 84% of notifications (range: 50–88%, Tables 8, 9). More than one third of the pulmonary TB cases were smear positive, with an overall rate of smear-positive TB cases of 8/100 000 population (Table 12).

13% of cases reported in 2007 had been previously treated (range: 3–17%, Table 13). The proportion of cases confirmed by culture has been reported to be constantly high (Table 14). According to the EU case classification, 62% of cases could be classified as confirmed, 18% probable, 22% possible and 14% confirmed only by laboratory (Table 16).

### Tuberculosis and HIV infection

HIV seroprevalence among TB cases was reported by two countries from the West (non-EU) and was relatively higher in Israel (range: 0.0–4.5%, for 2007, Table 17). Among the 185 AIDS cases notified, 40 (22%) had TB as the first AIDS-indicative disease (Table 18). These represented 4.5% of all TB notifications made by these two countries. Total numbers of AIDS cases with initial TB showed decreasing trends between 2001 and 2007 (Table 19).

### Anti-tuberculosis drug resistance

Israel and Switzerland reported DRS data for 2007, and both participated in the international EQA for DST (Table 20, 21). Nationally representative data on DST results were provided by Israel and Switzerland. Five primary MDR cases were reported by Switzerland (2%) and

18 by Israel (7%). The two countries also reported their combined MDR proportion to be 2.3% and 6.7%, respectively (Table 23). Both countries showed an increase in MDR prevalence between 2002 and 2007, mostly in cases from foreign origin (Table 27).

### Treatment outcome

Outcomes for definite pulmonary TB cases notified in 2006 were reported only by Israel (Table 28), with a success rate for new definite pulmonary cases of 74% (Table 29).

The TB mortality rate in this group, according to the WHO Mortality Database, was reported to be low (0.4 and 0.59 cases per 100 000 population in 2005 and 2004, respectively, for Switzerland).

## 2.3 Balkans

### TB case notification

In 2007 Turkey accounted for 75% of the 26 296 cases<sup>8</sup> reported by the seven Balkan countries (Table 2). The overall TB notification rate was 29/100 000, with rates higher in Bosnia and Herzegovina (62) than in the other countries (14–28). Between 2003 and 2007, rates decreased by 5–10% yearly in all countries except Bosnia and Herzegovina, where an increase was registered (10%), and Turkey, where a stabilisation in rates was observed — as well as an increase in sputum smear-positive rates since 2005 — following efforts in improving case detection. In 2006 and before, age-specific notification rates increased progressively from childhood to old age in all countries (excluding the elderly in Montenegro in 2006). Over the last few years, rates have been low and stable in children and decreasing in most age groups in Albania (elderly excluded), Bosnia and Herzegovina, Croatia and Serbia (Country Profiles). In the former Yugoslav Republic of Macedonia rates are high in children but decreasing or fluctuating in adults.

Only 1% of overall cases were of foreign origin (14% in Croatia) (Table 3). Two thirds of total notifications were males. Paediatric cases represented 1% of reported cases in 2007 but reached 10% in the former Yugoslav Republic of Macedonia, suggesting a different notification practice in place for the children in this country (Table 4).

Pulmonary cases represented 74% of notifications (range: 65–90%, Tables 8, 9). The proportion of cases with an extrapulmonary site has been high in Albania (35% in 2007) and Turkey (30%). More than half of the pulmonary TB cases were smear-positive, with an overall rate of smear-positive TB cases of 12.6/100 000 population (Table 12). 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 Albania and Montenegro.

<sup>8</sup> Not including 930 cases from the UN Administered Province of Kosovo (rate ca. 46.5/100 000)

Only 10% of cases reported in 2007 had been previously treated (range: 6–14%, Table 13). All countries reported culture results in 2007, in contrast to only five in 2004. The proportion of cases confirmed by culture increased since 2006 in all countries except Bosnia and Herzegovina and Montenegro (mean: 42% in 2006, range 35–70%, Table 14). Applying the revised EU case classification, 30% of cases would be classified as confirmed, 12% as probable, 33% as possible, 7% as confirmed only by laboratory, and 18% were not classifiable by the new European case definition (Table 16).

### Tuberculosis and HIV infection

HIV seroprevalence among TB cases was reported by three countries from the Balkans and was low (range: 0.0–0.4%, for the latest available year 2004–2007, Table 17). While HIV patients may be subject to under-notification (Table 1), this finding is in keeping with the low HIV prevalence and AIDS incidence observed in the general population, and in injecting drug users in particular, in the Balkan sub-region [3, 4]. Among the 108 AIDS cases notified, 29 (27%) had TB as first AIDS-indicative disease (Table 18). These represented 0.1% of all TB notifications made by the seven countries. Total numbers of AIDS cases with initial TB showed no particular trends between 2001 and 2007 (Table 19).

### Anti-tuberculosis drug resistance

Albania, the former Yugoslav Republic of Macedonia, Montenegro and Serbia reported DRS data for 2007, and only Serbia and Albania participated in the international EQA for DST (Table 20, 21). Primary MDR cases were reported by Albania (one case) and Serbia (six cases). Three countries provided partial data and reported combined MDR in 1.6% to 4.7%, while in Montenegro, where national data was reported, the combined MDR was 2.3% (Table 23). All countries showed an increase in MDR prevalence between 2002 and 2007, but no increase in MDR cases was reported from Montenegro (Table 27).

### Treatment outcome

Outcomes for definite pulmonary TB cases notified in 2006 were reported by all countries (Table 28). Success rate for new definite pulmonary cases was between 33–97% (Table 29). Deaths were reported in 3% of cases and loss to follow-up in 5%.

## 2.4 East

### TB case notification

In 2007, the overall TB notification rate in the 12 non-EU eastern European and central Asian countries was 131/100 000 (365 233 cases, Table 2). Rates were higher than average in Kazakhstan (258), the Republic of Moldova (178), the Russian Federation (151), Georgia (135), and Kyrgyzstan (125). More than 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 6.2% annually between 2003 and 2007, but this varied widely between countries (from -6.7% to +10.8%). This was higher than that observed between 1998 and 2002 (5.8%). The overall increase was largely attributed to increasing inclusion of previously treated cases (Figure 1), as the number of new cases has been stable and, in six countries, actually decreased between 2006 and 2007. In the last five years, annual increases in excess of 10% were reported by countries where TB control programmes have recently expanded and may therefore be explained by expansion of the notification system coverage and patient access to care rather than a true increase in notified 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 major changes in healthcare 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 re-treated cases other than relapses (e.g. Uzbekistan since 2002) were increasingly included in TB statistics.

In 2007 the male-to-female ratio of cases was 1.3 to 1.9 in the five central Asian republics, and 2.4 to 3.5 in the other countries (Table 3). 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 only the Republic of Moldova, Uzbekistan and the Russian Federation reported cases in foreign citizens – these represented less than 1% of notified cases.

Paediatric TB cases represented 4% of overall cases, but reached 7% in Kyrgyzstan, 11% in Kazakhstan and 12% in Uzbekistan (Table 4). The age group 15–44 years accounted for 45% of cases notified (68% among the foreigners reported in the Russian Federation, Table 5), while only 5% of cases were aged over 64 years. The high case-load in young and middle-aged adults indicates intense transmission in recent years.

In 2007, 91% (country range: 74–94%) of TB cases were pulmonary, of which 42% (24–54%) were sputum smear-positive (Tables 8, 12). Rates of pulmonary smear-positive TB were high (mean: 50/100 000, range: 14–123). More countries have reported data on smear-confirmation over time. In 2007, the proportion of re-treated cases varied widely from 9% to 46% (mean: 38%), reflecting differences in the definition of a notifiable case, even between neighbouring countries (Table 13). Compared to 2002, as national treatment programmes expanded, the proportion of re-treated cases has increased in all countries except Belarus (no data in 2002), Georgia (stable and high), Turkmenistan and Uzbekistan.

Culture confirmation has improved since 2004 but still remains infrequent (eight countries reporting in 2007, mean: 32%, range: 1–100%, Table 14, Map 6).

### Tuberculosis and HIV infection

Ten countries reported the HIV serostatus of notified TB cases (Table 17), and the HIV prevalence was 2% or

lower in Armenia, Azerbaijan, Georgia, Kazakhstan and Tajikistan. It was higher among TB cases in Belarus (2.6%), Ukraine (6%) and the Russian Federation (7%). Kazakhstan, the Russian Federation and Ukraine did not report case-based AIDS data to ECDC for 2007. Turkmenistan reported zero AIDS cases for 2007. The other eight countries together reported 996 AIDS cases that had an initial TB diagnosis in 397 of these (40%) (Table 18). TB as initial AIDS-indicative disease represented 1.4%. In seven countries the number of AIDS-TB cases has clearly increased since 2001 (Table 19).

The low 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. Surveillance data currently available in the East are insufficient to monitor the overlap between the HIV and TB epidemics, which is expected to increase both the TB and the MDR TB case load in the coming years [4].

### Anti-tuberculosis drug resistance

Armenia, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova and Uzbekistan reported the DRS data for 2007, (Table 20). Results from Kazakhstan in 2007 and previous years were comparable to the findings of a nationwide DST survey in 2001 (Country Profiles). Six countries participated in international EQA activities in 2007<sup>9</sup> (Table 21). Levels of primary MDR varied from 6.4% in Georgia to 30.9% in Uzbekistan. Prevalence in re-treated cases was much higher (32.7–78.8%, Table 20). Despite the variable quality of data, this reinforces evidence from elsewhere indicating high prevalence of drug resistance in most non-EU eastern European and central Asian countries.

### Treatment outcome

All countries reported TOM data from 2006 cohorts of sputum smear-positive pulmonary cases (smear-positive cases in Armenia, Table 28). All countries had complete nationwide cohorts, while Azerbaijan reported a large proportion of cases lost to follow-up. The overall success rate at the national level among previously untreated cases was 64% (range: 58–86%, Table 29). This low success was explained by a combination of high levels of failures (mean: 12%, range: 3–16%) and loss to follow-up (13, range: 4–35%). The proportion of cases lost to follow-up precludes certain countries from attaining the 85% treatment success target (Country Profiles).

High failures indicate low effectiveness of initial regimens due to primary MDR and also poor treatment adherence. Among re-treated cases (Table 30), success was lower than 70% in all countries except Kyrgyzstan (71%), while deaths, failures and loss to follow-up (15%, 20%, 25%, respectively in countries with complete data) were higher than among previously untreated cases.

<sup>9</sup> Data source for EQA activities is DRS Questionnaire.

## 2.5 TB mortality

Forty-six countries reported TB mortality data with complete nationwide coverage for at least one year between 2001 and 2006 (data from Serbia includes Montenegro, Table 33). There was a wide variation in the distribution of TB mortality rates (median rate for latest available year: 1.1/100 000, Table 34, Map 3), from 10.0/100 000 population in the East (range: 3–22.3), to 2.7 in the Balkans (0.25–21) and to 0.8 in the EU & West (0.0–10.9). Throughout all of the EU & West, TB mortality rates have decreased or remained stable recently. A net decrease in TB mortality rates in excess of 10% a year over four consecutive years was observed in the Czech Republic, Finland, Greece, Hungary, and Switzerland.

Across the Region, most TB deaths were from pulmonary or miliary disease. Differing reporting practices may explain certain discrepancies between countries, as for instance, a much larger proportion of TB deaths was attributed to miliary disease in Lithuania than in neighbouring Estonia and Latvia. Deaths coded for sequelae of TB and pneumoconiosis associated with TB — shown in Table 33 of this report but otherwise excluded from TB mortality — were practically never recorded in the East. On the other hand, they were observed in various degrees by nearly all countries in the EU, EEA/EFTA and West (non-EU) and Balkans. Their inclusion would increase TB deaths by about 18% in these two sub-regions.

In the European Region, the ratio of TB deaths to TB notifications showed no particular geographical pattern. Nonetheless, low death-to-notification ratios (< 0.10) were mainly restricted to Western countries, while most non-EU eastern European and central Asian countries with comprehensive data had high ratios (0.1 or more). This may be due to MDR, which is more common in these countries (Table 20), but may also be the effect of higher HIV co-morbidity (Tables 17, 18). The mean age of autochthonous TB cases is higher than that of foreign cases (Tables 4, 5), and death among cases in the EU, EEA/EFTA & West (non-EU) is also higher in nationals and known to increase with advancing age (Table 31, [2]). Low death-to-notification ratios in countries like Cyprus, Denmark, Israel, the Netherlands, Norway, Switzerland and the United Kingdom (0.03–0.05) may be the result of a lower risk of dying among cases of foreign origin — currently representing more than half of the TB notifications in these countries — compared to nationals. These observations suggest differences in risk of dying in notified cases, even if data collection practices may differ.

## 2.6 Conclusions and surveillance recommendations

The surveillance data for tuberculosis suggest a diverse epidemiological situation in Europe. Countries in the East remain of concern, with a high and increasing trend in overall TB case notification. Also, more information is becoming available suggesting the widespread presence of drug resistance.

An increase of the overall TB case notification in the WHO European Region has been reported in 2007, mainly due to an increase in the Russian Federation, as a result of the expansion of the standardised information system as well as an increase of TB case registration resulting from quantitative and qualitative expansion of patients' access to TB care. However, it should be noted that if only notified incidence (new and relapse cases) is considered, a decrease was actually recorded over the period 2006–2007.

### EU, EEA/EFTA and West (non-EU)

As for previous years, in the EU, EEA/EFTA and the remaining Western countries, the data have reflected the heterogeneity of the TB situation with three distinct epidemiological groups of countries:

- low-incidence countries, with cases increasingly aggregating in the foreign origin population;
- countries with relatively moderate to high notification rates that are in decline, with MDR TB as yet uncommon; and
- countries with relatively high notification rates and with a high proportion of MDR TB cases, but again with declining overall TB rates.

Most countries of the EU, EEA/EFTA & West (non-EU) have continued to experience a steady decrease in overall TB notification over the last few decades, even if this was briefly reversed in certain countries in the early 1990s [7]. Several epidemiological indicators such as age distribution, notification of paediatric TB cases and TB meningitis trends seem to suggest that the downward trend is real and sustained over the past five years. Additionally, TB mortality rates remain comparatively low.

Treatment monitoring and reporting need to be improved in countries with sub-optimal coverage of TOM, and success rate of 77% (below the 85% target) should be improved in the sub-cohort of pulmonary culture-confirmed cases reported in 2006.

In addition, the following issues should be highlighted:

1. Within this heterogeneous epidemiological setting, the number of high/intermediate TB incidence countries remained the same. Despite their progress in curbing the epidemic, serious attention from a control point of view is required, including optimisation of surveillance.
2. In some low-incidence countries the data shows a considerable shift of the epidemic to more vulnerable populations.
3. The reporting of TB/HIV co-morbidity remains incomplete, not allowing a thorough assessment of the dual epidemic.
4. DST coverage needs to be further expanded, as well as reporting and analysis of resistance to second-line drugs, for better assessment of the XDR TB level.

5. Finally, epidemiological and surveillance peculiarities arising in selected countries need to be further evaluated in more detail to clarify interpretation. This would include further assessment of sustained increases in paediatric cases and/or overall notifications in specific countries.

It should be also noted that the TB case definition for surveillance purposes was revised in 2008 by the European Commission and should be adopted for 2009 data. Several countries already adopted this definition and the correct interpretation of the revised European TB case definition varied between these countries resulting, in some cases, in unclear classification of cases and laborious validation work.

### Balkans and East

The overall TB case notification rates remain high, with an increase compared to the previous year in the Balkans (2.4%) and in the East (6.2%). This is mostly related to Turkey and Bosnia and Herzegovina (84% of TB cases in the Balkans) and the Russian Federation, Ukraine, Kazakhstan and Uzbekistan (87% of all cases in the East). This increase was heavily affected by a rise in previously treated cases that should not be only attributed to still unsolved programmatic and epidemiological challenges faced by these countries, but also as a result of qualitative and quantitative expansion of their surveillance to other geographical areas and patient categories, for instance in the Russian Federation in 2007.

However, the TB notification rate (new and relapse cases) has decreased in both these sub-regions, mainly because of the quality DOTS expansion and gradual implementation of the STOP TB strategy.

The comparatively low treatment success rate could be explained by poor patients' adherence to treatment on the one hand, and the high prevalence of MDR TB among new and re-treated cases on the other hand. In addition, other factors, like certain socio-economic determinants, could play a certain role too.

In 2006, a decrease of TB mortality rates was reported in the majority of countries from both sub-regions (compared to 2001). This could be explained by the successful quality DOTS expansion and general health system strengthening, as well as by:

- improved earlier TB case detection due to better population access to TB healthcare through integration of TB control into primary healthcare facilities;
- enhanced availability of quality assured TB drugs; and
- strengthened collaboration with other national structures and programmes: HIV/AIDS, prisons system, and others.

Nevertheless, a high mortality rate was notified in Bosnia and Herzegovina (21%), and this needs to be carefully studied further.

It should be emphasised that many of the gains in the Balkans and East resulted from a significant

contribution, in particular during the last years, of different international technical and financial partners, who have worked hard to increase the political commitment to TB control in the region, to improve public awareness and education, and to strengthen national health systems, including human resource development and provision of technical assistance where required.

### Surveillance recommendations for the WHO European Region

The main aims should be to:

- strengthen current surveillance systems at national and international levels;
- standardise surveillance systems for comparability; and
- monitor the programme achievements using TB data at the national and sub-national level for further TB control activities.

These recommendations are consistent with the Berlin Declaration on Tuberculosis, the Plan to Stop TB in 18 High-priority countries in the WHO European Region [10], and the Framework Action Plan to Fight TB in the European Union [11]:

- to integrate the TB surveillance into overall communicable disease surveillance;
- to implement the new WHO recommendation for sputum smear-positive TB cases [9];
- to implement MDR/XDR TB and TB/HIV co-infection surveillance into routine TB surveillance;
- to computerise TB data management at the national level, considering local infrastructure and links to the joint ECDC-WHO TB information system in the WHO European Region;
- to strengthen the technical capacity at country level to analyse TB epidemiology, programme monitoring and evaluation;
- to validate the quality of national surveillance systems and, as a consequence, to revise the WHO estimates of TB incidence, prevalence and mortality; and
- to use the cohort analysis at the national and sub-national levels.

### Surveillance recommendations for the EU & EEA/EFTA

In line with the strategies for surveillance outlined in the Framework Action Plan to Fight TB in the European Union, a number of recommendations are suggested. These aim at improving monitoring of the evolving TB epidemiological situation and tailor TB control activities maximising their effectiveness.

Specifically, the following actions are to be considered:

- improving the integration of laboratory reporting of confirmatory TB tests with case notification at the national level, so to improve completeness;

- fully implementing treatment outcome monitoring and extending coverage of TOM to all culture-positive cases;
- optimise reporting and analysis of treatment outcome after 12 months, including of MDR TB patients;
- implementing drug resistance surveillance more widely, either by collecting initial DST results for all cases or through periodic prevalence surveys [6];
- improving completeness of 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 [7];
- improving and enhancing surveillance of TB among vulnerable populations by providing better estimates of denominators for at-risk populations, collecting data on selective interventions and active case finding (i.e. TB screening, contact investigations and outbreak management) [8];
- reviewing annually the objectives for the surveillance of TB at the European level in order to ensure their suitability and relevance to the situation in the European Union.

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## 3. Tables



**Summary table: Tuberculosis surveillance data by geographical area, Europe, 2007**

	Table showing data by country	Geographical area <sup>a</sup>									
		EU & EFTA/EEA		EU & EFTA/EEA & West		Balkans		East		Total	
		N <sup>b</sup>		N <sup>b</sup>		N <sup>b</sup>		N <sup>b</sup>		N <sup>b</sup>	
<b>Total population (millions)</b>	-	<b>30</b>	<b>496.3</b>	<b>35</b>	<b>516.1</b>	<b>7</b>	<b>91.6</b>	<b>12</b>	<b>278.4</b>	<b>54</b>	<b>886.2</b>
<b>Demographic and clinical features of TB cases, 2007</b>											
Total number of cases	2	30	84917	35	85798	7	26296	12	365233	54	477327
TB cases / 100 000 population	2	30	16.9	35	16.6	7	28.7	12	131.2	54	53.9
Mean annual % change in notification rate (2003-2007)	2	30	-3.8%	35	-3.8%	7	2.4%	12	6.2%	54	3.7%
Foreign origin	3	30	21%	35	21%	7	1%	12	1%	54	4%
Sex ratio (male to female), nationals	3	30	2.0	35	2.0	7	1.7	10	2.1	52	2.4
Sex ratio (male to female), foreign-born / citizens	3	30	1.4	32	1.4	7	1.0	3	2.3	45	1.4
Age over 64 years, nationals	4	30	21%	33	21%	7	16%	10	5%	48	8%
Age over 64 years, foreign-born / citizens	5	30	9%	33	9%	7	26%	3	1%	43	9%
Pulmonary disease	8	30	80%	33	80%	7	74%	12	91%	52	88%
Pulmonary sputum smear-positive cases / 100 000 population	12	30	6.7	33	6.6	7	12.6	12	49.7	52	20.8
Previously untreated (diagnosed) for TB	13	30	79%	34	79%	7	90%	12	62%	53	66%
Culture positive	14	30	45%	35	45%	7	42%	8	32%	48	35%
HIV infection among TB cases (latest available data 2003-2007)	17	20	2.6%	22	2.6%	5	0.2%	10	5.0%	37	4.6%
TB deaths / 100 000 (median, latest available rates 2002-2006)	34	26	0.9	30	0.8	5	2.7	11	8.8	46	1.3
<b>Multidrug resistance (MDR), 2007<sup>c</sup></b>											
Primary MDR (median)	24	19	1.5%	21	1.6%	3	0.0%	0	-	24	1.5%
Nationals, combined MDR (median)	25	21	0.6%	23	0.6%	1	2.3%	0	-	24	0.7%
Foreign-born/citizens, combined MDR (median)	26	20	3.9%	23	3.9%	0	-	0	-	23	3.9%
<b>Outcome, new definite pulmonary cases, 2006<sup>c,d</sup></b>											
Success (cure or treatment completion)	29	21	80%	23	80%	7	89%	12	64%	42	73%
Death	29	21	7%	23	7%	7	3%	12	10%	42	8%
Failure	29	21	2%	23	2%	7	1%	12	12%	42	7%
Still on treatment	29	21	2%	23	2%	7	1%	12	0%	42	1%
Loss to follow-up (default, transfer, unknown)	29	21	9%	23	9%	7	5%	12	13%	42	11%

<sup>a</sup> Mean value, unless otherwise indicated; for definition of geographical areas see Technical Note

<sup>b</sup> Number of countries with available data and included in the statistics. Liechtenstein is included in the report, but is only presented as EEA/EFTA country (it does not belong to WHO European Region)

<sup>c</sup> Including only countries with complete/representative nationwide data (see Technical Note)

<sup>d</sup> Among culture-positive pulmonary cases in 21 EU/EEA/EFTA countries; in other countries defined by smear or combination of smear and culture  
Primary MDR: among previously untreated cases; Combined MDR: among all cases tested (see Technical Note)

**Table 1: Data format and completeness of tuberculosis reporting, Europe, 2007**

Geographical area	Format of TB notification data reported to European surveillance	Parallel reporting by laboratories	Under-reporting (2007 or as indicated)							
			Estimated % of notifiable TB cases reported	Method of estimation	Sub-groups considered particularly subject to under notification					
					Immigrants	Prisoners	Children	AIDS patients	Elderly	Certain regions <sup>a</sup>
<b>EU</b>										
Austria	Case-based	-	-	-						
Belgium	Case-based	all	-	-						
Bulgaria	Case-based	all	-	-	X					
Cyprus	Case-based	all	100%	-						
Czech Republic	Case-based	all	98%	-						
Denmark	Case-based	all	99%	based on qualified guess						
Estonia	Case-based	all	95%	-	X	X	X	X	X	X
Finland	Case-based	all	95%	compare data from different sources						
France	Case-based	all	70%	compare data from different sources						
Germany	Case-based	all	-	-						
Greece	Case-based	-	-	-						
Hungary	Case-based	-	-	-						
Ireland	Case-based	all	-	-	X		X			
Italy	Case-based	-	-	-				X		
Latvia	Case-based	some	100%	surveillance vs. lab data						
Lithuania	Case-based	all	-	-						
Luxembourg	Case-based	no	100%	expert opinion	X	X	X	X	X	
Malta	Case-based	all	100%	compare data from different sources						
Netherlands	Case-based	no	95%	surveillance vs. lab data						
Poland	Case-based	all	95%	-	X		X	X		
Portugal	Case-based	some	92%	capture-recapture method	X					
Romania	Case-based	some	75% <sup>b</sup>	using WHO estimates						
Slovakia	Case-based	all	98%	-	X					
Slovenia	Case-based	all	96%	capture-recapture method	X					
Spain	Case-based	no	-	-	X		X			
Sweden	Case-based	all	-	expert opinion						
United Kingdom	Case-based	some	93%	capture-recapture method		X	X	X		
<b>EFTA/EEA</b>										
Iceland	Case-based	-	100%	-						
Liechtenstein <sup>c</sup>	Case-based	-	-	-						
Norway	Case-based	all	95%	compare data from different sources						
<b>West, non-EU</b>										
Andorra	Aggregate	all	100%	capture-recapture method						
Israel	Aggregate	all	100%	expert opinion						
Monaco	-	-	-	-						
San Marino	Aggregate	-	-	-	X					
Switzerland	Aggregate	all	95%	expert opinion			X			
<b>Balkans</b>										
Albania	Aggregate	some	-	-		X	X	X	X	X
Bosnia and Herzegovina	Aggregate	all	-	-						
Croatia	Aggregate	all	-	-	X					
Montenegro	Aggregate	some	-	-		X	X	X	X	
Serbia	Aggregate	no	95%	capture-recapture						
The former Yugoslav Republic of Macedonia	Aggregate	all	-	-	X	X	X	X	X	
Turkey	Aggregate	some	-	-				X		X
<b>East</b>										
Armenia	Aggregate	all	100%	compare data from different sources						
Azerbaijan	Aggregate	no	-	-						
Belarus	Aggregate	all	100% <sup>b</sup>	based on 100% coverage x-ray						
Georgia	Aggregate	no	96% <sup>b</sup>	not stated	X					X
Kazakhstan	Aggregate	all	-	-						
Kyrgyzstan	Aggregate	all	100% <sup>b</sup>	not stated						
Republic of Moldova (the)	Aggregate	all	98%	not stated	X					
Russian Federation (the)	Aggregate	some	85%	assessment is based on qualitative indicators	X					
Tajikistan	Aggregate	some	49% <sup>b</sup>	based on WHO estimation		X	X	X		X
Turkmenistan	Aggregate	all	-	-						
Ukraine	Aggregate	all	94% <sup>d</sup>	not stated	X	X				X
Uzbekistan	Aggregate	all	99%	not stated						

<sup>a</sup> See also Technical Note for places and regions which are not included in this Report<sup>b</sup> Cases of foreign origin not included in reporting system<sup>c</sup> Liechtenstein is not a member of the WHO European Region, but is a member of EEA/EFTA and reports to ECDC. For this report, the totals for the European Region will include data from Liechtenstein<sup>d</sup> Undernotification of TB data from prison and Chernivetska region

**Table 2: Tuberculosis cases, case rates per 100 000 population and mean annual change in rates, Europe, 2003–2007**

Geographical area	2003		2004		2005		2006		2007		Mean annual % change in rate, 2003–2007
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	
<b>EU</b>											
Austria	980	12.1	1061	13.0	999	12.1	873	10.5	874	10.5	-3.1%
Belgium	1117	10.8	1198	11.5	1107	10.6	1127	10.7	1028	9.7	-2.4%
Bulgaria	3263	41.7	3232	41.5	3302	42.7	3232	42.0	3052	39.8	-1.1%
Cyprus	35	4.8	30	4.1	37	4.9	37	4.8	42	5.3	3.4%
Czech Republic	1162	11.4	1057	10.3	1007	9.8	973	9.5	871	8.4	-7.2%
Denmark <sup>a</sup>	393	7.3	385	7.1	422	7.8	377	6.9	391	7.2	-0.2%
Estonia	623	46.0	594	44.0	519	38.6	455	33.9	487	36.3	-5.4%
Finland	412	7.9	331	6.3	361	6.9	299	5.7	313	5.9	-6.1%
France	6098	9.8	5514	8.8	5374	8.6	5336	8.4	5588	8.8	-2.6%
Germany	7166	8.7	6542	7.9	6020	7.3	5402	6.6	5020	6.1	-8.4%
Greece	620	5.6	774	7.0	769	6.9	681	6.1	659	5.9	2.0%
Hungary	2582	25.5	2340	23.2	1964	19.5	1894	18.8	1752	17.4	-9.0%
Ireland	407	10.2	432	10.6	450	10.8	458	10.7	478	10.9	1.8%
Italy	4518	7.8	4220	7.3	4137	7.1	4387	7.4	4527	7.6	-0.6%
Latvia	1726	74.2	1610	69.6	1443	62.7	1328	58.0	1255	55.1	-7.1%
Lithuania	2821	81.7	2514	73.2	2574	75.4	2559	75.4	2408	71.3	-3.2%
Luxembourg	54	12.0	31	6.8	37	8.0	33	7.0	39	8.1	-5.3%
Malta	7	1.8	19	4.7	25	6.2	30	7.4	38	9.3	61.4%
Netherlands	1321	8.1	1344	8.3	1155	7.1	1021	6.2	960	5.9	-7.7%
Poland	10124	26.5	9493	24.9	9280	24.3	8593	22.5	8616	22.6	-3.9%
Portugal	4148	39.7	3854	36.7	3573	33.9	3423	32.3	3127	29.5	-7.2%
Romania	31039	142.8	31034	143.1	29289	135.4	27319	126.5	25491	118.3	-4.5%
Slovakia	983	18.3	705	13.1	760	14.1	730	13.5	682	12.6	-7.8%
Slovenia	293	14.7	263	13.2	278	13.9	215	10.7	218	10.8	-6.7%
Spain	7467	17.8	7766	18.2	7820	18.0	8029	18.2	7767	17.3	-0.6%
Sweden	408	4.6	461	5.1	559	6.2	497	5.5	491	5.4	4.9%
United Kingdom	7220	12.1	7609	12.7	8317	13.8	8498	14.0	8417	13.8	3.4%
<b>Subtotal EU countries</b>	<b>96 987</b>	<b>19.9</b>	<b>94 413</b>	<b>19.3</b>	<b>91 578</b>	<b>18.6</b>	<b>87 806</b>	<b>17.8</b>	<b>84 591</b>	<b>17.0</b>	<b>-3.8%</b>
<b>EEA</b>											
Iceland	5	1.7	12	4.1	11	3.7	13	4.3	14	4.5	37.2%
Liechtenstein	0	-	0	-	0	-	0	-	5	14.2	-
Norway	337	7.4	302	6.6	288	6.2	294	6.3	307	6.5	-2.9%
<b>Subtotal EEA countries</b>	<b>342</b>	<b>7.0</b>	<b>314</b>	<b>6.4</b>	<b>299</b>	<b>6.0</b>	<b>307</b>	<b>6.1</b>	<b>326</b>	<b>6.4</b>	<b>-1.9%</b>
<b>Total EU/EEA countries</b>	<b>97 329</b>	<b>19.8</b>	<b>94 727</b>	<b>19.1</b>	<b>91 877</b>	<b>18.5</b>	<b>88 113</b>	<b>17.7</b>	<b>84 917</b>	<b>16.9</b>	<b>-3.8%</b>
<b>West, non-EU</b>											
Andorra	11	15.8	7	9.4	10	12.9	13	16.3	6	7.3	-8.0%
Israel	529	8.0	519	7.7	406	5.9	386	5.5	397	5.6	-8.1%
Monaco	1	-	0	-	0	-	0	-	0	-	-
San Marino	1	-	0	0.0	0	-	0	-	0	-	-
Switzerland	623	8.5	593	8.0	567	7.6	520	6.9	478	6.3	-7.1%
<b>Subtotal West, non-EU</b>	<b>1165</b>	<b>8.3</b>	<b>1119</b>	<b>7.8</b>	<b>983</b>	<b>6.8</b>	<b>919</b>	<b>6.3</b>	<b>881</b>	<b>6.0</b>	<b>-7.9%</b>
<b>Total EU/EEA &amp; West</b>	<b>98 494</b>	<b>19.4</b>	<b>95 846</b>	<b>18.8</b>	<b>92 860</b>	<b>18.2</b>	<b>89 032</b>	<b>17.3</b>	<b>85 798</b>	<b>16.6</b>	<b>-3.8%</b>
<b>Balkans</b>											
Albania	561	18.0	581	18.6	540	17.2	502	15.9	447	14.1	-5.8%
Bosnia and Herzegovina	1780	46.4 <sup>b</sup>	2382	62.0	2160	56.2	1800	46.8	2400	62.4	10.2%
Croatia	1493	33.6	1297	29.2	1141	25.7	1135	25.6	982	22.1	-9.8%
Montenegro	0	-	0	-	170	27.3	171	27.4	159	25.4	-
Serbia <sup>c</sup>	2949	36.3 <sup>d</sup>	2824	34.8	2378	32.0	2150	29.0	2051	27.8	-6.4%
The former Yugoslav Republic of Macedonia	697	34.4	680	33.5	658	32.3	627	30.7	563	27.5	-5.3%
Turkey	18590	26.5	19799	27.8	20535	28.5	20526	28.1	19694	28.1	1.5%
<b>Total Balkans</b>	<b>26 070</b>	<b>26.1</b>	<b>27 563</b>	<b>27.3</b>	<b>27 582</b>	<b>27.1</b>	<b>26 911</b>	<b>28.5</b>	<b>26 296</b>	<b>28.7</b>	<b>2.4%</b>
<b>East</b>											
Armenia	1570	48.9	1701	52.9	2322	72.2	2155	66.9	2129	66.0	9.0%
Azerbaijan	3931	47.7	6501	78.3	7920	94.4	7498	88.4	7347	85.6	18.8%
Belarus	5963	60.4	6490	66.1	6357	65.0	6065	62.3	5756	59.3	-0.3%
Georgia	5993	138.3	5967	138.2	6448	147.8	6311	143.5	5912	134.7	-0.5%
Kazakhstan	32169	212.2	32131	210.5	31187	202.8	43204	278.9	40279	258.0	6.4%
Kyrgyzstan	7025	136.7	6641	128.0	6765	129.1	6656	125.6	6707	125.1	-2.2%
Republic of Moldova (the)	5027	139.1	6008	166.7	6278	174.6	6118	170.6	6367	178.0	6.6%
Russian Federation (the)	152244	105.2	152438	106.0	156047	109.0	152265	106.9	214924	151.2	10.8%
Tajikistan	4883	76.0	5122	78.8	7142	108.4	6671	99.9	8081	119.2	13.2%
Turkmenistan	4759	100.7	4172	87.0	3291	67.7	3369	68.3	3698	74.0	-6.7%
Ukraine	40659	85.4	38403	81.2	43367	92.4	41265	88.4	40643	87.4	0.9%
Uzbekistan	26172	100.7	25714	97.4	28891	107.9	25310	93.1	23390	84.8	-3.8%
<b>Total East</b>	<b>290 395</b>	<b>104.1</b>	<b>291 288</b>	<b>104.6</b>	<b>306 015</b>	<b>110.0</b>	<b>306 887</b>	<b>110.3</b>	<b>365 233</b>	<b>131.2</b>	<b>6.2%</b>
<b>Total European Region</b>	<b>414 959</b>	<b>46.9</b>	<b>414 697</b>	<b>46.7</b>	<b>426 457</b>	<b>47.8</b>	<b>422 830</b>	<b>47.7</b>	<b>477 327</b>	<b>53.9</b>	<b>3.7%</b>

Note: for TB cases and case rates by country and year for the whole period 1995–2006 please see [www.eurotb.org](http://www.eurotb.org)

<sup>a</sup> Excluding Greenland (60 cases in 2007, see Technical Note)

<sup>b</sup> Excluding Republika Srpska

<sup>c</sup> Excluding the UN Administered Province of Kosovo (930 cases in 2007, see Technical Note)

<sup>d</sup> Including cases from Montenegro

Table 3: Tuberculosis cases by geographical origin and sex ratio, Europe, 2007

Geographical area	Criterion	Origin										
		National			Foreign			Unknown			Total <sup>a</sup>	
		N	(%)	Sex ratio (M:F) <sup>b</sup>	N	(%)	Sex ratio (M:F) <sup>b</sup>	N	(%)	Sex ratio (M:F) <sup>b</sup>	N	Sex ratio (M:F) <sup>b</sup>
<b>EU</b>												
Austria	citizenship	555	(64)	2.2	319	(36)	2.0	0	(0)	-	874	2.1
Belgium	citizenship	541	(53)	1.7	487	(47)	1.5	0	(0)	-	1028	1.6
Bulgaria	birthplace	3047	(100)	2.0	5	(0)	N/F	0	(0)	-	3052	2.0
Cyprus	birthplace	11	(26)	0.8	31	(74)	1.2	0	(0)	-	42	1.1
Czech Republic	birthplace	718	(82)	2.1	153	(18)	3.0	0	(0)	-	871	2.2
Denmark <sup>c</sup>	birthplace	150	(38)	2.3	241	(62)	1.1	0	(0)	-	391	1.5
Estonia	birthplace	410	(84)	2.9	77	(16)	2.3	0	(0)	-	487	2.8
Finland	citizenship	254	(81)	1.7	59	(19)	1.0	0	(0)	-	313	1.5
France	birthplace	2790	(50)	1.3	2505	(45)	1.6	293	(5)	1.5	5588	1.4
Germany	birthplace	2760	(55)	1.6	2089	(42)	1.2	171	(3)	1.3	5020	1.4
Greece	citizenship	425	(64)	1.9	219	(33)	2.4	15	(2)	2.0	659	2.0
Hungary	birthplace	1668	(95)	2.0	84	(5)	3.0	0	(0)	-	1752	2.0
Ireland	birthplace	277	(58)	1.7	181	(38)	1.5	20	(4)	1.4	478	1.6
Italy	birthplace	2308	(51)	1.4	1904	(42)	1.5	315	(7)	1.8	4527	1.5
Latvia	birthplace	1178	(94)	2.2	66	(5)	2.9	11	(1)	1.8	1255	2.3
Lithuania	birthplace	2332	(97)	2.4	76	(3)	2.6	0	(0)	-	2408	2.4
Luxembourg	birthplace	13	(33)	1.6	24	(62)	3.0	2	(5)	1.0	39	2.3
Malta	birthplace	14	(37)	13.0	24	(63)	5.0	0	(0)	-	38	6.6
Netherlands	birthplace	359	(37)	1.4	597	(62)	1.3	4	(0)	3.0	960	1.3
Poland	citizenship	8561	(99)	2.0	55	(1)	2.4	0	(0)	-	8616	2.0
Portugal	birthplace	2696	(86)	2.2	424	(14)	2.2	7	(0)	1.3	3127	2.2
Romania	birthplace	25491	(100)	2.2	0	(0)	-	0	(0)	-	25491	2.2
Slovakia	birthplace	670	(98)	1.8	12	(2)	11.0	0	(0)	-	682	1.8
Slovenia	birthplace	180	(83)	1.3	38	(17)	2.8	0	(0)	-	218	1.5
Spain	birthplace	4876	(63)	1.7	2029	(26)	1.7	862	(11)	1.7	7767	1.7
Sweden	birthplace	110	(22)	1.3	381	(78)	0.9	0	(0)	-	491	1.0
United Kingdom	birthplace	2165	(26)	1.3	5454	(65)	1.2	798	(9)	1.3	8417	1.2
<b>Subtotal EU countries</b>		<b>64559</b>	<b>(76)</b>	<b>2.0</b>	<b>17534</b>	<b>(21)</b>	<b>1.4</b>	<b>2498</b>	<b>(3)</b>	<b>1.5</b>	<b>84591</b>	<b>1.8</b>
<b>EEA</b>												
Iceland	birthplace	5	(36)	0.7	9	(64)	0.3	0	(0)	-	14	0.4
Liechtenstein	citizenship	4	(80)	3.0	0	(0)	-	1	(20)	N/M	5	1.5
Norway	birthplace	64	(21)	1.1	243	(79)	1.0	0	(0)	-	307	1.1
<b>Subtotal EEA countries</b>		<b>73</b>	<b>(22)</b>	<b>0.4</b>	<b>252</b>	<b>(77)</b>	<b>1.0</b>	<b>1</b>	<b>(0)</b>	<b>N/M</b>	<b>326</b>	<b>1.0</b>
<b>Total EU/EEA countries</b>		<b>64632</b>	<b>(76)</b>	<b>2.0</b>	<b>17786</b>	<b>(21)</b>	<b>1.4</b>	<b>2499</b>	<b>(3)</b>	<b>1.5</b>	<b>84917</b>	<b>1.8</b>
<b>West, non-EU</b>												
Andorra	citizenship	5	(83)	0.3	1	(17)	N/M	0	(0)	-	6	0.2
Israel	birthplace	60	(15)	1.6	337	(85)	1.4	0	(0)	-	397	1.4
Monaco	-	0	-	-	0	-	-	0	-	-	0	-
San Marino	-	0	-	-	0	-	-	0	-	-	0	-
Switzerland	citizenship	177	(37)	1.4	263	(55)	1.0	37	(8)	1.2	477	1.1
<b>Subtotal West, non-EU</b>		<b>242</b>	<b>(28)</b>	<b>1.4</b>	<b>601</b>	<b>(68)</b>	<b>1.2</b>	<b>37</b>	<b>(4)</b>	<b>1.2</b>	<b>880</b>	<b>1.2</b>
<b>Total EU/EEA &amp; West</b>		<b>64874</b>	<b>(76)</b>	<b>2.0</b>	<b>18387</b>	<b>(21)</b>	<b>1.4</b>	<b>2536</b>	<b>(3)</b>	<b>1.5</b>	<b>85797</b>	<b>1.8</b>
<b>Balkans</b>												
Albania	citizenship	443	(99)	1.8	4	(1)	0.3	0	(0)	-	447	1.7
Bosnia and Herzegovina	citizenship	2399	(100)	1.4	1	(0)	0.0	0	(0)	-	2400	1.4
Croatia	citizenship	511	(52)	1.8	139	(14)	0.9	332	(34)	1.3	982	1.5
Montenegro	citizenship	158	(99)	2.1	1	(1)	N/M	0	(0)	-	159	2.1
Serbia	citizenship	2035	(99)	1.5	13	(1)	1.6	3	(0)	2.0	2051	1.5
The former Yugoslav Republic of Macedonia	birthplace	536	(95)	1.7	27	(5)	0.8	0	(0)	-	563	1.6
Turkey	birthplace	19555	(99)	1.7	139	(1)	1.2	0	(0)	-	19694	1.7
<b>Total Balkans</b>		<b>25637</b>	<b>(97)</b>	<b>1.7</b>	<b>324</b>	<b>(1)</b>	<b>1.0</b>	<b>335</b>	<b>(1)</b>	<b>1.3</b>	<b>26296</b>	<b>1.6</b>
<b>East</b>												
Armenia	citizenship	2129	(100)	3.5	0	(0)	-	0	(0)	-	2129	3.5
Azerbaijan	citizenship	-	-	-	0	-	-	0	-	-	0	-
Belarus	citizenship	5756	(100)	2.5	0	(0)	-	0	(0)	-	5756	2.5
Georgia	citizenship	5912	(100)	2.5	0	(0)	-	0	(0)	-	5912	2.5
Kazakhstan	citizenship	40279	(100)	1.6	0	(0)	-	0	(0)	-	40279	1.6
Kyrgyzstan	citizenship	6707	(100)	1.4	0	(0)	-	0	(0)	-	6707	1.4
Republic of Moldova (the)	citizenship	6347	(100)	3.0	20	(0)	2.3	0	(0)	-	6367	3.0
Russian Federation (the)	citizenship	212801	(99)	2.4	2123	(1)	2.3	0	(0)	-	214924	2.4
Tajikistan	citizenship	8081	(100)	1.3	0	(0)	-	0	(0)	-	8081	1.3
Turkmenistan	birthplace	3698	(100)	1.9	0	(0)	-	0	(0)	-	3698	1.9
Ukraine	citizenship	0	(0)	-	0	(0)	-	40643	(100)	-	40643	-
Uzbekistan	citizenship	23385	(100)	1.5	5	(0)	0.3	0	(0)	-	23390	1.5
<b>Total East</b>		<b>315095</b>	<b>(88)</b>	<b>2.1</b>	<b>2148</b>	<b>(1)</b>	<b>2.3</b>	<b>40643</b>	<b>(11)</b>	<b>-</b>	<b>357886</b>	<b>2.1</b>
<b>Total European Region</b>		<b>405606</b>	<b>(86)</b>	<b>2.4</b>	<b>20859</b>	<b>(4)</b>	<b>1.4</b>	<b>43514</b>	<b>(9)</b>	<b>1.5</b>	<b>469979</b>	<b>2.0</b>

<sup>a</sup> Total excludes missing data<sup>b</sup> Ratio calculated on cases with available information on sex<sup>c</sup> By birthplace of parents for Danish-born cases under 26 years of age

N/F = no females in subgroup; N/M = no males in subgroup

**Table 4: Tuberculosis cases of national origin, by age group, Europe, 2007**

Geographical area	National origin								National origin						Total
	0-4		5-14		15-24		25-44		45-64		>64		Unknown		
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
<b>EU</b>															
Austria	6	(1)	6	(1)	23	(4)	110	(20)	218	(39)	191	(34)	1	(0)	555
Belgium	27	(5)	24	(4)	34	(6)	154	(28)	139	(26)	163	(30)	0	(0)	541
Bulgaria	58	(2)	141	(5)	322	(11)	959	(31)	1011	(33)	556	(18)	0	(0)	3047
Cyprus	1	(9)	0	(0)	3	(27)	5	(45)	2	(18)	0	(0)	0	(0)	11
Czech Republic	2	(0)	2	(0)	21	(3)	129	(18)	295	(41)	269	(37)	0	(0)	718
Denmark <sup>a</sup>	2	(1)	3	(2)	6	(4)	43	(29)	73	(49)	23	(15)	0	(0)	150
Estonia	1	(0)	0	(0)	31	(8)	181	(44)	151	(37)	46	(11)	0	(0)	410
Finland	1	(0)	0	(0)	11	(4)	17	(7)	86	(34)	139	(55)	0	(0)	254
France	106	(4)	109	(4)	284	(10)	696	(25)	676	(24)	919	(33)	0	(0)	2790
Germany	73	(3)	52	(2)	147	(5)	499	(18)	857	(31)	1132	(41)	0	(0)	2760
Greece	11	(3)	15	(4)	17	(4)	80	(19)	117	(28)	182	(43)	3	(1)	425
Hungary	3	(0)	4	(0)	37	(2)	359	(22)	794	(48)	471	(28)	0	(0)	1668
Ireland	24	(9)	7	(3)	23	(8)	80	(29)	69	(25)	74	(27)	0	(0)	277
Italy	63	(3)	34	(1)	122	(5)	438	(19)	587	(25)	1018	(44)	46	(2)	2308
Latvia	26	(2)	31	(3)	120	(10)	497	(42)	408	(35)	96	(8)	0	(0)	1178
Lithuania	32	(1)	53	(2)	151	(6)	796	(34)	981	(42)	319	(14)	0	(0)	2332
Luxembourg	1	(8)	0	(0)	0	(0)	2	(15)	3	(23)	7	(54)	0	(0)	13
Malta	0	(0)	0	(0)	0	(0)	1	(7)	5	(36)	8	(57)	0	(0)	14
Netherlands	20	(6)	20	(6)	34	(9)	81	(23)	89	(25)	115	(32)	0	(0)	359
Poland	15	(0)	54	(1)	444	(5)	2186	(26)	3756	(44)	2106	(25)	0	(0)	8561
Portugal	20	(1)	37	(1)	234	(9)	1178	(44)	708	(26)	519	(19)	0	(0)	2696
Romania	399	(2)	626	(2)	3529	(14)	9245	(36)	8707	(34)	2985	(12)	0	(0)	25491
Slovakia	7	(1)	9	(1)	33	(5)	132	(20)	270	(40)	219	(33)	0	(0)	670
Slovenia	1	(1)	5	(3)	9	(5)	39	(22)	47	(26)	79	(44)	0	(0)	180
Spain	194	(4)	123	(3)	461	(9)	1795	(37)	1158	(24)	1137	(23)	8	(0)	4876
Sweden	9	(8)	10	(9)	7	(6)	13	(12)	22	(20)	49	(45)	0	(0)	110
United Kingdom	143	(7)	168	(8)	319	(15)	569	(26)	454	(21)	512	(24)	0	(0)	2165
<b>Subtotal EU countries</b>	<b>1245</b>	<b>(2)</b>	<b>1533</b>	<b>(2)</b>	<b>6422</b>	<b>(10)</b>	<b>20284</b>	<b>(31)</b>	<b>21683</b>	<b>(34)</b>	<b>13334</b>	<b>(21)</b>	<b>58</b>	<b>(0)</b>	<b>64559</b>
<b>EEA</b>															
Iceland	0	(0)	0	(0)	0	(0)	1	(20)	2	(40)	2	(40)	0	(0)	5
Liechtenstein	0	(0)	0	(0)	0	(0)	3	(75)	1	(25)	0	(0)	0	(0)	4
Norway	3	(5)	1	(2)	5	(8)	5	(8)	10	(16)	40	(63)	0	(0)	64
<b>Subtotal EEA countries</b>	<b>3</b>	<b>(4)</b>	<b>1</b>	<b>(1)</b>	<b>5</b>	<b>(7)</b>	<b>9</b>	<b>(12)</b>	<b>13</b>	<b>(18)</b>	<b>42</b>	<b>(58)</b>	<b>0</b>	<b>(0)</b>	<b>73</b>
<b>Total EU/EEA countries</b>	<b>1248</b>	<b>(2)</b>	<b>1534</b>	<b>(2)</b>	<b>6427</b>	<b>(10)</b>	<b>20293</b>	<b>(31)</b>	<b>21696</b>	<b>(34)</b>	<b>13376</b>	<b>(21)</b>	<b>58</b>	<b>(0)</b>	<b>64632</b>
<b>West, non-EU</b>															
Andorra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Israel	4	(7)	6	(10)	7	(12)	20	(33)	13	(22)	10	(17)	0	(0)	60
Monaco	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	3	(2)	3	(2)	7	(4)	35	(20)	47	(26)	83	(47)	0	(0)	178
<b>Subtotal West, non-EU</b>	<b>7</b>	<b>(3)</b>	<b>9</b>	<b>(4)</b>	<b>14</b>	<b>(6)</b>	<b>55</b>	<b>(23)</b>	<b>60</b>	<b>(25)</b>	<b>93</b>	<b>(39)</b>	<b>0</b>	<b>(0)</b>	<b>238</b>
<b>Total EU/EEA &amp; West</b>	<b>1255</b>	<b>(2)</b>	<b>1543</b>	<b>(2)</b>	<b>6441</b>	<b>(10)</b>	<b>20348</b>	<b>(31)</b>	<b>21756</b>	<b>(34)</b>	<b>13469</b>	<b>(21)</b>	<b>58</b>	<b>(0)</b>	<b>64870</b>
<b>Balkans</b>															
Albania	3	(1)	23	(5)	74	(17)	103	(23)	146	(33)	94	(21)	0	(0)	443
Bosnia and Herzegovina	6	(0)	18	(1)	192	(8)	507	(21)	734	(31)	942	(39)	0	(0)	2399
Croatia	3	(1)	18	(4)	53	(10)	127	(25)	169	(33)	141	(28)	0	(0)	511
Montenegro	0	(0)	2	(1)	17	(11)	50	(32)	59	(37)	30	(19)	0	(0)	158
Serbia	8	(0)	21	(1)	143	(7)	492	(24)	728	(36)	643	(32)	0	(0)	2035
The former Yugoslav Republic of Macedonia	16	(3)	37	(7)	69	(13)	171	(32)	164	(31)	79	(15)	0	(0)	536
Turkey	197	(1)	787	(4)	4472	(23)	7297	(37)	4726	(24)	2076	(11)	0	(0)	19555
<b>Total Balkans</b>	<b>233</b>	<b>(1)</b>	<b>906</b>	<b>(4)</b>	<b>5020</b>	<b>(20)</b>	<b>8747</b>	<b>(34)</b>	<b>6726</b>	<b>(26)</b>	<b>4005</b>	<b>(16)</b>	<b>0</b>	<b>(0)</b>	<b>25637</b>
<b>East</b>															
Armenia	40	(2)	61	(3)	418	(20)	731	(34)	661	(31)	218	(10)	0	(0)	2129
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belarus	11	(0)	20	(0)	559	(10)	2393	(42)	2095	(36)	678	(12)	0	(0)	5756
Georgia	78	(1)	237	(4)	1094	(19)	2530	(43)	1482	(25)	488	(8)	3	(0)	5912
Kazakhstan	646	(2)	1979	(5)	9302	(23)	17822	(44)	8737	(22)	1793	(4)	0	(0)	40279
Kyrgyzstan	101	(2)	578	(9)	1520	(23)	2117	(32)	976	(15)	375	(6)	1040	(16)	6707
Republic of Moldova (the)	65	(1)	116	(2)	978	(15)	2862	(45)	2046	(32)	300	(5)	0	(0)	6367
Russian Federation (the)	1278	(1)	2124	(1)	18843	(9)	61065	(29)	39395	(19)	9098	(4)	80998	(38)	212801
Tajikistan	105	(1)	480	(6)	1979	(24)	2313	(29)	886	(11)	315	(4)	2003	(25)	8081
Turkmenistan	17	(0)	169	(5)	808	(22)	1857	(50)	847	(23)	0	(0)	0	(0)	3698
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	446	(2)	2294	(10)	3845	(16)	8843	(38)	5348	(23)	2609	(11)	0	(0)	23385
<b>Total East</b>	<b>2787</b>	<b>(1)</b>	<b>8058</b>	<b>(3)</b>	<b>39346</b>	<b>(12)</b>	<b>102533</b>	<b>(33)</b>	<b>62473</b>	<b>(20)</b>	<b>15874</b>	<b>(5)</b>	<b>84044</b>	<b>(27)</b>	<b>315115</b>
<b>Total European Region</b>	<b>4275</b>	<b>(1)</b>	<b>10507</b>	<b>(3)</b>	<b>50807</b>	<b>(13)</b>	<b>131628</b>	<b>(32)</b>	<b>90955</b>	<b>(22)</b>	<b>33348</b>	<b>(8)</b>	<b>84102</b>	<b>(21)</b>	<b>405622</b>

<sup>a</sup> Excluding native cases < 26 years old whose parents were born outside Denmark

Table 5: Tuberculosis cases of foreign origin, by age group, Europe, 2007

Geographical area	Foreign origin								Foreign origin						Total
	0-4		5-14		15-24		25-44		45-64		>64		Unknown		
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
<b>EU</b>															
Austria	7	(2)	6	(2)	63	(20)	149	(47)	68	(21)	26	(8)	0	(0)	319
Belgium	10	(2)	6	(1)	86	(18)	276	(57)	76	(16)	33	(7)	0	(0)	487
Bulgaria	1	(20)	0	(0)	0	(0)	3	(60)	1	(20)	0	(0)	0	(0)	5
Cyprus	0	(0)	0	(0)	9	(29)	18	(58)	2	(6)	0	(0)	2	(6)	31
Czech Republic	0	(0)	0	(0)	21	(14)	81	(53)	37	(24)	14	(9)	0	(0)	153
Denmark <sup>a</sup>	8	(3)	14	(6)	47	(20)	108	(45)	46	(19)	18	(7)	0	(0)	241
Estonia	0	(0)	0	(0)	0	(0)	13	(17)	50	(65)	14	(18)	0	(0)	77
Finland	0	(0)	2	(3)	14	(24)	37	(63)	3	(5)	3	(5)	0	(0)	59
France	30	(1)	84	(3)	320	(13)	1144	(46)	587	(23)	340	(14)	0	(0)	2505
Germany	14	(1)	38	(2)	276	(13)	925	(44)	532	(25)	304	(15)	0	(0)	2089
Greece	6	(3)	12	(5)	50	(23)	106	(48)	33	(15)	8	(4)	4	(2)	219
Hungary	0	(0)	1	(1)	5	(6)	34	(40)	26	(31)	18	(21)	0	(0)	84
Ireland	3	(2)	5	(3)	33	(18)	120	(66)	14	(8)	6	(3)	0	(0)	181
Italy	3	(0)	37	(2)	349	(18)	1190	(63)	278	(15)	36	(2)	11	(1)	1904
Latvia	0	(0)	0	(0)	1	(2)	16	(24)	32	(48)	17	(26)	0	(0)	66
Lithuania	0	(0)	0	(0)	1	(1)	16	(21)	40	(53)	19	(25)	0	(0)	76
Luxembourg	0	(0)	1	(4)	1	(4)	14	(58)	6	(25)	2	(8)	0	(0)	24
Malta	1	(4)	1	(4)	10	(42)	10	(42)	1	(4)	1	(4)	0	(0)	24
Netherlands	2	(0)	6	(1)	104	(17)	281	(47)	135	(23)	69	(12)	0	(0)	597
Poland	2	(4)	3	(5)	9	(16)	34	(62)	7	(13)	0	(0)	0	(0)	55
Portugal	3	(1)	12	(3)	38	(9)	262	(62)	96	(23)	13	(3)	0	(0)	424
Romania	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Slovakia	0	(0)	0	(0)	4	(33)	7	(58)	0	(0)	1	(8)	0	(0)	12
Slovenia	0	(0)	0	(0)	1	(3)	16	(42)	16	(42)	5	(13)	0	(0)	38
Spain	36	(2)	74	(4)	399	(20)	1244	(61)	225	(11)	46	(2)	5	(0)	2029
Sweden	3	(1)	15	(4)	62	(16)	204	(54)	57	(15)	40	(10)	0	(0)	381
United Kingdom	16	(0)	130	(2)	834	(15)	2972	(54)	950	(17)	552	(10)	0	(0)	5454
<b>Subtotal EU countries</b>	<b>145</b>	<b>(1)</b>	<b>447</b>	<b>(3)</b>	<b>2737</b>	<b>(16)</b>	<b>9280</b>	<b>(53)</b>	<b>3318</b>	<b>(19)</b>	<b>1585</b>	<b>(9)</b>	<b>22</b>	<b>(0)</b>	<b>17534</b>
<b>EEA</b>															
Iceland	0	(0)	0	(0)	1	(11)	8	(89)	0	(0)	0	(0)	0	(0)	9
Liechtenstein	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0
Norway	3	(1)	13	(5)	57	(23)	138	(57)	24	(10)	8	(3)	0	(0)	243
<b>Subtotal EEA countries</b>	<b>3</b>	<b>(1)</b>	<b>13</b>	<b>(5)</b>	<b>58</b>	<b>(23)</b>	<b>146</b>	<b>(58)</b>	<b>24</b>	<b>(10)</b>	<b>8</b>	<b>(3)</b>	<b>0</b>	<b>(0)</b>	<b>252</b>
<b>Total EU/EEA countries</b>	<b>148</b>	<b>(1)</b>	<b>460</b>	<b>(3)</b>	<b>2795</b>	<b>(16)</b>	<b>9426</b>	<b>(53)</b>	<b>3342</b>	<b>(19)</b>	<b>1593</b>	<b>(9)</b>	<b>22</b>	<b>(0)</b>	<b>17786</b>
<b>West, non-EU</b>															
Andorra	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1
Israel	5	(1)	6	(2)	22	(7)	130	(39)	79	(23)	85	(25)	0	(0)	337
Monaco	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	10	(4)	3	(1)	63	(24)	132	(50)	33	(13)	22	(8)	0	(0)	263
<b>Subtotal West, non-EU</b>	<b>15</b>	<b>(2)</b>	<b>9</b>	<b>(1)</b>	<b>85</b>	<b>(14)</b>	<b>262</b>	<b>(44)</b>	<b>112</b>	<b>(19)</b>	<b>107</b>	<b>(18)</b>	<b>0</b>	<b>(0)</b>	<b>601</b>
<b>Total EU/EEA &amp; West</b>	<b>163</b>	<b>(1)</b>	<b>469</b>	<b>(3)</b>	<b>2880</b>	<b>(16)</b>	<b>9688</b>	<b>(53)</b>	<b>3454</b>	<b>(19)</b>	<b>1700</b>	<b>(9)</b>	<b>22</b>	<b>(0)</b>	<b>18387</b>
<b>Balkans</b>															
Albania	0	(0)	1	(25)	0	(0)	1	(25)	1	(25)	1	(25)	0	(0)	4
Bosnia and Herzegovina	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	1
Croatia	0	(0)	0	(0)	14	(10)	29	(21)	32	(23)	64	(46)	0	(0)	139
Montenegro	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(100)	1
Serbia	0	(0)	0	(0)	0	(0)	3	(23)	5	(38)	5	(38)	0	(0)	13
The former Yugoslav Republic of Macedonia	1	(4)	2	(7)	3	(11)	5	(19)	9	(33)	7	(26)	0	(0)	27
Turkey	0	(0)	0	(0)	49	(35)	65	(47)	17	(12)	8	(6)	0	(0)	139
<b>Total Balkans</b>	<b>1</b>	<b>(0)</b>	<b>3</b>	<b>(1)</b>	<b>67</b>	<b>(21)</b>	<b>103</b>	<b>(32)</b>	<b>64</b>	<b>(20)</b>	<b>85</b>	<b>(26)</b>	<b>1</b>	<b>(0)</b>	<b>324</b>
<b>East</b>															
Armenia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova (the)	0	(0)	0	(0)	5	(25)	13	(65)	2	(10)	0	(0)	0	(0)	20
Russian Federation (the)	15	(1)	29	(1)	260	(12)	1190	(56)	605	(28)	24	(1)	0	(0)	2123
Tajikistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	0	(0)	0	(0)	1	(20)	3	(60)	1	(20)	0	(0)	0	(0)	5
<b>Total East</b>	<b>15</b>	<b>(1)</b>	<b>29</b>	<b>(1)</b>	<b>266</b>	<b>(12)</b>	<b>1206</b>	<b>(56)</b>	<b>608</b>	<b>(28)</b>	<b>24</b>	<b>(1)</b>	<b>0</b>	<b>(0)</b>	<b>2148</b>
<b>Total European Region</b>	<b>179</b>	<b>(1)</b>	<b>501</b>	<b>(2)</b>	<b>3213</b>	<b>(15)</b>	<b>10997</b>	<b>(53)</b>	<b>4126</b>	<b>(20)</b>	<b>1809</b>	<b>(9)</b>	<b>23</b>	<b>(0)</b>	<b>20859</b>

<sup>a</sup> Including native cases < 26 years old whose parents were born outside Denmark



**Table 6: Tuberculosis cases of foreign origin by area of origin, EU & West and Balkans<sup>a</sup>, 2007**

Geographical area	Criterion	Area of origin												Total
		WHO European Region						Rest of Asia		Africa		Other / unknown <sup>b</sup>		
		EU & West		Balkans		East		N	(%)	N	(%)	N	(%)	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)		
<b>EU</b>														
Austria	citizenship	38	(12)	123	(39)	57	(18)	48	(15)	46	(14)	7	(2)	319
Belgium	citizenship	66	(14)	30	(6)	31	(6)	91	(19)	251	(52)	14	(3)	483
Bulgaria	birthplace	2	(40)	1	(20)	0	(0)	2	(40)	0	(0)	0	(0)	5
Cyprus	birthplace	4	(13)	0	(0)	4	(13)	18	(58)	4	(13)	1	(3)	31
Czech Republic	birthplace	53	(35)	4	(2)	36	(24)	57	(38)	2	(1)	1	(1)	153
Denmark	birthplace	11	(5)	20	(8)	2	(1)	109	(46)	67	(28)	28	(12)	237
Estonia	birthplace	9	(12)	0	(0)	68	(88)	0	(0)	0	(0)	0	(0)	77
Finland	citizenship	4	(7)	0	(0)	7	(12)	24	(42)	22	(39)	0	(0)	57
Germany	birthplace	286	(14)	397	(20)	410	(21)	508	(26)	334	(17)	49	(2)	1984
Greece	citizenship	30	(14)	35	(16)	50	(23)	64	(29)	11	(5)	28	(13)	218
Hungary	birthplace	33	(39)	3	(4)	2	(2)	8	(10)	2	(2)	36	(43)	84
Ireland	birthplace	35	(19)	1	(1)	3	(2)	79	(44)	50	(28)	13	(7)	181
Italy	birthplace	548	(29)	42	(2)	70	(4)	397	(21)	516	(27)	318	(17)	1891
Latvia	birthplace	2	(3)	0	(0)	62	(94)	1	(2)	0	(0)	1	(2)	66
Lithuania	birthplace	4	(5)	0	(0)	70	(92)	1	(1)	0	(0)	1	(1)	76
Luxembourg	birthplace	16	(70)	1	(4)	2	(9)	1	(4)	2	(9)	1	(4)	23
Malta	birthplace	2	(8)	1	(4)	0	(0)	1	(4)	20	(83)	0	(0)	24
Netherlands	birthplace	20	(3)	49	(8)	8	(1)	186	(31)	264	(44)	67	(11)	594
Poland	citizenship	2	(4)	3	(5)	27	(49)	18	(33)	4	(7)	1	(2)	55
Portugal	birthplace	37	(9)	0	(0)	24	(6)	15	(4)	287	(68)	59	(14)	422
Slovakia	birthplace	0	(0)	2	(17)	3	(25)	5	(42)	0	(0)	2	(17)	12
Slovenia	birthplace	1	(3)	36	(95)	0	(0)	0	(0)	1	(3)	0	(0)	38
Spain	birthplace	0	(0)	0	(0)	0	(0)	0	(0)	9	(0)	2020	(100)	2029
Sweden	birthplace	23	(6)	17	(5)	11	(3)	115	(31)	191	(52)	10	(3)	367
United Kingdom	birthplace	215	(4)	38	(1)	16	(0)	3 038	(56)	1 776	(33)	370	(7)	5 453
<b>Subtotal EU countries</b>		<b>1 441</b>	<b>(10)</b>	<b>803</b>	<b>(5)</b>	<b>963</b>	<b>(6)</b>	<b>4 786</b>	<b>(32)</b>	<b>3 859</b>	<b>(26)</b>	<b>3 027</b>	<b>(20)</b>	<b>14 879</b>
<b>EEA</b>														
Iceland	birthplace	2	(22)	2	(22)	1	(11)	3	(33)	1	(11)	0	(0)	9
Norway	birthplace	5	(2)	2	(1)	12	(5)	94	(39)	127	(52)	2	(1)	242
<b>Subtotal EEA countries</b>		<b>7</b>	<b>(3)</b>	<b>4</b>	<b>(2)</b>	<b>13</b>	<b>(5)</b>	<b>97</b>	<b>(39)</b>	<b>128</b>	<b>(51)</b>	<b>2</b>	<b>(1)</b>	<b>251</b>
<b>Total EU/EEA countries</b>		<b>1 448</b>	<b>(10)</b>	<b>807</b>	<b>(5)</b>	<b>976</b>	<b>(6)</b>	<b>4 883</b>	<b>(32)</b>	<b>3 987</b>	<b>(26)</b>	<b>3 029</b>	<b>(20)</b>	<b>15 130</b>

<sup>a</sup> Countries with case-based data by country of origin<sup>b</sup> Of these, 653 cases were from the Americas, Australasia and Oceania

**Table 7: Tuberculosis cases by geographical origin, EU & West<sup>a</sup>, 2001–2007****A) National origin**

Geographical area	Criterion	National origin						
		2001	2002	2003	2004	2005	2006	2007
<b>EU</b>								
Austria	citizenship	804	770	640	624	564	540	555
Belgium	citizenship	714	637	512	564	536	552	541
Bulgaria	birthplace	0	3335	3263	3232	3302	3232	3050
Cyprus	birthplace	15	13	13	7	12	9	11
Czech Republic	birthplace	1157	1036	1036	908	877	843	718
Denmark	birthplace <sup>b</sup>	174	154	158	148	166	160	150
Estonia	birthplace	630	573	493	454	435	382	410
Finland	citizenship	427	422	359	287	308	244	254
France	birthplace	2870	2657	2815	2668	2607	2830	2790
Germany	birthplace	3781	4140	3851	3421	3174	2930	3288
Greece	citizenship	513	444	458	587	493	453	425
Hungary	birthplace	3077	2781	2509	2268	1857	1799	1668
Ireland	birthplace	328	270	300	290	297	288	277
Italy	birthplace	3063	2890	2846	2520	2285	2320	2656
Latvia	birthplace	1931	1713	1605	1465	1333	1232	1178
Lithuania	birthplace	2815	2711	2693	2427	2486	2486	2399
Luxembourg	birthplace	9	19	13	6	9	11	13
Malta	birthplace	13	15	3	7	8	13	15
Netherlands	birthplace	545	539	570	614	372	357	359
Portugal	birthplace	3903	3928	3641	3392	3127	3036	2696
Romania	birthplace	30436	33588	31039	31032	29287	27319	25491
Slovakia	birthplace	1063	1041	967	690	733	719	670
Slovenia	birthplace	287	273	250	209	230	181	180
Sweden	birthplace	142	114	103	115	149	140	110
United Kingdom	birthplace	2368	1999	2011	2157	2142	2137	2165
<b>Subtotal EU countries</b>		<b>61065</b>	<b>66062</b>	<b>62148</b>	<b>60092</b>	<b>56789</b>	<b>54213</b>	<b>52069</b>
<b>EEA</b>								
Iceland	birthplace	6	5	2	4	4	3	5
Norway	birthplace	82	60	70	63	63	56	64
<b>Subtotal EEA countries</b>		<b>88</b>	<b>65</b>	<b>72</b>	<b>67</b>	<b>67</b>	<b>59</b>	<b>69</b>
<b>Total EU/EEA countries</b>		<b>61153</b>	<b>66127</b>	<b>62220</b>	<b>60159</b>	<b>56856</b>	<b>54272</b>	<b>52138</b>
<b>West, non-EU</b>								
Andorra	citizenship	5	3	1	0	2	0	5
Israel	birthplace	87	79	94	99	74	70	60
Switzerland	citizenship	192	189	167	153	154	80	177
<b>Subtotal West, non-EU</b>		<b>284</b>	<b>271</b>	<b>262</b>	<b>252</b>	<b>230</b>	<b>150</b>	<b>242</b>
<b>Total EU/EEA &amp; West</b>		<b>61437</b>	<b>66398</b>	<b>62482</b>	<b>60411</b>	<b>57086</b>	<b>54422</b>	<b>52380</b>

<sup>a</sup> Countries with at least 80% of cases with information on origin in all years and data for four consecutive years or more

<sup>b</sup> By birthplace of parents for Danish-born cases under 26 years of age

## B) Foreign origin

Geographical area	Criterion	Foreign origin						
		2001	2002	2003	2004	2005	2006	2007
<b>EU</b>								
Austria	citizenship	271	306	340	437	435	333	319
Belgium	citizenship	604	657	605	634	571	575	487
Bulgaria	birthplace	0	0	0	0	0	0	2
Cyprus	birthplace	25	7	22	23	25	28	31
Czech Republic	birthplace	193	164	126	149	130	130	153
Denmark	birthplace <sup>a</sup>	334	265	235	237	256	216	241
Estonia	birthplace	182	140	130	138	83	70	77
Finland	citizenship	58	43	38	29	37	37	59
France	birthplace	2305	2564	2572	2488	2433	2308	2505
Germany	birthplace	2741	2991	3014	2884	2637	2237	1633
Greece	citizenship	104	111	155	180	219	215	219
Hungary	birthplace	57	47	51	44	62	42	84
Ireland	birthplace	65	123	89	129	152	151	181
Italy	birthplace	1391	1293	1459	1664	1809	2026	1565
Latvia	birthplace	122	115	93	119	84	69	66
Lithuania	birthplace	174	133	128	87	88	73	9
Luxembourg	birthplace	9	13	36	25	25	20	24
Malta	birthplace	3	9	4	12	17	17	23
Netherlands	birthplace	881	854	749	721	764	642	597
Portugal	birthplace	491	567	503	455	420	387	424
Romania	birthplace	4	7	0	2	2	0	0
Slovakia	birthplace	13	12	16	15	27	11	12
Slovenia	birthplace	84	77	43	54	48	34	38
Sweden	birthplace	286	293	305	343	410	357	381
United Kingdom	birthplace	3610	4084	4497	4782	5393	5430	5454
<b>Subtotal EU countries</b>		<b>14007</b>	<b>14875</b>	<b>15210</b>	<b>15651</b>	<b>16127</b>	<b>15408</b>	<b>14584</b>
<b>EEA</b>								
Iceland	birthplace	7	3	3	8	7	10	9
Norway	birthplace	206	191	267	239	225	238	243
<b>Subtotal EEA countries</b>		<b>213</b>	<b>194</b>	<b>270</b>	<b>247</b>	<b>232</b>	<b>248</b>	<b>252</b>
<b>Total EU/EEA countries</b>		<b>14220</b>	<b>15069</b>	<b>15480</b>	<b>15898</b>	<b>16359</b>	<b>15656</b>	<b>14836</b>
<b>West, non-EU</b>								
Andorra	citizenship	0	2	10	6	8	13	1
Israel	birthplace	477	432	435	420	332	316	337
Switzerland	citizenship	338	399	373	338	341	308	263
<b>Subtotal West, non-EU</b>		<b>815</b>	<b>833</b>	<b>818</b>	<b>764</b>	<b>681</b>	<b>637</b>	<b>601</b>
<b>Total EU/EEA &amp; West</b>		<b>15035</b>	<b>15902</b>	<b>16298</b>	<b>16662</b>	<b>17040</b>	<b>16293</b>	<b>15437</b>

<sup>a</sup> By birthplace of parents for Danish-born cases under 26 years of age

Table 8: Tuberculosis cases by site of disease, Europe, 2007

Geographical area	Pulmonary						Extrapulmonary only		No site reported		Total
	Pulmonary only		Pulmonary+ extrapulmonary		Total Pulmonary						
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
<b>EU</b>											
Austria	644	(74)	86	(10)	730	(84)	144	(16)	0	(0)	874
Belgium	646	(63)	99	(10)	745	(72)	283	(28)	0	(0)	1028
Bulgaria	2214	(73)	142	(5)	2356	(77)	696	(23)	0	(0)	3052
Cyprus	32	(76)	4	(10)	36	(86)	6	(14)	0	(0)	42
Czech Republic	704	(81)	40	(5)	744	(85)	127	(15)	0	(0)	871
Denmark	272	(70)	28	(7)	300	(77)	91	(23)	0	(0)	391
Estonia	429	(88)	24	(5)	453	(93)	34	(7)	0	(0)	487
Finland	207	(66)	0	(0)	207	(66)	106	(34)	0	(0)	313
France	3337	(60)	755	(14)	4092	(73)	1359	(24)	137	(2)	5588
Germany	3503	(70)	429	(9)	3932	(78)	1040	(21)	48	(1)	5020
Greece	482	(73)	67	(10)	549	(83)	88	(13)	22	(3)	659
Hungary	1640	(94)	14	(1)	1654	(94)	98	(6)	0	(0)	1752
Ireland	317	(66)	30	(6)	347	(73)	121	(25)	10	(2)	478
Italy	3381	(75)	57	(1)	3438	(76)	1029	(23)	60	(1)	4527
Latvia	1066	(85)	48	(4)	1114	(89)	141	(11)	0	(0)	1255
Lithuania	2128	(88)	0	(0)	2128	(88)	280	(12)	0	(0)	2408
Luxembourg	35	(90)	0	(0)	35	(90)	4	(10)	0	(0)	39
Malta	25	(66)	2	(5)	27	(71)	11	(29)	0	(0)	38
Netherlands	482	(50)	95	(10)	577	(60)	383	(40)	0	(0)	960
Poland	7933	(92)	55	(1)	7988	(93)	628	(7)	0	(0)	8616
Portugal	2108	(67)	226	(7)	2334	(75)	789	(25)	4	(0)	3127
Romania	20659	(81)	1356	(5)	22015	(86)	3476	(14)	0	(0)	25491
Slovakia	506	(74)	42	(6)	548	(80)	134	(20)	0	(0)	682
Slovenia	149	(68)	29	(13)	178	(82)	38	(17)	2	(1)	218
Spain <sup>a</sup>	-	-	-	-	6266	(81)	1501	(19)	0	(0)	7767
Sweden	247	(50)	63	(13)	310	(63)	181	(37)	0	(0)	491
United Kingdom <sup>a</sup>	-	-	-	-	4633	(55)	3654	(43)	130	(2)	8417
<b>Subtotal EU countries</b>	<b>53146</b>	<b>(63)</b>	<b>3691</b>	<b>(4)</b>	<b>67736</b>	<b>(80)</b>	<b>16442</b>	<b>(19)</b>	<b>413</b>	<b>(0)</b>	<b>84591</b>
<b>EEA</b>											
Iceland	8	(57)	1	(7)	9	(64)	5	(36)	0	(0)	14
Liechtenstein	4	(80)	0	(0)	4	(80)	1	(20)	0	(0)	5
Norway	162	(53)	19	(6)	181	(59)	125	(41)	1	(0)	307
<b>Subtotal EEA countries</b>	<b>174</b>	<b>(53)</b>	<b>20</b>	<b>(6)</b>	<b>194</b>	<b>(60)</b>	<b>131</b>	<b>(40)</b>	<b>1</b>	<b>(0)</b>	<b>326</b>
<b>Total EU/EEA countries</b>	<b>53320</b>	<b>(63)</b>	<b>3711</b>	<b>(4)</b>	<b>67930</b>	<b>(80)</b>	<b>16573</b>	<b>(20)</b>	<b>414</b>	<b>(0)</b>	<b>84917</b>
<b>West, non-EU<sup>a</sup></b>											
Andorra	-	-	-	-	3	(50)	3	(50)	0	(0)	6
Israel	-	-	-	-	317	(80)	80	(20)	0	(0)	397
Monaco	-	-	-	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-	-	-	-
Switzerland	-	-	-	-	420	(88)	58	(12)	0	(0)	478
<b>Subtotal West, non-EU</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>740</b>	<b>(84)</b>	<b>141</b>	<b>(16)</b>	<b>0</b>	<b>(0)</b>	<b>881</b>
<b>Total EU/EEA &amp; West</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>68670</b>	<b>(80)</b>	<b>16714</b>	<b>(19)</b>	<b>414</b>	<b>(0)</b>	<b>85798</b>
<b>Balkans<sup>a</sup></b>											
Albania	-	-	-	-	292	(65)	155	(35)	0	(0)	447
Bosnia and Herzegovina	-	-	-	-	2167	(90)	233	(10)	0	(0)	2400
Croatia	-	-	-	-	873	(89)	109	(11)	0	(0)	982
Montenegro	-	-	-	-	139	(87)	20	(13)	0	(0)	159
Serbia	-	-	-	-	1809	(88)	242	(12)	0	(0)	2051
The former Yugoslav Republic of Macedonia	-	-	-	-	439	(78)	124	(22)	0	(0)	563
Turkey	-	-	-	-	13690	(70)	6004	(30)	0	(0)	19694
<b>Total Balkans</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>19409</b>	<b>(74)</b>	<b>6887</b>	<b>(26)</b>	<b>0</b>	<b>(0)</b>	<b>26296</b>
<b>East<sup>a</sup></b>											
Armenia	-	-	-	-	1730	(81)	399	(19)	0	(0)	2129
Azerbaijan	-	-	-	-	6597	(90)	750	(10)	0	(0)	7347
Belarus	-	-	-	-	5398	(94)	358	(6)	0	(0)	5756
Georgia	-	-	-	-	4548	(77)	1362	(23)	2	(0)	5912
Kazakhstan	-	-	-	-	36003	(89)	4276	(11)	0	(0)	40279
Kyrgyzstan	-	-	-	-	4980	(74)	1727	(26)	0	(0)	6707
Republic of Moldova (the)	-	-	-	-	5798	(91)	569	(9)	0	(0)	6367
Russian Federation (the)	-	-	-	-	202494	(94)	12430	(6)	0	(0)	214924
Tajikistan	-	-	-	-	6348	(79)	1733	(21)	0	(0)	8081
Turkmenistan	-	-	-	-	3013	(81)	685	(19)	0	(0)	3698
Ukraine	-	-	-	-	37035	(91)	3608	(9)	0	(0)	40643
Uzbekistan	-	-	-	-	17899	(77)	5491	(23)	0	(0)	23390
<b>Total East</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>331843</b>	<b>(91)</b>	<b>33388</b>	<b>(9)</b>	<b>2</b>	<b>(0)</b>	<b>365233</b>
<b>Total European Region</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>419922</b>	<b>(88)</b>	<b>56989</b>	<b>(12)</b>	<b>416</b>	<b>(0)</b>	<b>477327</b>

<sup>a</sup> Reporting does not distinguish cases with pulmonary site alone from cases with both pulmonary and extrapulmonary disease

Table 9: Extrapulmonary tuberculosis cases and pulmonary-to-extrapulmonary ratio, Europe, 2001–2007<sup>a</sup>

Geographical area	2001		2003		2005		2007	
	Extrapulmonary cases	P:E ratio <sup>b</sup>	Extrapulmonary cases	P:E ratio <sup>b</sup>	Extrapulmonary cases	P:E ratio <sup>b</sup>	Extrapulmonary cases	P:E ratio <sup>b</sup>
<b>EU</b>								
Austria	204	4.3	159	5.2	188	4.3	144	5.1
Belgium	343	2.8	280	3.0	306	2.6	283	2.6
Bulgaria	-	-	-	-	-	-	696	3.4
Cyprus	0	-	6	4.8	13	1.8	6	6.0
Czech Republic	288	3.7	251	3.6	200	4.0	127	5.9
Denmark	165	2.1	107	2.7	128	2.3	91	3.3
Estonia	92	7.8	66	8.4	51	9.2	34	13.3
Finland	178	1.8	120	2.4	97	2.7	106	2.0
France	1634	2.9	1622	2.7	1458	2.6	1359	3.0
Germany	-	-	1390	4.0	1273	3.6	1040	3.8
Greece	71	7.7	87	6.1	-	-	88	6.2
Hungary	217	13.5	179	13.4	126	14.6	98	16.9
Ireland	-	-	102	2.9	129	2.5	121	2.9
Italy	1227	2.7	1159	2.9	1119	2.7	1029	3.3
Latvia	326	5.4	183	8.4	148	8.8	141	7.9
Lithuania	509	4.9	429	5.6	363	6.1	280	7.6
Luxembourg	7	3.6	3	17.0	3	11.3	4	8.8
Malta	1	15.0	3	1.3	0	0.0	11	2.5
Netherlands	486	2.0	453	1.9	400	1.9	383	1.5
Poland	-	-	913	10.1	821	10.3	628	12.7
Portugal	1209	2.6	1124	2.7	970	2.7	789	3.0
Romania	4022	6.6	4080	6.6	3757	6.8	3476	6.3
Slovakia	197	4.5	206	3.8	141	4.4	134	4.1
Slovenia	65	4.7	44	5.7	33	7.4	38	4.7
Spain	-	-	-	-	979	7.0	1501	4.2
Sweden	149	1.9	152	1.7	207	1.7	181	1.7
United Kingdom	-	-	2973	1.4	3647	1.3	3654	1.3
<b>Subtotal EU countries</b>	<b>11390</b>	<b>4.6</b>	<b>16091</b>	<b>4.3</b>	<b>16557</b>	<b>4.3</b>	<b>16442</b>	<b>4.1</b>
<b>EEA</b>								
Iceland	5	1.6	2	1.5	6	0.8	5	1.8
Liechtenstein	-	-	-	-	-	-	1	4.0
Norway	84	2.4	125	1.7	106	1.7	125	1.4
<b>Subtotal EEA countries</b>	<b>89</b>	<b>2.4</b>	<b>127</b>	<b>1.7</b>	<b>112</b>	<b>1.6</b>	<b>131</b>	<b>1.5</b>
<b>Total EU/EEA countries</b>	<b>11479</b>	<b>4.6</b>	<b>16218</b>	<b>4.3</b>	<b>16669</b>	<b>4.2</b>	<b>16573</b>	<b>4.1</b>
<b>West, non-EU</b>								
Andorra	1	4.0	2	4.5	4	1.5	3	1.0
Israel	136	3.1	110	3.8	98	3.1	80	4.0
Monaco	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-
Switzerland	156	2.9	158	2.9	168	2.4	58	7.2
<b>Subtotal West, non-EU</b>	<b>293</b>	<b>3.0</b>	<b>270</b>	<b>3.3</b>	<b>270</b>	<b>2.6</b>	<b>141</b>	<b>5.2</b>
<b>Total EU/EEA &amp; West</b>	<b>11772</b>	<b>4.5</b>	<b>16488</b>	<b>4.3</b>	<b>16939</b>	<b>4.2</b>	<b>16714</b>	<b>4.1</b>
<b>Balkans</b>								
Albania	217	1.6	199	1.8	180	2.0	155	1.9
Bosnia and Herzegovina	298	7.6	223	7.0	264	7.2	233	9.3
Croatia	163	8.2	169	7.8	108	9.6	20	7.0
Montenegro	-	-	-	-	13	12.1	20	7.0
Serbia	-	-	-	-	260	8.1	242	7.5
The former Yugoslav Republic of Macedonia	141	3.9	168	3.1	147	3.5	124	3.5
Turkey	-	-	-	-	5548	2.7	6004	2.3
<b>Total Balkans</b>	<b>819</b>	<b>5.5</b>	<b>759</b>	<b>5.0</b>	<b>6520</b>	<b>3.2</b>	<b>6798</b>	<b>2.7</b>
<b>East</b>								
Armenia	157	7.9	263	5.0	365	5.4	399	4.3
Azerbaijan	956	4.1	735	4.3	651	11.2	750	8.8
Belarus	-	-	-	-	-	-	358	15.1
Georgia	1172	4.0	1333	3.5	1370	3.7	1362	3.3
Kazakhstan	-	-	1182	26.2	1167	25.7	4276	8.4
Kyrgyzstan	-	-	2149	2.3	1805	2.7	1727	2.9
Republic of Moldova (the)	655	4.8	687	6.3	614	9.2	569	10.2
Russian Federation (the)	-	-	4934	29.9	-	-	12430	16.3
Tajikistan	381	8.2	-	-	1424	4.0	1733	3.7
Turkmenistan	951	4.2	976	3.9	656	4.0	685	4.4
Ukraine	-	-	0	-	-	-	3608	10.3
Uzbekistan	-	-	2260	10.6	6873	3.2	5491	3.3
<b>Total East</b>	<b>4272</b>	<b>4.7</b>	<b>14519</b>	<b>15.5</b>	<b>14925</b>	<b>5.7</b>	<b>33388</b>	<b>9.9</b>
<b>Total European Region</b>	<b>16863</b>	<b>4.6</b>	<b>31766</b>	<b>9.4</b>	<b>38384</b>	<b>4.6</b>	<b>56900</b>	<b>7.4</b>

<sup>a</sup> Data not included if site of disease was reported for less than 97% of cases notified or if respiratory classification of disease was used<sup>b</sup> Pulmonary cases may include patients having concomitant extrapulmonary disease (for 2007 data see also Table 8)

**Table 10: TB meningitis or disseminated TB, paediatric and adult cases by origin, EU/EFTA/EEA<sup>a</sup>, 2007**

Geographical area	Origin								
	National			Foreign			Total <sup>b</sup>		
	0-14	>14	Total	0-14	>14	Total	N <sup>b</sup>	% of all TB cases	/ 100 000 population
<b>EU</b>									
Austria	0	10	10	1	4	5	15	1.7%	0.2
Belgium	5	27	32	2	27	29	61	5.9%	0.6
Bulgaria	3	25	28	0	0	0	28	0.9%	0.4
Cyprus	0	0	0	0	0	0	0	0.0%	0.0
Czech Republic	1	18	19	0	2	2	21	2.4%	0.2
Denmark	0	0	0	1	6	7	7	1.8%	0.1
Estonia	0	5	5	0	0	0	5	1.0%	0.4
Germany	3	46	49	2	47	49	103	2.1%	0.1
Greece	2	10	12	0	3	3	16	2.4%	0.1
Hungary	0	11	11	0	2	2	13	0.7%	0.1
Ireland	0	9	9	0	1	1	10	2.1%	0.2
Italy	3	29	32	1	31	32	67	1.5%	0.1
Latvia	1	6	7	0	0	0	7	0.6%	0.3
Lithuania	1	0	1	0	0	0	1	0.0%	0.0
Luxembourg	0	0	0	0	0	0	0	0.0%	0.0
Malta	0	1	1	0	0	0	1	2.6%	0.2
Poland	0	18	18	0	0	0	18	0.2%	0.0
Portugal	2	81	83	0	25	25	108	3.5%	1.0
Romania	57	291	348	0	0	0	348	1.4%	1.6
Slovakia	1	3	4	0	0	0	4	0.6%	0.1
Slovenia	0	4	4	0	1	1	5	2.3%	0.2
<b>Subtotal EU countries</b>	<b>79</b>	<b>594</b>	<b>673</b>	<b>7</b>	<b>149</b>	<b>156</b>	<b>838</b>	<b>1.0%</b>	<b>0.2</b>
<b>EEA</b>									
Iceland	0	0	0	0	0	0	0	0.0%	0.0
Liechtenstein	0	0	0	0	0	0	0	0.0%	0.0
Norway	0	4	4	1	4	5	9	2.9%	0.2
<b>Subtotal EEA countries</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>1.1%</b>	<b>0.2</b>
<b>Total EU/EEA countries</b>	<b>79</b>	<b>598</b>	<b>677</b>	<b>8</b>	<b>153</b>	<b>161</b>	<b>847</b>	<b>1.0%</b>	<b>0.2</b>

<sup>a</sup> Including only data from countries reporting case-based information on localisation of extrapulmonary disease

<sup>b</sup> Including cases with origin unknown

**Table 11: TB meningitis, total cases at all ages and cases & rates in children under five years of age, EU & West and Balkans<sup>a</sup>, 2003–2007**

Geographical area	2003			2004			2005			2006			2007		
	All ages	Under 5 years		All ages	Under 5 years		All ages	Under 5 years		All ages	Under 5 years		All ages	Under 5 years	
	N	N	/10 million pop. <sup>b</sup>	N	N	/10 million pop. <sup>b</sup>	N	N	/10 million pop. <sup>b</sup>	N	N	/10 million pop. <sup>b</sup>	N	N	/10 million pop. <sup>b</sup>
<b>EU</b>															
Austria	4	0	0.0	4	0	0.0	2	0	0.0	15	2	2.4	6	1	1.2
Belgium	13	0	0.0	13	1	1.0	10	2	1.9	10	1	0.9	9	0	0.0
Bulgaria	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	6	1	1.3
Cyprus	0	0	0.0	0	0	0.0	0	0	0.0	1	0	0.0	0	0	0.0
Czech Republic	2	0	0.0	0	0	0.0	2	0	0.0	1	0	0.0	2	0	0.0
Denmark	0	0	0.0	0	0	0.0	0	0	0.0	5	0	0.0	1	0	0.0
Estonia	0	0	0.0	0	0	0.0	2	0	0.0	3	0	0.0	2	0	0.0
Germany	72	7	0.8	60	4	0.5	50	5	0.6	56	6	0.7	52	1	0.1
Greece	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	6	2	1.8
Hungary	0	0	0.0	1	0	0.0	1	0	0.0	3	0	0.0	2	0	0.0
Ireland	8	2	5.0	6	0	0.0	9	0	0.0	6	1	2.3	7	0	0.0
Italy	19	1	0.2	3	0	0.0	31	2	0.3	33	3	0.5	29	2	0.3
Latvia	0	0	0.0	4	0	0.0	4	0	0.0	3	0	0.0	4	1	4.4
Lithuania	2	2	5.8	5	0	0.0	4	0	0.0	4	1	2.9	1	1	3.0
Malta	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	1	0	0.0
Poland	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	12	0	0.0
Portugal	37	0	0.0	30	1	1.0	45	1	0.9	34	1	0.9	29	0	0.0
Romania	205	34	15.6	194	33	15.2	185	18	8.3	193	35	16.2	145	25	11.6
Slovakia	2	1	1.9	6	0	0.0	4	0	0.0	4	0	0.0	3	1	1.9
Slovenia	3	0	0.0	3	0	0.0	2	0	0.0	2	0	0.0	2	0	0.0
<b>EEA</b>															
Iceland	0	0	0.0	1	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Norway	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	2	0	0.0
<b>West, non-EU</b>															
Andorra	0	0	0.0	1	0	0.0	0	0	0.0	0	0	0.0	-	-	-
Switzerland	0	0	0.0	0	0	0.0	0	0	0.0	7	1	1.3	-	-	-
<b>Balkans</b>															
Albania	0	0	0.0	7	0	0.0	1	0	0.0	7	0	0.0	-	-	-
Bosnia and Herzegovina	1	0	0.0 <sup>c</sup>	2	0	0.0 <sup>c</sup>	1	0	0.0	3	0	0.0	-	-	-
Croatia	2	0	0.0	4	0	0.0	3	0	0.0	6	0	0.0	-	-	-
Montenegro	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	-	-	-
Serbia	0	0	0.0	0	0	0.0	4	0	0.0	1	0	0.0	-	-	-
The former Yugoslav Republic of Macedonia	0	0	0.0	0	0	0.0	2	1	4.9	4	0	0.0	-	-	-

<sup>a</sup> Including only data from countries reporting case-based information on localisation of extrapulmonary disease; cases with disseminated disease not included (see also Table 10).

<sup>b</sup> Rate calculated for cases in children under five years of age per 10 million general population in the country

<sup>c</sup> Excluding Republika Srpska

Table 12: Pulmonary sputum smear-positive tuberculosis cases, Europe, 2005–2007

Geographical area	2005			2006			2007		
	N	% of all pulmonary cases	/ 100 000 population	N	% of all pulmonary cases	/ 100 000 population	N	% of all pulmonary cases	/ 100 000 population
<b>EU</b>									
Austria	252	(31)	3.1	217	(30)	2.6	201	(28)	2.4
Belgium	392	(49)	3.7	377	(49)	3.6	353	(47)	3.3
Bulgaria	-	-	-	-	-	-	1230	(52)	16.1
Cyprus	9	(38)	1.2	9	(29)	1.2	8	(22)	1.0
Czech Republic	328	(41)	3.2	265	(35)	2.6	286	(38)	2.8
Denmark	135	(46)	2.5	136	(50)	2.5	146	(49)	2.7
Estonia	201	(43)	14.9	187	(45)	13.9	199	(44)	14.8
Finland	135	(51)	2.6	99	(47)	1.9	91	(44)	1.7
France	2119	(56)	3.4	2091	(55)	3.3	2092	(51)	3.3
Germany	1494	(32)	1.8	1396	(33)	1.7	1305	(33)	1.6
Greece	226	(39)	2.0	240	(43)	2.2	295	(54)	2.6
Hungary	509	(28)	5.0	509	(28)	5.1	467	(28)	4.6
Ireland	145	(45)	3.5	145	(44)	3.4	151	(44)	3.5
Italy	1371	(46)	2.3	1450	(48)	2.5	1621	(47)	2.7
Latvia	673	(52)	29.3	631	(52)	27.6	606	(54)	26.6
Lithuania	1324	(60)	38.8	1379	(62)	40.6	1266	(59)	37.5
Luxembourg	14	(41)	3.0	22	(69)	4.7	0	(0)	0.0
Malta	5	(28)	1.2	4	(17)	1.0	9	(33)	2.2
Netherlands	252	(33)	1.5	213	(32)	1.3	202	(35)	1.2
Poland	3258	(39)	8.5	3310	(42)	8.7	3314	(41)	8.7
Portugal	1572	(60)	14.9	1471	(58)	13.9	1308	(56)	12.3
Romania	16170	(63)	74.7	14591	(62)	67.6	13906	(63)	64.5
Slovakia	186	(30)	3.5	193	(32)	3.6	196	(36)	3.6
Slovenia	127	(52)	6.3	85	(49)	4.2	96	(54)	4.8
Spain	2686	(39)	6.2	2129	(32)	4.8	2482	(40)	5.5
Sweden	142	(40)	1.6	110	(35)	1.2	102	(33)	1.1
United Kingdom	1866	(40)	3.1	1830	(39)	3.0	1763	(38)	2.9
<b>Subtotal EU countries</b>	<b>36 929</b>	<b>(52)</b>	<b>7.5</b>	<b>34 521</b>	<b>(51)</b>	<b>7.0</b>	<b>33 695</b>	<b>(50)</b>	<b>6.8</b>
<b>EEA</b>									
Iceland	2	(40)	0.7	4	(57)	1.3	3	(33)	1.0
Liechtenstein	0	(0)	0.0	0	(0)	0.0	4	(100)	11.3
Norway	51	(29)	1.1	51	(27)	1.1	44	(24)	0.9
<b>Subtotal EEA countries</b>	<b>53</b>	<b>(9)</b>	<b>1.1</b>	<b>55</b>	<b>(10)</b>	<b>1.1</b>	<b>51</b>	<b>(8)</b>	<b>1.0</b>
<b>Total EU/EEA countries</b>	<b>36 982</b>	<b>(52)</b>	<b>7.4</b>	<b>34 576</b>	<b>(51)</b>	<b>6.9</b>	<b>33 746</b>	<b>(49)</b>	<b>6.7</b>
<b>West, non-EU</b>									
Andorra	5	(83)	6.4	8	(80)	10.0	2	(67)	2.4
Israel	98	(32)	1.4	72	(23)	1.0	148	(47)	2.1
Monaco	-	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-	-
Switzerland	117	(29)	2.4	121	(32)	2.4	111	(26)	2.2
<b>Subtotal West, non-EU</b>	<b>220</b>	<b>(31)</b>	<b>7.0</b>	<b>201</b>	<b>(29)</b>	<b>6.4</b>	<b>261</b>	<b>(35)</b>	<b>8.3</b>
<b>Total EU/EEA &amp; West</b>	<b>37 202</b>	<b>(51)</b>	<b>7.3</b>	<b>34 777</b>	<b>(51)</b>	<b>6.8</b>	<b>34 007</b>	<b>(49)</b>	<b>6.6</b>
<b>Balkans</b>									
Albania	213	(59)	6.8	199	(62)	6.3	183	(63)	5.8
Bosnia and Herzegovina	700	(37)	18.2	598	(38)	15.6	816	(38)	21.2
Croatia	437	(42)	9.8	448	(44)	10.1	431	(49)	9.7
Montenegro	74	(47)	11.9	68	(45)	10.9	46	(33)	7.3
Serbia	1051	(50)	14.1	984	(53)	13.3	1061	(59)	14.4
The former Yugoslav Republic of Macedonia	224	(44)	11.0	216	(45)	10.6	237	(54)	11.6
Turkey	8505	(57)	11.8	9132	(62)	12.5	8797	(64)	12.5
<b>Total Balkans</b>	<b>11 204</b>	<b>(53)</b>	<b>12.0</b>	<b>11 645</b>	<b>(58)</b>	<b>12.3</b>	<b>11 571</b>	<b>(60)</b>	<b>12.6</b>
<b>East</b>									
Armenia	908	(46)	28.2	884	(50)	27.4	784	(45)	24.3
Azerbaijan	2875	(40)	34.3	2730	(40)	32.2	2433	(37)	28.4
Belarus	-	-	-	-	-	-	1305	(24)	13.5
Georgia	2597	(51)	59.5	2984	(60)	67.8	2999	(66)	68.3
Kazakhstan	12501	(42)	81.3	17936	(50)	115.8	19147	(53)	122.6
Kyrgyzstan	2526	(51)	48.2	2428	(50)	45.8	2361	(47)	44.0
Republic of Moldova (the)	2878	(51)	80.1	2737	(50)	76.3	3028	(52)	84.7
Russian Federation (the)	39278	(30)	27.4	43264	(31)	30.4	79864	(39)	56.2
Tajikistan	2534	(44)	38.5	2790	(60)	41.8	3332	(52)	49.2
Turkmenistan	1104	(42)	22.7	1334	(49)	27.1	1637	(54)	32.7
Ukraine	-	-	-	16587	(45)	35.5	13654	(37)	29.4
Uzbekistan	9262	(42)	34.6	8488	(43)	31.2	7816	(44)	28.3
<b>Total East</b>	<b>76 463</b>	<b>(35)</b>	<b>27.5</b>	<b>102 162</b>	<b>(39)</b>	<b>36.7</b>	<b>138 360</b>	<b>(42)</b>	<b>49.7</b>
<b>Total European Region</b>	<b>124 869</b>	<b>(40)</b>	<b>14.1</b>	<b>148 584</b>	<b>(42)</b>	<b>16.8</b>	<b>183 938</b>	<b>(44)</b>	<b>20.8</b>



Table 13: Tuberculosis cases by history of previous TB treatment<sup>a</sup>, Europe, 2002 & 2007

Geographical area	2002						2007					
	Never treated		Previously treated		Unknown TB history		Never treated		Previously treated		Unknown TB history	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	987	(92)	23	(2)	66	(6)	811	(93)	24	(3)	39	(4)
Belgium	952	(74)	91	(7)	251	(19)	825	(80)	78	(8)	125	(12)
Bulgaria	2962	(89)	373	(11)	0	(0)	2743	(90)	309	(10)	0	(0)
Cyprus	18	(90)	2	(10)	0	(0)	41	(98)	1	(2)	0	(0)
Czech Republic	1156	(96)	44	(4)	0	(0)	790	(91)	81	(9)	0	(0)
Denmark	386	(92)	33	(8)	0	(0)	355	(91)	36	(9)	0	(0)
Estonia	525	(74)	188	(26)	0	(0)	409	(84)	78	(16)	0	(0)
Finland	404	(85)	24	(5)	45	(10)	299	(96)	14	(4)	0	(0)
France	4315	(68)	544	(9)	1463	(23)	3849	(69)	354	(6)	1385	(25)
Germany	4771	(62)	624	(8)	2306	(30)	4021	(80)	361	(7)	638	(13)
Greece	279	(48)	29	(5)	274	(47)	542	(82)	71	(11)	46	(7)
Hungary	2363	(83)	439	(15)	36	(1)	1424	(81)	314	(18)	14	(1)
Ireland	306	(75)	35	(9)	67	(16)	326	(68)	53	(11)	99	(21)
Italy	2846	(68)	287	(7)	1079	(26)	3283	(73)	440	(10)	804	(18)
Latvia	1540	(83)	315	(17)	0	(0)	1079	(86)	176	(14)	0	(0)
Lithuania	2097	(74)	747	(26)	0	(0)	1977	(82)	426	(18)	5	(0)
Luxembourg	31	(97)	1	(3)	0	(0)	0	(0)	0	(0)	39	(100)
Malta	24	(100)	0	(0)	0	(0)	36	(95)	1	(3)	1	(3)
Netherlands	1169	(83)	69	(5)	163	(12)	916	(95)	44	(5)	0	(0)
Poland	9195	(88)	1179	(11)	101	(1)	7569	(88)	1038	(12)	9	(0)
Portugal	4019	(89)	482	(11)	0	(0)	2819	(90)	308	(10)	0	(0)
Romania	26308	(78)	7287	(22)	0	(0)	19252	(76)	6239	(24)	0	(0)
Slovakia	873	(83)	180	(17)	0	(0)	585	(86)	86	(13)	11	(2)
Slovenia	313	(89)	37	(11)	0	(0)	202	(93)	16	(7)	0	(0)
Spain	5229	(69) <sup>b</sup>	343	(4) <sup>b</sup>	2054	(27) <sup>b</sup>	6154	(79)	420	(5)	1193	(15)
Sweden	370	(91)	36	(9)	1	(0)	459	(93)	6	(1)	26	(5)
United Kingdom	4945	(68) <sup>c</sup>	514	(7) <sup>c</sup>	1804	(25) <sup>c</sup>	6121	(73)	252	(3)	2044	(24)
<b>Subtotal EU countries</b>	<b>78383</b>	<b>(77)</b>	<b>13926</b>	<b>(14)</b>	<b>9710</b>	<b>(10)</b>	<b>66887</b>	<b>(79)</b>	<b>11226</b>	<b>(13)</b>	<b>6478</b>	<b>(8)</b>
<b>EEA</b>												
Iceland	8	(100)	0	(0)	0	(0)	12	(86)	2	(14)	0	(0)
Liechtenstein	-	-	-	-	-	-	5	(100)	0	(0)	0	(0)
Norway	231	(92)	19	(8)	1	(0)	199	(65)	44	(14)	64	(21)
<b>Subtotal EEA countries</b>	<b>239</b>	<b>(92)</b>	<b>19</b>	<b>(7)</b>	<b>1</b>	<b>(0)</b>	<b>216</b>	<b>(66)</b>	<b>46</b>	<b>(14)</b>	<b>64</b>	<b>(20)</b>
<b>Total EU/EEA countries</b>	<b>78622</b>	<b>(77)</b>	<b>13945</b>	<b>(14)</b>	<b>9711</b>	<b>(9)</b>	<b>67103</b>	<b>(79)</b>	<b>11272</b>	<b>(13)</b>	<b>6542</b>	<b>(8)</b>
<b>West, non-EU</b>												
Andorra	5	(100)	0	(0)	0	(0)	5	(83)	1	(17)	0	(0)
Israel	462	(90)	49	(10)	0	(0)	385	(97)	11	(3)	1	(0)
San Marino	1	(100)	0	(0)	0	(0)	-	-	-	-	-	-
Switzerland	467	(71)	67	(10)	124	(19)	318	(67)	53	(11)	107	(22)
<b>Subtotal West, non-EU</b>	<b>935</b>	<b>(80)</b>	<b>116</b>	<b>(10)</b>	<b>124</b>	<b>(11)</b>	<b>708</b>	<b>(80)</b>	<b>65</b>	<b>(7)</b>	<b>108</b>	<b>(12)</b>
<b>Total EU/EEA &amp; West</b>	<b>79557</b>	<b>(77)</b>	<b>14061</b>	<b>(14)</b>	<b>9835</b>	<b>(10)</b>	<b>67811</b>	<b>(79)</b>	<b>11337</b>	<b>(13)</b>	<b>6650</b>	<b>(8)</b>
<b>Balkans</b>												
Albania	571	(93)	41	(7)	0	(0)	422	(94)	25	(6)	0	(0)
Bosnia and Herzegovina	2298	(90)	253	(10)	0	(0)	2217	(92)	183	(8)	0	(0)
Croatia	1340	(91)	123	(8)	7	(0)	884	(90)	98	(10)	0	(0)
Montenegro	-	- <sup>d</sup>	-	- <sup>d</sup>	-	- <sup>d</sup>	136	(86)	22	(14)	1	(1)
Serbia	2789	(92) <sup>d</sup>	244	(8) <sup>d</sup>	0	(0)	1767	(86)	277	(14)	7	(0)
The former Yugoslav Republic of Macedonia	646	(88)	84	(12)	0	(0)	494	(88)	69	(12)	0	(0)
Turkey	-	-	-	-	-	-	17781	(90)	1885	(10)	28	(0)
<b>Total Balkans</b>	<b>7644</b>	<b>(91)</b>	<b>745</b>	<b>(9)</b>	<b>7</b>	<b>(0)</b>	<b>23701</b>	<b>(90)</b>	<b>2559</b>	<b>(10)</b>	<b>36</b>	<b>(0)</b>
<b>East</b>												
Armenia	1393	(96)	62	(4)	0	(0)	1533	(72)	596	(28)	0	(0)
Azerbaijan	4964	(93)	384	(7)	0	(0)	4444	(60)	2903	(40)	0	(0)
Belarus	-	-	-	-	-	-	4872	(85)	884	(15)	0	(0)
Georgia	4390	(69)	1955	(31)	0	(0)	4065	(69)	1845	(31)	2	(0)
Kazakhstan	24478	(74)	8458	(26)	0	(0)	19584	(49)	18722	(46)	1973	(5)
Kyrgyzstan	6172	(91)	622	(9)	0	(0)	5667	(84)	1040	(16)	0	(0)
Republic of Moldova (the)	3433	(83)	716	(17)	0	(0)	4166	(65)	2201	(35)	0	(0)
Russian Federation (the)	-	-	-	-	-	-	118367	(55)	96557	(45)	0	(0)
Tajikistan	-	-	-	-	-	-	6078	(75)	2003	(25)	0	(0)
Turkmenistan	3611	(78)	1024	(22)	0	(0)	3347	(91)	351	(9)	0	(0)
Ukraine	-	-	-	-	-	-	34891	(86)	5752	(14)	0	(0)
Uzbekistan	19960	(74)	7049	(26)	0	(0)	17911	(77)	4617	(20)	862	(4)
<b>Total East</b>	<b>68401</b>	<b>(77)</b>	<b>20270</b>	<b>(23)</b>	<b>0</b>	<b>(0)</b>	<b>224923</b>	<b>(62)</b>	<b>137471</b>	<b>(38)</b>	<b>2837</b>	<b>(1)</b>
<b>Total European Region</b>	<b>155602</b>	<b>(78)</b>	<b>35076</b>	<b>(17)</b>	<b>9842</b>	<b>(5)</b>	<b>316437</b>	<b>(66)</b>	<b>151367</b>	<b>(32)</b>	<b>9523</b>	<b>(2)</b>

<sup>a</sup> Distribution of cases by previous anti-TB treatment, except where italicised (previous diagnosis).<sup>b</sup> New and recurrent respiratory and meningial cases only<sup>c</sup> Excluding Scotland<sup>d</sup> Cases from Montenegro included with Serbia

Table 14: Tuberculosis cases confirmed by culture, Europe, 2004–2007<sup>a</sup>

Geographical area	2004		2005		2006 <sup>b</sup>		2007	
	Culture confirmed cases	% of all TB cases reported	Culture confirmed cases	% of all TB cases reported	Culture confirmed cases	% of all TB cases reported	Culture confirmed cases	% of all TB cases reported
<b>EU</b>								
Austria	673	(63)	652	(65)	547	(63)	538	(62)
Belgium	937	(78)	834	(75)	889	(79)	803	(78)
Bulgaria	1283	(40)	1254	(38)	1360	(42)	1408	(46)
Cyprus	19	(63)	19	(51)	23	(62)	33	(79)
Czech Republic	666	(63)	645	(64)	619	(64)	563	(65)
Denmark	291	(76)	326	(77)	301	(80)	292	(75)
Estonia	452	(76)	390	(75)	347	(76)	381	(78)
Finland	286	(86)	316	(88)	273	(91)	226	(72)
France	2007	(36)	2163	(40)	2369	(44)	2535	(45)
Germany	4362	(67)	4102	(68)	3705	(69)	3437	(68)
Greece	206	(27)	214	(28)	210	(31)	209	(32)
Hungary	990	(42)	777	(40)	735	(39)	766	(44)
Ireland	279	(65)	283	(63)	220	(48)	238	(50)
Italy	1954	(46)	1594	(39)	1593	(36)	1782	(39)
Latvia	1157	(72)	1109	(77)	994	(75)	993	(79)
Lithuania	1598	(64)	1739	(68)	1786	(70)	1686	(70)
Luxembourg	31	(100)	37	(100)	33	(100)	26	(67)
Malta	8	(42)	11	(44)	15	(50)	19	(50)
Netherlands	759	(56)	847	(73)	701	(69)	573 <sup>c</sup>	(60)
Poland	5049	(53)	5409	(58)	5233	(61)	5412	(63)
Portugal	2317	(60)	2171	(61)	1924	(56)	1986	(64)
Romania	18605	(60)	18311	(63)	5373	(20)	4147 <sup>c</sup>	(16)
Slovakia	357	(51)	357	(47)	401	(55)	396	(58)
Slovenia	231	(88)	245	(88)	184	(86)	189	(87)
Spain	3457	(45)	3686	(47)	3651	(45)	3949	(51)
Sweden	370	(80)	444	(79)	397	(80)	365	(74)
United Kingdom	4688	(62)	5063	(61)	5307	(62)	5075	(60)
<b>Subtotal EU countries</b>	<b>53032</b>	<b>(56)</b>	<b>52998</b>	<b>(58)</b>	<b>39190</b>	<b>(45)</b>	<b>38027</b>	<b>(45)</b>
<b>EEA</b>								
Iceland	8	(67)	8	(73)	12	(92)	11	(79)
Liechtenstein	-	-	-	-	-	-	5	(100)
Norway	246	(81)	214	(74)	226	(77)	245	(80)
<b>Subtotal EEA countries</b>	<b>254</b>	<b>(81)</b>	<b>222</b>	<b>(74)</b>	<b>238</b>	<b>(78)</b>	<b>261</b>	<b>(80)</b>
<b>Total EU/EEA countries</b>	<b>53278</b>	<b>(56)</b>	<b>53212</b>	<b>(58)</b>	<b>39416</b>	<b>(45)</b>	<b>38288</b>	<b>(45)</b>
<b>West, non-EU</b>								
Andorra	6	(86)	9	(90)	8	(62)	3	(50)
Israel	265	(51)	217	(53)	267	(69)	273	(69)
Monaco	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-
Switzerland	478	(81)	463	(82)	449	(86)	393	(82)
<b>Subtotal West, non-EU</b>	<b>749</b>	<b>(67)</b>	<b>689</b>	<b>(70)</b>	<b>724</b>	<b>(79)</b>	<b>669</b>	<b>(76)</b>
<b>Total EU/EEA &amp; West</b>	<b>54027</b>	<b>(56)</b>	<b>53901</b>	<b>(58)</b>	<b>40140</b>	<b>(45)</b>	<b>38957</b>	<b>(45)</b>
<b>Balkans</b>								
Albania	201	(35)	196	(36)	166	(33)	187	(42)
Bosnia and Herzegovina	1676	(70)	1142	(53)	1086	(60)	1423	(59)
Croatia	758	(58)	647	(57)	696	(61)	688	(70)
Montenegro	-	- <sup>d</sup>	107	(63)	119	(70)	89	(56)
Serbia	1258	(45) <sup>d</sup>	1365	(57)	1271	(59)	1397	(68)
The former Yugoslav Republic of Macedonia	143	(21)	160	(24)	208	(33)	225	(40)
Turkey	-	-	5793	(28)	6786	(33)	6988 <sup>e</sup>	(35)
<b>Total Balkans</b>	<b>4036</b>	<b>(15)</b>	<b>9410</b>	<b>(34)</b>	<b>10332</b>	<b>(38)</b>	<b>10997</b>	<b>(42)</b>
<b>East</b>								
Armenia	0	(0)	0	(0)	0	(0)	0	(0)
Azerbaijan	1115	(17)	0	(0)	0	(0)	0	(0)
Belarus	2340	(36)	2295	(36)	2126	(35)	2751	(48)
Georgia	0	(0)	257	(4)	94	(1)	2182	(37)
Kazakhstan	4835	(15)	5955	(19)	8470	(20)	6883	(17)
Kyrgyzstan	-	-	-	-	-	-	-	-
Republic of Moldova (the)	0	(0)	0	(0)	0	(0)	2297	(36)
Russian Federation (the)	6538	(4)	31224	(20)	60240	(40)	94878	(44)
Tajikistan	0	(0)	0	(0)	0	(0)	4231	(52)
Turkmenistan <sup>f</sup>	0	(0)	0	(0)	0	(0)	3698	(100)
Ukraine	0	(0)	0	(0)	0	(0)	524	(1)
Uzbekistan	-	-	-	-	-	-	-	-
<b>Total East</b>	<b>14828</b>	<b>(5)</b>	<b>39731</b>	<b>(13)</b>	<b>70930</b>	<b>(23)</b>	<b>117444</b>	<b>(32)</b>
<b>Total European Region</b>	<b>72891</b>	<b>(23)</b>	<b>103042</b>	<b>(31)</b>	<b>121402</b>	<b>(36)</b>	<b>167398</b>	<b>(43)</b>

<sup>a</sup> Countries reported routine use of culture in diagnosis of pulmonary TB in 2007, except where shown in italics (not routine or unknown), EuroTB historical data were not updated in 2008

<sup>b</sup> In certain countries (particularly Ireland and Romania), reporting of culture results for 2006 was incomplete at the time of data collection

<sup>c</sup> Reporting of culture results for 2007 was incomplete at the time of data collection

<sup>d</sup> Cases from Montenegro included with Serbia

<sup>e</sup> Data from CISID Questionnaire

<sup>f</sup> Reported culture-positive cases only

**Table 15: Tuberculosis cases by *M. tuberculosis* complex species, EU & West and Balkans, 2007<sup>a</sup>**

Geographical area	<i>M. tuberculosis</i>		<i>M. bovis</i>		<i>M. africanum</i>		Unknown or not done		Total culture positive
	N	(%)	N	(%)	N	(%)	N	(%)	
<b>EU</b>									
Austria	135	(25.1)	2	(0.4)	1	(0.2)	400	(74.3)	538
Belgium	803	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	803
Bulgaria	1408	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1408
Cyprus	31	(93.9)	0	(0.0)	1	(3.0)	1	(3.0)	33
Czech Republic	550	(97.7)	1	(0.2)	0	(0.0)	12	(2.1)	563
Denmark	291	(99.7)	1	(0.3)	0	(0.0)	0	(0.0)	292
Estonia	381	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	381
Finland	-	-	-	-	-	-	226	(100.0)	226
France	-	-	-	-	-	-	2535	(100.0)	2535
Germany	2952	(85.9)	41	(1.2)	19	(0.6)	425	(12.4)	3437
Greece	92	(44.0)	1	(0.5)	0	(0.0)	116	(55.5)	209
Hungary	766	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	766
Ireland	216	(90.8)	5	(2.1)	2	(0.8)	15	(6.3)	238
Italy	459	(25.8)	4	(0.2)	4	(0.2)	1315	(73.8)	1782
Latvia	993	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	993
Lithuania	1686	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1686
Luxembourg	25	(96.2)	0	(0.0)	0	(0.0)	1	(3.8)	26
Malta	17	(89.5)	0	(0.0)	0	(0.0)	2	(10.5)	19
Netherlands <sup>b</sup>	545	(95.1)	9	(1.6)	0	(0.0)	19	(3.3)	573
Poland	5412	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	5412
Portugal	0	(0.0)	0	(0.0)	0	(0.0)	1986	(100.0)	1986
Romania	4147	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	4147
Slovakia	396	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	396
Slovenia	187	(98.9)	2	(1.1)	0	(0.0)	0	(0.0)	189
Spain	1127	(28.5)	11	(0.3)	8	(0.2)	2803	(71.0)	3949
Sweden	360	(98.6)	4	(1.1)	1	(0.3)	0	(0.0)	365
United Kingdom	4954	(97.6)	24	(0.5)	35	(0.7)	62	(1.2)	5075
<b>Subtotal EU countries</b>	<b>27933</b>	<b>(73.5)</b>	<b>100</b>	<b>(0.3)</b>	<b>71</b>	<b>(0.2)</b>	<b>9923</b>	<b>(26.1)</b>	<b>38027</b>
<b>EEA</b>									
Iceland	11	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	11
Liechtenstein	4	(80.0)	0	(0.0)	0	(0.0)	1	(20.0)	5
Norway	237	(96.7)	2	(0.8)	3	(1.2)	3	(1.2)	245
<b>Subtotal EEA countries</b>	<b>252</b>	<b>(96.6)</b>	<b>2</b>	<b>(0.8)</b>	<b>3</b>	<b>(1.1)</b>	<b>4</b>	<b>(1.5)</b>	<b>261</b>
<b>Total EU/EEA countries</b>	<b>28185</b>	<b>(73.6)</b>	<b>102</b>	<b>(0.3)</b>	<b>74</b>	<b>(0.2)</b>	<b>9927</b>	<b>(25.9)</b>	<b>38288</b>

<sup>a</sup> Including only countries reporting case-based data on characterisation of species for > 10% of culture-positive cases

<sup>b</sup> Based on case-based data reported by December 2008

**Table 16: Classification of tuberculosis cases according to the European TB case definition (as revised), using clinical and laboratory information provided on case-based datasets, Europe, 2007<sup>a</sup>**

Geographical area	CLINICAL CRITERIA <sup>a</sup>						LABORATORY CRITERIA <sup>a</sup>					
	Criteria met (diagnosed alive)		Postmortem detection		Not reported or criteria not met		Confirmatory		Probable		None	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	839	(96)	35	(4)	0	(0)	541	(62)	16	(2)	317	(36)
Belgium	764	(74)	3	(0)	261	(25)	809	(79)	99	(10)	120	(12)
Bulgaria	3052	(100)	0	(0)	0	(0)	1409	(46)	271	(9)	1372	(45)
Cyprus	42	(100)	0	(0)	0	(0)	33	(79)	9	(21)	0	(0)
Czech Republic	763	(88)	108	(12)	0	(0)	565	(65)	112	(13)	194	(22)
Denmark	390	(100)	1	(0)	0	(0)	294	(75)	12	(3)	85	(22)
Estonia	477	(98)	10	(2)	0	(0)	381	(78)	12	(2)	94	(19)
Finland	304	(97)	9	(3)	0	(0)	0	(0)	0	(0)	313	(100)
France	0	(0)	0	(0)	0	(0)	2535	(45)	1053	(19)	2000	(36)
Germany	4920	(98)	21	(0)	79	(2)	3523	(70)	432	(9)	1065	(21)
Greece	0	(0)	0	(0)	0	(0)	209	(32)	220	(33)	230	(35)
Hungary	0	(0)	0	(0)	1752	(100)	766	(44)	62	(4)	924	(53)
Ireland	380	(79)	6	(1)	92	(19)	237	(50)	76	(16)	165	(35)
Italy	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	4527	(100)
Latvia	1244	(99)	11	(1)	0	(0)	993	(79)	107	(9)	155	(12)
Lithuania	2408	(100)	0	(0)	0	(0)	1686	(70)	6	(0)	716	(30)
Luxembourg	39	(100)	0	(0)	0	(0)	26	(67)	0	(0)	13	(33)
Malta	38	(100)	0	(0)	0	(0)	20	(53)	2	(5)	16	(42)
Netherlands <sup>b</sup>	947	(99)	13	(1)	0	(0)	591	(62)	121	(13)	248	(26)
Poland	8604	(100)	12	(0)	0	(0)	5412	(63)	0	(0)	3204	(37)
Portugal	0	(0)	0	(0)	3127	(100)	1986	(64)	185	(6)	956	(31)
Romania	25438	(100)	53	(0)	0	(0)	4147	(16)	11465	(45)	9879	(39)
Slovakia	679	(100)	3	(0)	0	(0)	396	(58)	5	(1)	281	(41)
Slovenia	215	(99)	3	(1)	0	(0)	189	(87)	0	(0)	29	(13)
Spain	0	(0)	0	(0)	7767	(100)	3949	(51)	524	(7)	3294	(42)
Sweden	457	(93)	6	(1)	28	(6)	365	(74)	0	(0)	126	(26)
United Kingdom	1915	(23)	46	(1)	6456	(77)	5075	(60)	458	(5)	2884	(34)
<b>Subtotal EU countries</b>	<b>53915</b>	<b>(64)</b>	<b>340</b>	<b>(0)</b>	<b>19562</b>	<b>(23)</b>	<b>36137</b>	<b>(43)</b>	<b>15247</b>	<b>(18)</b>	<b>33207</b>	<b>(39)</b>
<b>EEA</b>												
Iceland	14	(100)	0	(0)	0	(0)	11	(79)	0	(0)	3	(21)
Liechtenstein	5	(100)	0	(0)	0	(0)	5	(100)	0	(0)	0	(0)
Norway	287	(93)	2	(1)	18	(6)	246	(80)	4	(1)	57	(19)
<b>Subtotal EEA countries</b>	<b>21</b>	<b>(6)</b>	<b>287</b>	<b>(88)</b>	<b>18</b>	<b>(6)</b>	<b>262</b>	<b>(80)</b>	<b>4</b>	<b>(1)</b>	<b>60</b>	<b>(18)</b>
<b>Total EU/EEA countries</b>	<b>53936</b>	<b>(64)</b>	<b>627</b>	<b>(1)</b>	<b>19580</b>	<b>(23)</b>	<b>36399</b>	<b>(43)</b>	<b>15251</b>	<b>(18)</b>	<b>33267</b>	<b>(39)</b>
<b>West, non-EU</b>												
Andorra	-	-	-	-	-	-	-	-	-	-	-	-
Israel	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal West, non-EU</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total EU/EEA &amp; West</b>	<b>107851</b>	<b>(63)</b>	<b>967</b>	<b>(1)</b>	<b>39142</b>	<b>(23)</b>	<b>72536</b>	<b>(43)</b>	<b>30498</b>	<b>(18)</b>	<b>66474</b>	<b>(39)</b>
<b>Balkans</b>												
Albania	-	-	-	-	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	-	-	-	-	-	-	-	-	-	-	-	-
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-
Serbia	-	-	-	-	-	-	-	-	-	-	-	-
The former Yugoslav Republic of Macedonia	-	-	-	-	-	-	-	-	-	-	-	-
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Balkans</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>East</b>												
Armenia	-	-	-	-	-	-	-	-	-	-	-	-
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova (the)	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation (the)	-	-	-	-	-	-	-	-	-	-	-	-
Tajikistan	-	-	-	-	-	-	-	-	-	-	-	-
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total East</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total European Region</b>	<b>107851</b>	<b>(19)</b>	<b>967</b>	<b>(0)</b>	<b>39142</b>	<b>(7)</b>	<b>72536</b>	<b>(13)</b>	<b>30498</b>	<b>(5)</b>	<b>66474</b>	<b>(12)</b>

<sup>a</sup> Criteria and classification as per the European TB case definition as revised up to 2007 (see Technical Note)<sup>b</sup> Based on case-based data reported by December 2008

	CASE CLASSIFICATION <sup>a</sup>										Geographical area	
	Confirmed		Probable		Possible		Laboratory confirmed only		Not classifiable			Total cases
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)		
												<b>EU</b>
	541	(62)	13	(1)	304	(35)	19	(2)	16	(2)	874	Austria
	809	(79)	99	(10)	120	(12)	0	(0)	0	(0)	1028	Belgium
	1408	(46)	269	(9)	1374	(45)	0	(0)	1	(0)	3052	Bulgaria
	33	(79)	9	(21)	0	(0)	0	(0)	0	(0)	42	Cyprus
	565	(65)	112	(13)	194	(22)	0	(0)	0	(0)	871	Czech Republic
	294	(75)	12	(3)	74	(19)	0	(0)	11	(3)	391	Denmark
	381	(78)	12	(2)	94	(19)	0	(0)	0	(0)	487	Estonia
	226	(72)	63	(20)	24	(8)	0	(0)	0	(0)	313	Finland
	0	(0)	0	(0)	0	(0)	0	(0)	5588	(100)	5588	France
	3523	(70)	432	(9)	1065	(21)	0	(0)	0	(0)	5020	Germany
	206	(31)	219	(33)	211	(32)	3	(0)	23	(3)	659	Greece
	766	(44)	0	(0)	0	(0)	766	(44)	986	(56)	1752	Hungary
	237	(50)	76	(16)	165	(35)	0	(0)	0	(0)	478	Ireland
	4527	(100)	0	(0)	0	(0)	0	(0)	0	(0)	4527	Italy
	993	(79)	107	(9)	155	(12)	0	(0)	0	(0)	1255	Latvia
	1686	(70)	6	(0)	716	(30)	0	(0)	0	(0)	2408	Lithuania
	39	(100)	0	(0)	0	(0)	26	(67)	0	(0)	39	Luxembourg
	19	(50)	3	(8)	16	(42)	0	(0)	0	(0)	38	Malta
	591	(62)	121	(13)	248	(26)	0	(0)	0	(0)	960	Netherlands <sup>b</sup>
	5412	(63)	0	(0)	3204	(37)	9	(0)	0	(0)	8616	Poland
	1986	(64)	0	(0)	0	(0)	1986	(64)	1141	(36)	3127	Portugal
	4147	(16)	11905	(47)	9439	(37)	0	(0)	0	(0)	25491	Romania
	441	(65)	217	(32)	24	(4)	0	(0)	0	(0)	682	Slovakia
	189	(87)	0	(0)	16	(7)	2	(1)	13	(6)	218	Slovenia
	3949	(51)	524	(7)	3294	(42)	0	(0)	0	(0)	7767	Spain
	365	(74)	1	(0)	125	(25)	0	(0)	0	(0)	491	Sweden
	5075	(60)	458	(5)	2884	(34)	0	(0)	0	(0)	8417	United Kingdom
	<b>38 408</b>	<b>(45)</b>	<b>14 658</b>	<b>(17)</b>	<b>23 746</b>	<b>(28)</b>	<b>2 811</b>	<b>(3)</b>	<b>7 779</b>	<b>(9)</b>	<b>84 591</b>	<b>Subtotal EU countries</b>
												<b>EEA</b>
	11	(79)	0	(0)	3	(21)	0	(0)	0	(0)	14	Iceland
	5	(100)	0	(0)	0	(0)	0	(0)	0	(0)	5	Liechtenstein
	246	(80)	4	(1)	57	(19)	0	(0)	0	(0)	307	Norway
	<b>262</b>	<b>(80)</b>	<b>4</b>	<b>(1)</b>	<b>60</b>	<b>(18)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>326</b>	<b>Subtotal EEA countries</b>
	<b>38 670</b>	<b>(46)</b>	<b>14 662</b>	<b>(17)</b>	<b>23 806</b>	<b>(28)</b>	<b>2 811</b>	<b>(3)</b>	<b>7 779</b>	<b>(9)</b>	<b>84 917</b>	<b>Total EU/EEA countries</b>
												<b>West, non-EU</b>
	2	(33)	1	(17)	2	(33)	1	(17)	0	(0)	6	Andorra
	155	(39)	17	(4)	107	(27)	118	(30)	0	(0)	397	Israel
	393	(82)	0	(0)	85	(18)	0	(0)	0	(0)	478	Switzerland
	<b>550</b>	<b>(62)</b>	<b>18</b>	<b>(2)</b>	<b>194</b>	<b>(22)</b>	<b>119</b>	<b>(14)</b>	<b>0</b>	<b>(0)</b>	<b>881</b>	<b>Subtotal West, non-EU</b>
	<b>77 628</b>	<b>(46)</b>	<b>29 338</b>	<b>(17)</b>	<b>47 746</b>	<b>(28)</b>	<b>5 741</b>	<b>(3)</b>	<b>15 558</b>	<b>(9)</b>	<b>170 389</b>	<b>Total EU/EEA &amp; West</b>
												<b>Balkans</b>
	158	(35)	25	(6)	235	(53)	29	(6)	0	(0)	447	Albania
	0	(0)	0	(0)	977	(41)	1423	(59)	0	(0)	2400	Bosnia and Herzegovina
	688	(70)	10	(1)	207	(21)	0	(0)	77	(8)	982	Croatia
	0	(0)	6	(4)	64	(40)	89	(56)	0	(0)	159	Montenegro
	1397	(68)	273	(13)	381	(19)	0	(0)	0	(0)	2051	Serbia
	225	(40)	233	(41)	54	(10)	51	(9)	0	(0)	563	The former Yugoslav Republic of Macedonia
	5463	(28)	2658	(13)	6689	(34)	332	(2)	4552	(0)	19 694	Turkey
	<b>7 931</b>	<b>(30)</b>	<b>3 205</b>	<b>(12)</b>	<b>8 607</b>	<b>(33)</b>	<b>1 924</b>	<b>(7)</b>	<b>4 629</b>	<b>(0)</b>	<b>26 296</b>	<b>Total Balkans</b>
												<b>East</b>
	0	(0)	774	(36)	1355	(64)	0	(0)	0	(0)	2129	Armenia
	0	(0)	2433	(33)	4914	(67)	0	(0)	0	(0)	7347	Azerbaijan
	2467	(43)	0	(0)	3236	(56)	53	(1)	0	(0)	5756	Belarus
	2182	(37)	1021	(17)	2709	(46)	0	(0)	0	(0)	5912	Georgia
	6883	(17)	17331	(43)	10978	(27)	0	(0)	5087	(13)	40 279	Kazakhstan
	0	(0)	4556	(68)	2151	(32)	0	(0)	0	(0)	6707	Kyrgyzstan
	0	(0)	0	(0)	0	(0)	0	(0)	6367	(100)	6367	Republic of Moldova (the)
	87260	(41)	15832	(7)	90667	(42)	21165	(10)	0	(0)	214 924	Russian Federation (the)
	0	(0)	8081	(100)	0	(0)	0	(0)	0	(0)	8081	Tajikistan
	0	(0)	0	(0)	0	(0)	0	(0)	3689	(100)	3689	Turkmenistan
	0	(0)	0	(0)	0	(0)	0	(0)	33909	(83)	40 643	Ukraine
	0	(0)	23390	(100)	0	(0)	0	(0)	0	(0)	23 390	Uzbekistan
	<b>98 792</b>	<b>(27)</b>	<b>73 418</b>	<b>(20)</b>	<b>116 010</b>	<b>(32)</b>	<b>21 218</b>	<b>(6)</b>	<b>49 052</b>	<b>(13)</b>	<b>365 233</b>	<b>Total East</b>
	<b>184 351</b>	<b>(33)</b>	<b>105 961</b>	<b>(19)</b>	<b>172 363</b>	<b>(31)</b>	<b>28 883</b>	<b>(5)</b>	<b>64 687</b>	<b>(12)</b>	<b>561 918</b>	<b>Total European Region</b>

Table 17: Tuberculosis cases with HIV infection, Europe<sup>a</sup>, 2001–2007

Geographical area	2001			2002			2003			2004		
	TB cases	HIV-positive		TB cases	HIV-positive		TB cases	HIV-positive		TB cases	HIV-positive	
		N	(%)		N	(%)		N	(%)		N	(%)
<b>EU</b>												
Belgium	1321	60	(4.5)	1294	51	(3.9)	1117	70	(6.3)	1198	55	(4.6)
Bulgaria	3862	0	(0.0)	3335	0	(0.0)	3263	0	(0.0)	3232	10	(0.3)
Cyprus	-	-	-	-	-	-	-	-	-	-	-	-
Czech Republic	1350	2	(0.1)	1200	0	(0.0)	1162	5	(0.4)	-	-	-
Denmark	511	11	(2.2)	-	-	-	393	11	(2.8)	385	7	(1.8)
Estonia	812	7	(0.9)	713	20	(2.8)	623	18	(2.9)	594	26	(4.4)
Finland	-	-	-	-	-	-	-	-	-	-	-	-
France	6465	364	(5.6)	-	-	-	-	-	-	-	-	-
Ireland	406	7	(1.7)	408	19	(4.7)	407	2	(0.5)	432	13	(3.0)
Italy	-	-	-	-	-	-	-	-	-	4220	11	(0.3)
Latvia	2082	27	(1.3)	1855	25	(1.3)	1726	40	(2.3)	1610	40	(2.5)
Lithuania	2989	3	(0.1)	2844	1	(0.0)	-	-	-	2514	8	(0.3)
Malta	16	0	(0.0)	24	0	(0.0)	7	1	(14.3)	19	1	(5.3)
Netherlands	1436	67	(4.7)	1401	62	(4.4)	1321	65	(4.9)	1344	46	(3.4)
Poland	-	-	-	-	-	-	10124	15	(0.1)	-	-	-
Portugal	4399	680	(15.5)	4501	727	(16.2)	4148	669	(16.1)	3854	607	(15.7)
Romania	-	-	-	-	-	-	31039	161	(0.5)	31034	144	(0.5)
Slovakia	1076	0	(0.0)	1053	0	(0.0)	983	1	(0.1)	705	0	(0.0)
Slovenia	371	2	(0.5)	350	1	(0.3)	293	1	(0.3)	263	3	(1.1)
Spain	7453	599	(8.0) <sup>b</sup>	7626	926	(12.1) <sup>b</sup>	7467	714	(9.6) <sup>b</sup>	7766	436	(5.6)
United Kingdom <sup>c</sup>	7017	314	(4.5)	7263	459	(6.3)	7220	548	(7.6)	-	-	-
<b>EEA</b>												
Iceland	13	0	(0.0)	8	1	(12.5)	5	1	(20.0)	12	1	(8.3)
<b>West, non-EU</b>												
Andorra	-	-	-	5	0	(0.0)	11	0	(0.0)	7	0	(0.0)
Israel	564	25	(4.4)	511	24	(4.7)	529	36	(6.8)	519	13	(2.5)
<b>Balkans</b>												
Albania	572	3	(0.5)	612	3	(0.5)	-	-	-	581	1	(0.2)
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	-	-
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-
Serbia	-	-	-	-	-	-	-	-	-	-	-	-
The former Yugoslav Republic of Macedonia	-	-	-	-	-	-	-	-	-	-	-	-
<b>East</b>												
Armenia	1401	0	(0.0)	1455	3	(0.2)	1570	1	(0.1)	1701	8	(0.5)
Azerbaijan	4923	12	(0.2)	5348	7	(0.1)	3931	8	(0.2)	-	-	-
Belarus	5505	33	(0.6)	5139	36	(0.7)	-	-	-	6490	25	(0.4)
Georgia	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova (the)	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation (the)	-	-	-	-	-	-	-	-	-	-	-	-
Tajikistan	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	-	-	-	-	-	-	26172	160	(0.6)	25714	138	(0.5)

<sup>a</sup> 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

<sup>b</sup> Among new and recurrent respiratory and meningeal cases only

<sup>c</sup> Data for England and Wales only

	2005			2006			2007			Geographical area
	TB cases	HIV-positive		TB cases	HIV-positive		TB cases	HIV-positive		
		N	(%)		N	(%)		N	(%)	
										<b>EU</b>
	1107	52	(4.7)	1127	55	(4.9)	1028	52	(5.1)	Belgium
	3302	0	(0.0)	3232	6	(0.2)	3052	6	(0.2)	Bulgaria
	-	-	-	37	0	(0.0)	42	0	(0.0)	Cyprus
	-	-	-	973	4	(0.4)	871	7	(0.8)	Czech Republic
	422	9	(2.1)	377	11	(2.9)	391	6	(1.5)	Denmark
	519	33	(6.4)	455	41	(9.0)	487	54	(11.1)	Estonia
	361	3	(0.8)	299	6	(2.0)	-	-	-	Finland
	-	-	-	-	-	-	-	-	-	France
	450	11	(2.4)	458	15	(3.3)	478	7	(1.5)	Ireland
	-	-	-	-	-	-	-	-	-	Italy
	1443	51	(3.5)	1328	45	(3.4)	1255	55	(4.4)	Latvia
	2574	7	(0.3)	2559	13	(0.5)	2408	21	(0.9)	Lithuania
	25	0	(0.0)	30	2	(6.7)	38	2	(5.3)	Malta
	1155	61	(5.3)	1021	41	(4.0)	960	32	(3.3)	Netherlands
	-	-	-	-	-	-	-	-	-	Poland
	3573	546	(15.3)	3423	474	(13.8)	-	-	-	Portugal
	29289	160	(0.5)	27319	60	(0.2)	25491	187	(0.7)	Romania
	760	1	(0.1)	730	0	(0.0)	682	0	(0.0)	Slovakia
	278	0	(0.0)	215	1	(0.5)	218	0	(0.0)	Slovenia
	7820	394	(5.0)	8029	354	(4.4)	7767	446	(5.7)	Spain
	-	-	-	-	-	-	-	-	-	United Kingdom
										<b>EEA</b>
	11	1	(9.1)	13	2	(15.4)	-	-	-	Iceland
										<b>West, non-EU</b>
	10	0	(0.0)	13	0	(0.0)	6	0	(0.0)	Andorra
	406	22	(5.4)	386	15	(3.9)	397	18	(4.5)	Israel
										<b>Balkans</b>
	540	1	(0.2)	502	3	(0.6)	447	1	(0.2)	Albania
	-	-	-	-	-	-	2400	0	(0.0)	Bosnia and Herzegovina
	170	0	(0.0)	171	1	(0.6)	159	0	(0.0)	Montenegro
	2378	3	(0.1)	2150	5	(0.2)	2051	9	(0.4)	Serbia
	658	2	(0.3)	627	0	(0.0)	563	1	(0.2)	The former Yugoslav Republic of Macedonia
										<b>East</b>
	2322	46	(2.0)	2155	25	(1.2)	2129	8	(0.4)	Armenia
	-	-	-	-	-	-	7347	31	(0.4)	Azerbaijan
	6357	32	(0.5)	-	-	-	5756	152	(2.6)	Belarus
	6448	13	(0.2)	6311	17	(0.3)	5912	29	(0.5)	Georgia
	-	-	-	43204	234	(0.5)	40279	171	(0.4)	Kazakhstan
	-	-	-	-	-	-	6367	212	(3.3)	Republic of Moldova (the)
	156047	1544	(1.0)	152265	1979	(1.3)	214924	14293	(6.7)	Russian Federation (the)
	-	-	-	6671	3	(0.0)	8081	62	(0.8)	Tajikistan
	-	-	-	41265	1987	(4.8)	40643	2345	(5.8)	Ukraine
	28891	147	(0.5)	25310	238	(0.9)	23390	371	(1.6)	Uzbekistan

Table 18: AIDS cases with tuberculosis as initial AIDS-indicative disease, Europe, 2007<sup>a</sup>

Geographical area	Total AIDS cases		AIDS-indicative opportunistic infection, unspecified		Pulmonary TB <sup>b</sup>		Extrapulmonary TB <sup>c</sup>		Total		AIDS cases with initial AIDS-indicative TB / total TB cases (%)
	N	Cases / 100 000	N	(%)	N	(%)	N	(%)	N	(%)	
<b>EU</b>											
Austria	64	0.8	6	(9)	2	(3)	2	(3)	4	(6)	(0.5)
Belgium	81	0.8	0	(0)	12	(15)	10	(12)	22	(27)	(2.1)
Bulgaria	8	0.1	0	(0)	2	(25)	2	(25)	4	(50)	(0.1)
Cyprus	4	0.5	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
Czech Republic	23	0.2	0	(0)	4	(17)	0	(0)	4	(17)	(0.5)
Denmark	32	0.6	0	(0)	2	(6)	2	(6)	4	(13)	(1.0)
Estonia	57	4.2	0	(0)	21	(37)	7	(12)	28	(49)	(5.7)
Finland	33	0.6	0	(0)	4	(12)	1	(3)	5	(15)	(1.6)
France	596	0.9	1	(0)	73	(12)	66	(11)	139	(23)	(2.5)
Germany	287	0.3	0	(0)	6	(2)	14	(5)	20	(7)	(0.4)
Greece	77	0.7	0	(0)	4	(5)	3	(4)	7	(9)	(1.1)
Hungary	23	0.2	1	(4)	1	(4)	0	(0)	1	(4)	(0.1)
Ireland	31	0.7	3	(10)	5	(16)	0	(0)	5	(16)	(1.0)
Italy <sup>d</sup>	-	-	-	-	0	-	0	-	0	-	-
Latvia	54	2.4	5	(9)	23	(43)	5	(9)	28	(52)	(2.2)
Lithuania	28	0.8	0	(0)	14	(50)	2	(7)	16	(57)	(0.7)
Luxembourg	10	2.1	0	(0)	0	(0)	1	(10)	1	(10)	(2.6)
Malta	2	0.5	2	(100)	0	(0)	0	(0)	0	(0)	(0.0)
Netherlands	241	1.5	241	(100)	0	(0)	0	(0)	0	(0)	(0.0)
Poland	101	0.3	17	(17)	24	(24)	3	(3)	46	(46)	(0.5)
Portugal	320	3.0	13	(4)	68	(21)	56	(18)	124	(39)	(4.0)
Romania	261	1.2	65	(25)	76	(29)	13	(5)	89	(34)	(0.3)
Slovakia	6	0.1	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
Slovenia	9	0.4	9	(100)	0	(0)	1	(11)	1	(11)	(0.5)
Spain	893	2.0	0	(0)	130	(15)	135	(15)	265	(30)	(3.4)
Sweden	62	0.7	10	(16)	5	(8)	9	(15)	18	(29)	(3.7)
United Kingdom	645	1.1	639	(99)	95	(15)	65	(10)	160	(25)	(1.9)
<b>Subtotal EU countries</b>	<b>3948</b>	<b>0.9</b>	<b>1012</b>	<b>(26)</b>	<b>571</b>	<b>(14)</b>	<b>397</b>	<b>(10)</b>	<b>991</b>	<b>(25)</b>	<b>(1.2)</b>
<b>EEA</b>											
Iceland	0	0.0	0	-	0	-	0	-	0	-	(0.0)
Liechtenstein <sup>d</sup>	-	-	-	-	-	-	-	-	-	-	-
Norway	9	0.2	9	(100)	0	(0)	0	(0)	0	(0)	(0.0)
<b>Subtotal EEA countries</b>	<b>9</b>	<b>0.2</b>	<b>9</b>	<b>(100)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>(0.0)</b>
<b>Total EU/EEA countries</b>	<b>3957</b>	<b>0.9</b>	<b>1021</b>	<b>(26)</b>	<b>571</b>	<b>(14)</b>	<b>397</b>	<b>(10)</b>	<b>991</b>	<b>(25)</b>	<b>(1.2)</b>
<b>West, non-EU</b>											
Andorra	0	0.0	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
Israel	36	0.5	1	(3)	15	(42)	6	(17)	21	(58)	(5.3)
Monaco	0	0.0	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
San Marino	0	0.0	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
Switzerland	149	2.0	0	-	11	(7)	8	(5)	19	(13)	(4.0)
<b>Subtotal West, non-EU</b>	<b>185</b>	<b>1.3</b>	<b>1</b>	<b>(1)</b>	<b>26</b>	<b>(14)</b>	<b>14</b>	<b>(8)</b>	<b>40</b>	<b>(22)</b>	<b>(8.4)</b>
<b>Total EU/EEA &amp; West</b>	<b>4142</b>	<b>0.5</b>	<b>1022</b>	<b>(25)</b>	<b>597</b>	<b>(14)</b>	<b>411</b>	<b>(10)</b>	<b>1031</b>	<b>(25)</b>	<b>(1.3)</b>
<b>Balkans</b>											
Albania	17	0.5	10	(59)	0	(0)	0	(0)	0	(0)	(0.0)
Bosnia and Herzegovina	4	0.1	0	(0)	1	(25)	0	(0)	1	(25)	(0.0)
Croatia	9	0.2	0	(0)	4	(44)	0	(0)	4	(44)	(0.4)
Montenegro	3	0.1	2	(67)	0	(0)	0	(0)	0	(0)	(0.0)
Serbia	44	7.0	3	(7)	5	(11)	11	(25)	16	(36)	(0.8)
The former Yugoslav Republic of Macedonia	7	0.3	2	(29)	2	(29)	0	(0)	2	(29)	(0.4)
Turkey	24	0.3	0	(0)	6	(25)	0	(0)	6	(25)	(0.0)
<b>Total Balkans</b>	<b>108</b>	<b>0.1</b>	<b>17</b>	<b>(16)</b>	<b>18</b>	<b>(17)</b>	<b>11</b>	<b>(10)</b>	<b>29</b>	<b>(27)</b>	<b>(0.1)</b>
<b>East</b>											
Armenia	59	1.8	15	(25)	32	(54)	18	(31)	50	(85)	(2.3)
Azerbaijan	201	2.3	0	(0)	94	(47)	7	(3)	101	(50)	(1.4)
Belarus	256	2.6	42	(16)	76	(30)	25	(10)	101	(39)	(1.8)
Georgia	181	4.1	70	(39)	32	(18)	0	(0)	32	(18)	(0.5)
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	22	0.4	1	(5)	13	(59)	2	(9)	15	(68)	(0.2)
Republic of Moldova (the)	211	5.9	0	(0)	69	(33)	0	(0)	69	(33)	(1.1)
Russian Federation (the)	-	-	-	-	-	-	-	-	-	-	-
Tajikistan	31	0.5	0	(0)	29	(94)	0	(0)	29	(94)	(0.4)
Turkmenistan	0	0.0	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
Ukraine	-	-	-	-	-	-	-	-	-	-	-
Uzbekistan	35	0.1	0	(0)	0	(0)	0	(0)	0	(0)	(0.0)
<b>Total East</b>	<b>996</b>	<b>1.4</b>	<b>128</b>	<b>(13)</b>	<b>345</b>	<b>(35)</b>	<b>52</b>	<b>(5)</b>	<b>397</b>	<b>(40)</b>	<b>(0.6)</b>
<b>Total European Region</b>	<b>5246</b>	<b>0.5</b>	<b>1167</b>	<b>(22)</b>	<b>960</b>	<b>(18)</b>	<b>474</b>	<b>(9)</b>	<b>1457</b>	<b>(28)</b>	<b>(1.0)</b>

<sup>a</sup> One AIDS case might have up to four AIDS-indicative diseases<sup>b</sup> In persons over 12 years of age; includes cases with concomitant pulmonary and extrapulmonary TB<sup>c</sup> At all ages<sup>d</sup> Italy, Kazakhstan, Liechtenstein, the Russian Federation and Ukraine are not included in the calculation of rates due to missing AIDS data for 2007



**Table 19: AIDS cases with TB as initial AIDS-indicative disease, Europe, 2001–2007<sup>a</sup>**

Geographical area	2001	2002	2003	2004	2005	2006	2007
<b>EU</b>							
Austria	12	14	6	8	8	5	4
Belgium	42	49	48	31	42	24	22
Bulgaria	5	3	4	11	12	6	4
Cyprus	0	0	0	0	0	0	0
Czech Republic	0	0	1	1	1	3	4
Denmark	15	9	10	10	4	12	4
Estonia	1	2	7	10	9	13	25
Finland	3	9	3	7	2	8	5
France	321	345	330	271	233	221	121
Germany	49	66	62	73	56	42	19
Greece	16	8	22	14	11	8	6
Hungary	0	1	3	0	4	3	1
Ireland	2	7	3	10	5	11	5
Latvia	22	24	29	22	32	26	24
Lithuania	3	1	2	4	4	16	16
Luxembourg	2	0	0	0	3	2	1
Malta	0	0	0	0	0	1	0
Poland	33	28	29	33	28	39	25
Portugal	507	480	397	323	284	226	121
Romania	138	112	146	127	109	91	86
Slovakia	0	0	0	0	1	0	0
Slovenia	1	1	1	1	1	1	1
Spain	748	661	680	531	463	415	251
Sweden	8	14	6	9	10	17	14
United Kingdom	190	270	295	271	230	193	148
<b>EEA</b>							
Iceland	0	0	1	1	0	1	0
Liechtenstein	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-
<b>West, non-EU</b>							
Andorra	-	-	-	-	-	-	-
Israel	27	28	34	16	20	17	19
Monaco	-	-	-	-	-	-	-
San Marino	0	0	0	-	0	0	-
Switzerland	28	27	17	27	30	22	17
<b>Balkans</b>							
Bosnia and Herzegovina	0	1	1	2	1	1	1
Croatia	2	7	0	3	6	4	4
Montenegro	-	-	-	-	-	0	0
Serbia <sup>b</sup>	20	18	12	8	15	18	16
The former Yugoslav Republic of Macedonia	0	0	0	1	3	0	2
Turkey	5	9	10	17	7	7	6
<b>East</b>							
Armenia	0	2	6	11	8	25	38
Azerbaijan	4	4	7	6	6	4	101
Belarus	1	7	11	31	43	126	88
Georgia	5	21	16	27	31	38	32
Kazakhstan	15	24	62	44	66	87	0
Kyrgyzstan	1	8	9	10	11	12	15
Republic of Moldova (the)	6	0	24	39	24	34	69
Russian Federation (the)	-	-	-	-	-	1	29
Tajikistan	0	1	0	0	0	0	0
Turkmenistan	269	443	1079	1497	2323	2782	-
Ukraine	4	0	6	10	3	0	0
Uzbekistan	35	0.1	0	(0)	0	(0)	0

<sup>a</sup> Source: European Centre for Disease Prevention and Control / WHO Regional Office for Europe, joint surveillance database, updated November 2008<sup>b</sup> Montenegro included with Serbia until 2005

**Table 20: Multidrug resistance (MDR) by previous history of TB treatment, Europe, latest available data****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Source of data / coverage <sup>a</sup>	Year	Cases never treated			Cases previously treated		
			Cases with DST results	Multidrug resistant		Cases with DST results	Multidrug resistant	
				N	(%)		N	(%)
<b>EU</b>								
Austria	case-linked data	2007	481	8	(1.7)	8	1	(12.5)
Belgium	case-linked data	2007	623	8	(1.3)	15	1	(6.7)
Cyprus	case-linked data	2007	28	2	(7.1)	1	1	(100.0)
Czech Republic	case-linked data	2007	487	8	(1.6)	45	3	(6.7)
Denmark	case-linked data	2007	270	0	(0.0)	20	0	(0.0)
Estonia	case-linked data	2007	316	52	(16.5)	65	28	(43.1)
Finland	case-linked data	2007	216	2	(0.9)	8	0	(0.0)
France	DRS Q	2007	1255	12	(1.0)	102	7	(6.9)
Germany	case-linked data	2007	2699	37	(1.4)	172	20	(11.6)
Latvia	case-linked data	2007	810	58	(7.2)	165	40	(24.2)
Lithuania	DRS Q	2007	1257	124	(9.9)	425	188	(44.2)
Malta	DRS Q	2007	17	1	(5.9)	1	0	(0.0)
Netherlands	case-linked data	2007	553	3	(0.5)	20	0	(0.0)
Portugal	case-linked data	2007	1474	21	(1.5)	118	13	(9.0)
Slovakia	case-linked data	2007	343	3	(0.9)	48	4	(8.3)
Slovenia	case-linked data	2007	176	0	(0.0)	13	0	(0.0)
Sweden	DRS Q	2007	347	12	(3.5)	18	3	(16.7)
United Kingdom	case-linked data	2007	3470	33	(1.0)	125	8	(6.4)
<b>Subtotal EU countries</b>			<b>14 822</b>	<b>384</b>	<b>(2.6)</b>	<b>1369</b>	<b>317</b>	<b>(23.2)</b>
<b>EEA</b>								
Iceland	DRS Q	2007	10	0	(0.0)	1	1	(100.0)
Liechtenstein	case-linked data	2007	5	0	(0.0)	0	0	-
Norway	DRS Q	2007	176	1	(0.6)	17	1	(5.9)
<b>Subtotal EEA countries</b>			<b>191</b>	<b>1</b>	<b>(0.5)</b>	<b>18</b>	<b>2</b>	<b>(11.1)</b>
<b>Total EU/EEA countries</b>			<b>15 013</b>	<b>385</b>	<b>(2.6)</b>	<b>1387</b>	<b>319</b>	<b>(23.0)</b>
<b>West, non-EU</b>								
Israel	DRS Q	2007	260	14	(5.4)	8	4	(50.0)
Switzerland	DRS Q	2007	264	5	(1.9)	37	3	(8.1)
<b>Subtotal West, non-EU</b>			<b>524</b>	<b>19</b>	<b>(3.6)</b>	<b>45</b>	<b>7</b>	<b>(15.6)</b>
<b>Total EU/EEA &amp; West</b>			<b>15 537</b>	<b>404</b>	<b>(2.6)</b>	<b>1432</b>	<b>326</b>	<b>(22.8)</b>
<b>Balkans</b>								
Montenegro	DRS Q	2007	76	0	(0.0)	11	2	(18.2)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases / areas)**

Geographical area	Source of data / coverage <sup>a</sup>	Year	Cases never treated			Cases previously treated		
			Cases with DST results	Multidrug resistant		Cases with DST results	Multidrug resistant	
				N	(%)		N	(%)
<b>EU</b>								
Bulgaria	DRS Q	2007	1010	26	(2.6)	161	40	(24.8)
Greece	DRS Q	2007	488	13	(2.7)	2	1	(50.0)
Hungary	case-linked data	2007	456	8	(1.8)	79	3	(3.8)
Ireland <sup>b</sup>	case-linked data	2007	95	2	(2.1)	18	2	(11.1)
Italy	DRS Q	2007	653	16	(2.5)	79	21	(26.6)
Romania <sup>c</sup>	case-linked data	2007	74	20	(27.0)	477	301	(63.1)
Spain	DRS Q	2007	792	21	(2.7)	47	12	(25.5)
<b>Balkans</b>								
Albania	DRS Q	2007	168	1	(0.6)	18	2	(11.1)
Serbia	DRS Q	2007	1107	6	(0.5)	185	18	(9.7)
The former Yugoslav Republic of Macedonia	DRS Q	2007	167	0	(0.0)	26	9	(34.6)
<b>East</b>								
Armenia	DRS Q	2007	429	50	(11.7)	213	75	(35.2)
Georgia	DRS Q	2007	1366	87	(6.4)	556	182	(32.7)
Kazakhstan	DRS Q	2007	7997	1596	(20.0)	7509	3972	(52.9)
Kyrgyzstan	DRS Q	2007	1018	168	(16.5)	200	154	(77.0)
Republic of Moldova (the)	DRS Q	2007	853	194	(22.7)	642	336	(52.3)
Uzbekistan	DRS Q	2007	385	119	(30.9)	463	365	(78.8)

DST=Drug Susceptibility Testing

NRL=National Reference Laboratory

DRS Q=Drug-Resistance Survey Questionnaire

<sup>a</sup> Nationwide unless otherwise specified (see also Table 22). Case-linked data means DST results provided to Joint TB Data Collection System as part of a case-based individual dataset<sup>b</sup> Used previous diagnosis instead of previous treatment<sup>c</sup> incomplete data at time of data collection

**Table 21: Laboratory practices and quality assurance for anti-TB Drug Susceptibility Testing (DST), Europe, 2007**

Geographical area	No. of labs performing:		DST methodology					External quality assurance for DST					
	Culture	DST	Non-radiometric proportion	Radiometric proportion	Resistance ratio	Absolute concentr.	Other	National <sup>a</sup>		International			
								No. labs	Year	% agreement of results for:			
				isoniazid		rifampicin							
<b>EU</b>													
Austria	10	10	-	-	-	-	-	No	-	Yes	2007	100	100
Belgium	155	17	X	X	-	-	-	Yes	17	Yes	2007	100	94
Bulgaria	33	22	-	-	-	-	X	No	-	Yes	2007	100	100
Cyprus	1	0	-	-	-	-	X	No	-	No	-	-	-
Czech Republic	44	14	X	-	-	-	X	Yes	14	Yes	2007	100	100
Denmark	1	1	-	X	-	-	-	No	-	Yes	2007	100	100
Estonia	3	2	-	-	-	-	X	No	-	Yes	2007	100	100
Finland	11	1	-	-	-	-	X	No	-	Yes	2007	100	100
France	300	100	X	-	-	-	-	Yes	30	Yes	2007	100	100
Germany	192	79	X	-	-	-	X	Yes	79	Yes	2007	100	100
Greece	25	3	X	-	-	-	-	No	-	Yes	2006	98	97
Hungary	12	7	X	X	-	-	-	Yes	10	Yes	2007	100	89
Ireland	13	3	-	X	-	-	-	No	-	Yes	2007	100	100
Italy	30	30	X	X	-	-	X	Yes	29	Yes	-	-	-
Latvia	8	1	-	-	-	X	X	No	-	Yes	2006	95	90
Lithuania	5	5	X	X	-	-	-	Yes	4	Yes	2007	100	100
Luxembourg	1	1	-	X	-	-	X	Yes	-	Yes	2006	100	100
Malta	1	0	-	-	-	-	-	No	-	No	-	-	-
Netherlands	53	17	X	-	-	-	-	No	-	Yes	2007	100	97
Poland	96	55	X	X	-	-	-	Yes	50	Yes	2005	100	100
Portugal	60	16	X	-	-	-	-	Yes	6	Yes	2006	100	100
Romania	106	55	X	-	-	X	-	Yes	7	Yes	2007	100	100
Slovakia	11	4	X	X	-	-	-	Yes	4	Yes	2007	98	99
Slovenia	4	1	X	-	-	-	X	No	-	Yes	2006	100	100
Spain <sup>b</sup>	-	-	X	-	-	-	-	No	-	Yes	2007	100	100
Sweden	5	5	-	X	-	-	-	Yes	5	Yes	2006	97	100
United Kingdom	300	7	-	-	X	-	X	Yes	7	Yes	2006	100	100
<b>EEA</b>													
Iceland <sup>b</sup>	1	0	-	-	-	-	-	No	-	No	-	-	-
Liechtenstein <sup>b</sup>	0	0	-	-	-	-	-	No	-	No	-	-	-
Norway	12	4	-	X	-	-	X	Yes	2	Yes	2007	100	100
<b>West, non-EU</b>													
Andorra <sup>b</sup>	0	0	-	-	-	-	-	No	-	No	-	-	-
Israel	19	2	-	-	X	-	-	Yes	2	Yes	2007	100	100
Monaco <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
San Marino <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Switzerland	35	15	-	X	-	-	X	Yes	10	Yes	2007	100	100
<b>Balkans</b>													
Albania	1	1	X	-	-	-	-	No	-	Yes	2005	100	100
Bosnia and Herzegovina <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Croatia <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Montenegro	1	1	X	-	-	-	-	No	-	No	-	-	-
Serbia	41	9	X	-	-	-	-	Yes	4	Yes	2007	100	100
The former Yugoslav Republic of Macedonia	3	1	X	-	-	-	-	No	-	No	-	-	-
Turkey <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
<b>East</b>													
Armenia	2	1	X	-	-	-	-	No	-	Yes	2007	100	100
Azerbaijan <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Belarus <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Georgia	2	1	X	-	-	-	-	No	-	Yes	2006	99	98
Kazakhstan	22	22	-	-	-	X	-	No	-	Yes	2007	100	100
Kyrgyzstan	10	1	-	-	-	X	-	No	-	Yes	2007	100	100
Republic of Moldova (the)	4	4	-	-	-	X	-	Yes	-	Yes	2007	100	100
Russian Federation (the) <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Tajikistan <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Turkmenistan <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Ukraine <sup>b</sup>	-	-	-	-	-	-	-	No	-	No	-	-	-
Uzbekistan	1	2	X	-	-	-	-	No	-	Yes	2007	94	100

<sup>a</sup> For countries with more than one DST laboratory<sup>b</sup> Incomplete data on the laboratory network

**Table 22: Characteristics of anti-TB drug resistance surveillance, Europe, 2007****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Source of data <sup>a</sup>	Geographical coverage	Culture confirmed cases (%) <sup>b</sup>	Cases included			Cases resistant to any anti-TB drug <sup>c</sup>	
				Total culture positive <sup>b</sup>	DST results (isoniazid & rifampicin)		N	%
					N	(%)		
<b>EU</b>								
Austria	case-linked data	national	59%	513	513	(100)	47	(9)
Belgium	case-linked data	national	78%	803	759	(95)	56	(7)
Cyprus	case-linked data	national	79%	33	29	(88)	8	(28)
Czech Republic	case-linked data	national	65%	563	532	(94)	36	(7)
Denmark	case-linked data	national	75%	292	290	(99)	24	(8)
Estonia	case-linked data	national	78%	381	381	(100)	144	(38)
Finland	case-linked data	national	76%	245	244	(100)	16	(7)
France	DRS Q	national	100%	1549	1526	(99)	160	(10)
Germany	case-linked data	national	-	3437	3242	(94)	339	(10)
Latvia	case-linked data	national	79%	993	975	(98)	275	(28)
Lithuania	DRS Q	national	-	1686	1686	(100)	533	(32)
Luxembourg	case-linked data	national	100%	32	32	(100)	1	(3)
Malta	DRS Q	national	-	19	19	(100)	4	(21)
Netherlands	case-linked data	national	76%	732	729	(100)	34	(5)
Portugal	DRS Q	national	-	1988	1592	(80)	180	(11)
Slovakia	case-linked data	national	57%	386	386	(100)	18	(5)
Slovenia	case-linked data	national	100%	189	189	(100)	9	(5)
Sweden	DRS Q	national	74%	365	365	(100)	45	(12)
United Kingdom	case-linked data	national	60%	5075	4731	(93)	338	(8)
<b>EEA</b>								
Iceland	DRS Q	national	79%	11	11	(100)	1	(9)
Liechtenstein	case-linked data	national	100%	5	5	(100)	0	(0)
Norway	DRS Q	national	80%	245	242	(99)	41	(17)
<b>West, non-EU</b>								
Israel	DRS Q	national	69%	273	268	(98)	62	(23)
Switzerland	DRS Q	national	82%	393	389	(99)	35	(9)
<b>Balkans</b>								
Montenegro	DRS Q	national	56%	89	87	(98)	5	(6)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases/areas)**

Geographical area	Source of data <sup>a</sup>	Geographical coverage	Culture confirmed cases (%) <sup>b</sup>	Cases included			Cases resistant to any anti-TB drug <sup>c</sup>	
				Total culture positive <sup>b</sup>	DST results (isoniazid & rifampicin)		N	%
					N	(%)		
<b>EU</b>								
Bulgaria	DRS Q	partial	78%	1171	1171	(100)	244	(21)
Greece	DRS Q	partial	32%	533	533	(100)	79	(15)
Hungary	case-linked data	national	44%	793	574	(72)	61	(12)
Ireland	case-linked data	national	50%	238	142	(60)	12	(12)
Italy	DRS Q	national	39%	1698	1698	(100)	275	(16)
Romania	case-linked data	partial	-	1375	1375	(100)	128	(9)
Spain	DRS Q	partial	-	3949	1375		128	
<b>Balkans</b>								
Albania	DRS Q	national	-	187	186	(99)	22	(12)
Serbia	DRS Q	partial	-	1292	1292	(100)	97	(8)
The former Yugoslav Republic of Macedonia	DRS Q	national	-	225	193	(86)	33	(17)
<b>East</b>								
Armenia	DRS Q	partial	-	642	642	(100)	329	(51)
Georgia	DRS Q	national	-	2126	1923	(90)	1555	(81)
Kazakhstan	DRS Q	national	-	23652	15506	(66)	9908	(64)
Kyrgyzstan	DRS Q	partial	-	1218	1218	(100)	777	(64)
Republic of Moldova (the)	DRS Q	national	-	2064	1495	(72)	793	(53)
Uzbekistan	DRS Q	partial	-	1300	848	(65)	672	(79)

DST=Drug Susceptibility Testing

NRL=National Reference Laboratory

DRS Q=Drug-Resistance Survey Questionnaire

<sup>a</sup> Case-linked data means DST results provided to Joint TB data collection as part of a case-based individual dataset; otherwise submitted as aggregate tables<sup>b</sup> In areas included in drug-resistance surveillance; may differ from data shown elsewhere in this report<sup>c</sup> Any resistance to isoniazid, rifampicin, ethambutol or streptomycin; expressed as a percentage of cases with DST results available. Testing for ethambutol and streptomycin not routine in all countries (see Tables 23-26)

**Table 23: Anti-TB drug resistance, all tuberculosis cases (combined resistance), Europe, 2007****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Cases with DST results	Cases resistant to at least:									
		isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>											
Austria	513	34	(6.6)	9	(1.8)	9	(1.8)	4	(0.8)	35	(6.8)
Belgium	759	49	(6.5)	14	(1.8)	14	(1.8)	22	(2.9)	3	(0.4)
Cyprus	29	7	(24.1)	3	(10.3)	3	(10.3)	0	(0.0)	5	(17.2)
Czech Republic	532	26	(4.9)	16	(3.0)	11	(2.1)	9	(1.7)	20	(3.8)
Denmark	290	24	(8.3)	2	(0.7)	2	(0.7)	2	(0.7)	4	(1.4)
Estonia	381	118	(31.0)	80	(21.0)	80	(21.0)	77	(20.2)	136	(35.7)
Finland	244	11	(4.5)	4	(1.6)	2	(0.8)	3	(1.2)	7	(2.9)
France	1526	101	(6.6)	22	(1.4)	20	(1.3)	8	(0.5)	100	(6.6)
Germany	3242	230	(7.1)	69	(2.1)	66	(2.0)	62	(1.9)	236	(7.3)
Latvia	975	245	(25.1)	100	(10.3)	98	(10.1)	90	(9.2)	233	(23.9)
Lithuania	1686	491	(29.1)	321	(19.0)	314	(18.6)	203	(12.0)	449	(26.6)
Luxembourg	32	1	(3.1)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Malta	19	2	(10.5)	1	(5.3)	1	(5.3)	1	(5.3)	4	(21.1)
Netherlands	729	31	(4.3)	5	(0.7)	3	(0.4)	4	(0.5)	0	(0.0)
Portugal	1592	110	(6.9)	38	(2.4)	34	(2.1)	23	(1.4)	131	(8.2)
Slovakia	386	16	(4.1)	8	(2.1)	7	(1.8)	3	(0.8)	3	(0.8)
Slovenia	189	3	(1.6)	0	(0.0)	0	(0.0)	0	(0.0)	8	(4.2)
Sweden	365	46	(12.6)	15	(4.1)	15	(4.1)	6	(1.6)	0	(0.0)
United Kingdom	4731	321	(6.8)	68	(1.4)	55	(1.2)	28	(0.6)	0	(0.0)
<b>EEA</b>											
Iceland	11	1	(9.1)	1	(9.1)	1	(9.1)	0	(0.0)	1	(9.1)
Liechtenstein	5	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Norway	242	25	(10.3)	4	(1.7)	3	(1.2)	3	(1.2)	24	(9.9)
<b>West, non-EU</b>											
Israel	268	48	(17.9)	20	(7.5)	18	(6.7)	11	(4.1)	45	(16.8)
Switzerland	389	28	(7.2)	11	(2.8)	9	(2.3)	9	(2.3)	10	(2.6)
<b>Balkans</b>											
Montenegro	87	2	(2.3)	2	(2.3)	2	(2.3)	0	(0.0)	4	(4.6)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases/areas)**

Geographical area	Cases with DST results	Cases resistant to at least:									
		isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>											
Bulgaria	1171	168	(14.3)	84	(7.2)	66	(5.6)	117	(10.0)	80	(6.8)
Greece	533	40	(7.5)	21	(3.9)	14	(2.6)	25	(4.7)	63	(11.8)
Hungary	574	42	(7.3)	13	(2.3)	11	(1.9)	11	(1.9)	32	(5.6)
Ireland	142	11	(7.7)	6	(4.2)	5	(3.5)	4	(2.8)	4	(2.8)
Italy	1698	173	(10.2)	71	(4.2)	56	(3.3)	39	(2.3)	159	(9.4)
Romania <sup>b</sup>	551	392	(71.1)	339	(61.5)	321	(58.3)	75	(13.6)	117	(21.2)
Spain	1375	107	(7.8)	65	(4.7)	59	(4.3)	26	(1.9)	57	(4.1)
<b>Balkans</b>											
Albania	186	11	(5.9)	5	(2.7)	3	(1.6)	5	(2.7)	13	(7.0)
Serbia	1292	48	(3.7)	34	(2.6)	24	(1.9)	18	(1.4)	64	(5.0)
The former Yugoslav Republic of Macedonia	193	17	(8.8)	9	(4.7)	9	(4.7)	14	(7.3)	19	(9.8)
<b>East</b>											
Armenia	642	259	(40.3)	141	(22.0)	125	(19.5)	62	(9.7)	267	(41.6)
Georgia	1923	533	(27.7)	319	(16.6)	269	(14.0)	239	(12.4)	1506	(78.3)
Kazakhstan	15506	8604	(55.5)	5944	(38.3)	5568	(35.9)	5021	(32.4)	8858	(57.1)
Kyrgyzstan	1218	560	(46.0)	382	(31.4)	322	(26.4)	338	(27.8)	716	(58.8)
Republic of Moldova (the)	1495	679	(45.4)	557	(37.3)	530	(35.5)	434	(29.0)	707	(47.3)
Uzbekistan	848	579	(68.3)	500	(59.0)	484	(57.1)	379	(44.7)	598	(70.5)

DST=Drug Susceptibility Testing

<sup>a</sup> Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin<sup>b</sup> incomplete data at time of data collection

**Table 24: Anti-TB drug resistance, previously untreated tuberculosis cases (primary resistance), Europe, 2007****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Cases with DST results	Cases resistant to at least:									
		isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>											
Austria	481	30	(6.2)	8	(1.7)	8	(1.7)	4	(0.8)	33	(6.9)
Belgium <sup>b</sup>	623	31	(5.0)	8	(1.3)	8	(1.3)	14	(2.2)	2	(0.3)
Cyprus	28	6	(21.4)	2	(7.1)	2	(7.1)	0	(0.0)	4	(14.3)
Czech Republic	487	22	(4.5)	13	(2.7)	8	(1.6)	7	(1.4)	16	(3.3)
Estonia	316	83	(26.3)	52	(16.5)	52	(16.5)	50	(15.8)	100	(31.6)
Finland	216	10	(4.6)	4	(1.9)	2	(0.9)	2	(0.9)	7	(3.2)
France	1255	81	(6.5)	12	(1.0)	12	(1.0)	2	(0.2)	76	(6.1)
Germany	2699	162	(6.0)	39	(1.4)	37	(1.4)	39	(1.4)	166	(6.2)
Latvia	810	182	(22.5)	60	(7.4)	58	(7.2)	58	(7.2)	175	(21.6)
Lithuania	1257	254	(20.2)	128	(10.2)	124	(9.9)	83	(6.6)	235	(18.7)
Malta	17	2	(11.8)	1	(5.9)	1	(5.9)	1	(5.9)	4	(23.5)
Netherlands	553	29	(5.2)	5	(0.9)	3	(0.5)	4	(0.7)	0	(0.0)
Portugal	1446	93	(6.4)	24	(1.7)	21	(1.5)	16	(1.1)	118	(8.2)
Slovakia	343	9	(2.6)	4	(1.2)	3	(0.9)	0	(0.0)	1	(0.3)
Slovenia	176	3	(1.7)	0	(0.0)	0	(0.0)	0	(0.0)	7	(4.0)
Sweden	347	40	(11.5)	12	(3.5)	12	(3.5)	5	(1.4)	0	(0.0)
United Kingdom <sup>b</sup>	3470	238	(6.9)	39	(1.1)	33	(1.0)	16	(0.5)	0	(0.0)
<b>EEA</b>											
Iceland	10	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Liechtenstein	5	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Norway	176	13	(7.4)	1	(0.6)	1	(0.6)	1	(0.6)	16	(9.1)
<b>West, non-EU</b>											
Israel	260	43	(16.5)	15	(5.8)	14	(5.4)	9	(3.5)	42	(16.2)
Switzerland	264	13	(4.9)	7	(2.7)	5	(1.9)	6	(2.3)	7	(2.7)
<b>Balkans</b>											
Montenegro	76	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	3	(3.9)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases/areas)**

Geographical area	Cases with DST results	Cases resistant to at least:									
		isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>											
Bulgaria	1010	109	(10.8)	41	(4.1)	26	(2.6)	85	(8.4)	49	(4.9)
Greece	488	37	(7.6)	18	(3.7)	13	(2.7)	21	(4.3)	59	(12.1)
Hungary	456	33	(7.2)	10	(2.2)	8	(1.8)	7	(1.5)	26	(5.7)
Ireland <sup>b</sup>	95	6	(6.3)	3	(3.2)	2	(2.1)	2	(2.1)	1	(1.1)
Italy <sup>b</sup>	653	62	(9.5)	23	(3.5)	16	(2.5)	10	(1.5)	57	(8.7)
Romania <sup>c</sup>	74	24	(32.4)	22	(29.7)	20	(27.0)	2	(2.7)	8	(10.8)
Spain	792	33	(4.2)	21	(2.7)	21	(2.7)	21	(2.7)	27	(3.4)
<b>Balkans</b>											
Albania	168	7	(4.2)	3	(1.8)	1	(0.6)	2	(1.2)	10	(6.0)
Serbia	1107	22	(2.0)	11	(1.0)	6	(0.5)	7	(0.6)	39	(3.5)
The former Yugoslav Republic of Macedonia	167	7	(4.2)	0	(0.0)	0	(0.0)	8	(4.8)	12	(7.2)
<b>East</b>											
Armenia	429	134	(31.2)	57	(13.3)	50	(11.7)	25	(5.8)	149	(34.7)
Georgia	1366	265	(19.4)	123	(9.0)	87	(6.4)	97	(7.1)	1040	(76.1)
Kazakhstan	7997	3166	(39.6)	1751	(21.9)	1596	(20.0)	1680	(21.0)	3478	(43.5)
Kyrgyzstan	1018	388	(38.1)	224	(22.0)	168	(16.5)	217	(21.3)	540	(53.0)
Republic of Moldova (the)	853	280	(32.8)	206	(24.2)	194	(22.7)	155	(18.2)	303	(35.5)
Uzbekistan	385	143	(37.1)	132	(34.3)	119	(30.9)	76	(19.7)	188	(48.8)

DST=Drug Susceptibility Testing

<sup>a</sup> Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin<sup>b</sup> Previously undiagnosed cases<sup>c</sup> Incomplete data at time of data collection

**Table 25: Combined anti-TB drug resistance, tuberculosis cases of national origin, Europe, 2007****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Criterion	Cases with DST results	Cases resistant to at least:									
			isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	citizenship	327	12	(3.7)	0	(0.0)	0	(0.0)	0	(0.0)	8	(2.4)
Belgium	birthplace	386	13	(3.4)	1	(0.3)	1	(0.3)	7	(1.8)	0	(0.0)
Cyprus	birthplace	6	1	(16.7)	1	(16.7)	1	(16.7)	0	(0.0)	1	(16.7)
Czech Republic	birthplace	433	13	(3.0)	9	(2.1)	7	(1.6)	7	(1.6)	9	(2.1)
Denmark <sup>b</sup>	birthplace	118	3	(2.5)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Estonia	birthplace	324	96	(29.6)	68	(21.0)	68	(21.0)	64	(19.8)	113	(34.9)
Finland	birthplace	178	6	(3.4)	2	(1.1)	1	(0.6)	1	(0.6)	2	(1.1)
France	birthplace	587	28	(4.8)	4	(0.7)	3	(0.5)	0	(0.0)	30	(5.1)
Germany	birthplace	1768	69	(3.9)	11	(0.6)	11	(0.6)	12	(0.7)	57	(3.2)
Latvia	birthplace	921	232	(25.2)	95	(10.3)	93	(10.1)	89	(9.7)	223	(24.2)
Lithuania	birthplace	1643	476	(29.0)	308	(18.7)	301	(18.3)	196	(11.9)	435	(26.5)
Luxembourg	birthplace	6	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Malta	citizenship	5	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	birthplace	199	2	(1.0)	0	(0.0)	0	(0.0)	1	(0.5)	0	(0.0)
Portugal	birthplace	1375	94	(6.8)	30	(2.2)	26	(1.9)	19	(1.4)	116	(8.4)
Slovakia	birthplace	390	15	(3.8)	7	(1.8)	6	(1.5)	3	(0.8)	2	(0.5)
Slovenia	birthplace	154	2	(1.3)	0	(0.0)	0	(0.0)	0	(0.0)	7	(4.5)
Sweden	birthplace	78	4	(5.1)	1	(1.3)	1	(1.3)	1	(1.3)	0	(0.0)
United Kingdom	birthplace	1113	63	(5.7)	10	(0.9)	5	(0.4)	2	(0.2)	0	(0.0)
<b>EEA</b>												
Iceland	birthplace	4	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Liechtenstein	birthplace	4	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Norway	birthplace	45	3	(6.7)	0	(0.0)	0	(0.0)	0	(0.0)	2	(4.4)
<b>West, non-EU</b>												
Israel	birthplace	38	7	(18.4)	4	(10.5)	4	(10.5)	2	(5.3)	9	(23.7)
Switzerland	birthplace	125	4	(3.2)	1	(0.8)	1	(0.8)	2	(1.6)	4	(3.2)
<b>Balkans</b>												
Montenegro	citizenship	87	2	(2.3)	2	(2.3)	2	(2.3)	0	(0.0)	4	(4.6)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases/areas)**

Geographical area	Criterion	Cases with DST results	Cases resistant to at least:									
			isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Bulgaria	birthplace	1170	168	(14.4)	84	(7.2)	66	(5.6)	117	(10.0)	80	(6.8)
Greece	birthplace	321	18	(5.6)	5	(1.6)	2	(0.6)	7	(2.2)	29	(9.0)
Hungary	birthplace	514	41	(8.0)	12	(2.3)	10	(1.9)	10	(1.9)	32	(6.2)
Ireland	birthplace	79	2	(2.5)	2	(2.5)	1	(1.3)	1	(1.3)	1	(1.3)
Italy	birthplace	539	51	(9.5)	20	(3.7)	14	(2.6)	10	(1.9)	45	(8.3)
Romania <sup>c</sup>	birthplace	551	392	(71.1)	339	(61.5)	321	(58.3)	75	(13.6)	117	(21.2)
Spain	birthplace	976	61	(6.3)	32	(3.3)	28	(2.9)	10	(1.0)	34	(3.5)
<b>Balkans</b>												
Albania	citizenship	183	11	(6.0)	5	(2.7)	3	(1.6)	5	(2.7)	13	(7.1)
Serbia	citizenship	1283	48	(3.7)	34	(2.7)	24	(1.9)	18	(1.4)	63	(4.9)
The former Yugoslav Republic of Macedonia	birthplace	191	17	(8.9)	9	(4.7)	9	(4.7)	13	(6.8)	18	(9.4)
<b>East</b>												
Armenia	citizenship	633	254	(40.1)	137	(21.6)	122	(19.3)	60	(9.5)	261	(41.2)
Georgia	citizenship	1923	533	(27.7)	319	(16.6)	269	(14.0)	239	(12.4)	1506	(78.3)
Kazakhstan	citizenship	15506	8604	(55.5)	5944	(38.3)	5568	(35.9)	5021	(32.4)	8858	(57.1)
Republic of Moldova (the)	citizenship	1495	679	(45.4)	557	(37.3)	530	(35.5)	434	(29.0)	707	(47.3)
Uzbekistan	citizenship	848	579	(68.3)	500	(59.0)	484	(57.1)	379	(44.7)	598	(70.5)

DST=Drug Susceptibility Testing

<sup>a</sup> Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin<sup>b</sup> By birthplace of parents for Danish born cases < 26 years of age<sup>c</sup> Incomplete data for Romania at time of data collection

**Table 26: Combined anti-TB drug resistance, tuberculosis cases of foreign origin, Europe, 2007****A) Culture and DST done routinely; DST results complete or nationwide sample of TB cases**

Geographical area	Criterion	Cases with DST results	Cases resistant to at least:									
			isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	citizenship	185	22	(11.9)	9	(4.9)	9	(4.9)	4	(2.2)	27	(14.6)
Belgium	birthplace	373	36	(9.7)	13	(3.5)	13	(3.5)	15	(4.0)	3	(0.8)
Cyprus	birthplace	23	6	(26.1)	2	(8.7)	2	(8.7)	0	(0.0)	4	(17.4)
Czech Republic	birthplace	99	13	(13.1)	7	(7.1)	4	(4.0)	2	(2.0)	11	(11.1)
Denmark <sup>b</sup>	birthplace	172	21	(12.2)	2	(1.2)	2	(1.2)	2	(1.2)	4	(2.3)
Estonia	birthplace	57	22	(38.6)	12	(21.1)	12	(21.1)	13	(22.8)	23	(40.4)
Finland	birthplace	46	5	(10.9)	2	(4.3)	1	(2.2)	2	(4.3)	5	(10.9)
France	birthplace	867	70	(8.1)	18	(2.1)	17	(2.0)	8	(0.9)	66	(7.6)
Germany	birthplace	1390	153	(11.0)	56	(4.0)	53	(3.8)	49	(3.5)	168	(12.1)
Latvia	birthplace	54	13	(24.1)	5	(9.3)	5	(9.3)	1	(1.9)	10	(18.5)
Lithuania	birthplace	43	15	(34.9)	13	(30.2)	13	(30.2)	7	(16.3)	14	(32.6)
Luxembourg	birthplace	18	1	(5.6)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Malta	citizenship	14	2	(14.3)	1	(7.1)	1	(7.1)	1	(7.1)	4	(28.6)
Netherlands	birthplace	371	29	(7.8)	5	(1.3)	3	(0.8)	3	(0.8)	0	(0.0)
Portugal	birthplace	212	15	(7.1)	7	(3.3)	7	(3.3)	3	(1.4)	14	(6.6)
Slovakia	birthplace	6	1	(16.7)	1	(16.7)	1	(16.7)	0	(0.0)	1	(16.7)
Slovenia	birthplace	35	1	(2.9)	0	(0.0)	0	(0.0)	0	(0.0)	1	(2.9)
Sweden	birthplace	287	42	(14.6)	14	(4.9)	14	(4.9)	5	(1.7)	0	(0.0)
United Kingdom	birthplace	3202	239	(7.5)	54	(1.7)	47	(1.5)	25	(0.8)	0	(0.0)
<b>EEA</b>												
Iceland	birthplace	7	1	(14.3)	1	(14.3)	1	(14.3)	0	(0.0)	1	(14.3)
Liechtenstein	birthplace	0	0	-	0	-	0	-	0	-	0	-
Norway	birthplace	197	22	(11.2)	4	(2.0)	3	(1.5)	3	(1.5)	22	(11.2)
<b>West, non-EU</b>												
Israel	birthplace	230	41	(17.8)	16	(7.0)	14	(6.1)	9	(3.9)	36	(15.7)
Switzerland	birthplace	260	23	(8.8)	10	(3.8)	8	(3.1)	7	(2.7)	6	(2.3)

**B) Culture or DST not routinely performed; DST results incomplete (selected cases/areas)**

Geographical area	Criterion	Cases with DST results	Cases resistant to at least:									
			isoniazid		rifampicin		isoniazid & rifampicin (multidrug resistant)		ethambutol <sup>a</sup>		streptomycin <sup>a</sup>	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Bulgaria	birthplace	1	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Greece	birthplace	212	22	(10.4)	16	(7.5)	12	(5.7)	18	(8.5)	34	(16.0)
Hungary	birthplace	26	1	(3.8)	1	(3.8)	1	(3.8)	1	(3.8)	0	(0.0)
Ireland	birthplace	56	9	(16.1)	4	(7.1)	4	(7.1)	3	(5.4)	3	(5.4)
Italy	birthplace	717	87	(12.1)	44	(6.1)	36	(5.0)	19	(2.6)	83	(11.6)
Spain	birthplace	399	52	(13.0)	32	(8.0)	30	(7.5)	15	(3.8)	26	(6.5)
<b>Balkans</b>												
Albania	citizenship	3	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Serbia	citizenship	9	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(11.1)
The former Yugoslav Republic of Macedonia	birthplace	2	0	(0.0)	0	(0.0)	0	(0.0)	1	(50.0)	1	(50.0)
<b>East</b>												
Armenia	citizenship	9	5	(55.6)	4	(44.4)	3	(33.3)	2	(22.2)	6	(66.7)

DST=Drug Susceptibility Testing

<sup>a</sup> Data shown only if DST results were available for > 90% of cases tested for isoniazid and rifampicin<sup>b</sup> By birthplace of parents for Danish born cases < 26 years of age



**Table 27: Combined multidrug resistance (MDR) by geographical origin, Europe, 2002–2007****A) National origin**

Geographical area	2002		2003		2004		2005		2006		2007	
	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>
<b>EU</b>												
Austria	0	(0.0)	2	(0.5)	0	(0.0)	1	(0.3)	1	(0.3)	0	(0.0)
Belgium	3	(0.8)	2	(0.6)	1	(0.3)	5	(1.3)	2	(0.5)	1	(0.3)
Bulgaria	0	(0.0)	44	(5.6)	47	(5.7)	47	(4.0)	53	(4.0)	66	(5.6)
Cyprus	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(16.7)
Czech Republic	8	(1.8)	1	(0.2)	2	(0.5)	7	(1.4)	3	(0.6)	7	(1.6)
Denmark	1	(0.9)	0	(0.0)	0	(0.0)	2	(1.5)	0	(0.0)	0	(0.0)
Estonia	116	(27.3)	82	(22.2)	70	(20.4)	64	(19.9)	45	(15.3)	68	(21.0)
Finland	1	(0.3)	1	(0.3)	0	(0.0)	1	(0.4)	1	(0.5)	1	(0.6)
France	4	(0.6)	6	(0.8)	4	(0.6)	3	(0.5)	6	(1.0)	3	(0.5)
Germany	17	(0.7)	13	(0.6)	10	(0.5)	18	(0.9)	12	(0.6)	11	(0.6)
Greece	0	(0.0)	0	(0.0)	7	(2.5)	7	(1.7)	5	(1.5)	2	(0.6)
Hungary	14	(2.6)	18	(3.5)	11	(2.3)	15	(3.9)	13	(2.4)	10	(1.9)
Ireland	0	(0.0)	0	(0.0)	1	(0.6)	1	(0.6)	1	(1.1)	1	(1.3)
Italy	19	(7.3)	20	(5.1)	11	(2.7)	7	(2.5)	0	(0.0)	14	(2.6)
Latvia	216	(18.7)	163	(14.6)	179	(17.7)	149	(15.1)	132	(14.5)	93	(10.1)
Lithuania	282	(22.0)	285	(21.5)	300	(19.6)	324	(19.2)	320	(18.4)	301	(18.3)
Netherlands	1	(0.3)	3	(1.2)	0	(0.0)	1	(0.4)	0	(0.0)	0	(0.0)
Portugal	28	(2.1)	19	(1.6)	25	(1.9)	23	(1.7)	10	(0.9)	26	(1.9)
Romania	818	(17.5)	585	(18.3)	790	(17.5)	807	(16.4)	731	(15.7)	321 <sup>b</sup>	(58.3) <sup>b</sup>
Slovakia	3	(0.6)	5	(1.3)	1	(0.3)	8	(2.7)	7	(1.8)	6	(1.5)
Slovenia	1	(0.4)	1	(0.5)	0	(0.0)	0	(0.0)	1	(0.7)	0	(0.0)
Spain	19	(1.1)	28	(1.9)	40	(3.2)	34	(2.9)	22	(2.4)	28	(2.9)
Sweden	1	(1.0)	1	(1.1)	0	(0.0)	0	(0.0)	0	(0.0)	1	(1.3)
United Kingdom	3	(0.3) <sup>c</sup>	6	(0.6)	9	(0.8)	7	(0.6)	5	(0.4)	5	(0.4)
<b>EEA</b>												
Norway	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(2.6)	0	(0.0)
<b>West, non-EU</b>												
Israel	3	(6.8)	1	(2.5)	0	(0.0)	1	(4.4)	1	(2.4)	4	(10.5)
Switzerland	0	(0.0)	0	(0.0)	1	(0.9)	1	(0.8)	0	(0.0)	1	(0.8)
<b>Balkans</b>												
Albania	5	(2.5)	2	(0.9)	0	(0.0)	1	(0.6)	1	(0.7)	3	(1.6)
Bosnia and Herzegovina	4	(0.4)	2	(0.2)	10	(0.9)	11	(1.0)	7	(0.6)	0	(0.0)
Croatia	5	(0.9)	5	(0.9)	2	(0.4)	3	(0.8)	2	(0.5)	0	(0.0)
Montenegro	0	(0.0)	0	(0.0)	0	(0.0)	2	(2.0)	2	(1.9)	2	(2.3)
Serbia	0	(0.0)	3	(0.9)	2	(0.7)	12	(0.9)	11	(0.9)	24	(1.9)
The former Yugoslav Republic of Macedonia	0	(0.0)	0	(0.0)	0	(0.0)	4	(3.2)	6	(3.8)	9	(4.7)
Turkey	0	(0.0)	0	(0.0)	0	(0.0)	189	(5.1)	241	(5.0)	-	-
<b>East</b>												
Armenia	118	(23.3)	117	(22.8)	149	(24.0)	161	(21.5)	215	(25.0)	122	(19.3)
Azerbaijan	8	(1.3)	8	(1.3)	17	(3.4)	0	(0.0)	212	(41.3)	0	(0.0)
Georgia	0	(0.0)	0	(0.0)	0	(0.0)	219	(15.4)	266	(14.1)	269	(14.0)
Kazakhstan	0	(0.0)	0	(0.0)	4 828	(28.0)	4 617	(27.9)	4 117	(26.2)	5 568	(35.9)
Kyrgyzstan	122	(19.1)	117	(17.5)	259	(27.5)	266	(26.8)	336	(30.1)	-	-
Republic of Moldova (the)	192	(18.8)	0	(0.0)	0	(0.0)	0	(0.0)	1 204	(41.8)	530	(35.5)
Turkmenistan	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	16	(15.5)	0	(0.0)
Uzbekistan	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	83	(28.1)	484	(57.1)

<sup>a</sup> As a proportion of cases in the same category of origin with susceptibility results available for isoniazid and rifampicin<sup>b</sup> Incomplete data for Romania<sup>c</sup> Excluding Scotland

## B) Foreign origin

Geographical area	2002		2003		2004		2005		2006		2007	
	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>	N	(%) <sup>a</sup>
<b>EU</b>												
Austria	3	(1.6)	10	(4.9)	19	(7.8)	12	(4.7)	9	(5.0)	9	(4.9)
Belgium	18	(4.4)	7	(1.6)	11	(2.4)	6	(1.6)	16	(3.7)	13	(3.5)
Bulgaria	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Cyprus	1	(33.3)	0	(0.0)	0	(0.0)	1	(7.1)	0	(0.0)	2	(8.7)
Czech Republic	2	(3.9)	1	(2.1)	4	(8.0)	6	(9.0)	6	(7.3)	4	(4.0)
Denmark	0	(0.0)	0	(0.0)	0	(0.0)	3	(1.6)	3	(1.8)	2	(1.2)
Estonia	22	(20.6)	24	(25.3)	20	(18.7)	14	(21.5)	7	(14.0)	12	(21.1)
Finland	2	(5.1)	1	(2.8)	0	(0.0)	0	(0.0)	1	(3.0)	1	(2.2)
France	19	(2.3)	17	(2.0)	22	(2.5)	21	(2.6)	24	(2.9)	17	(2.0)
Germany	76	(4.0)	77	(4.0)	91	(4.8)	85	(4.7)	64	(4.3)	53	(3.8)
Greece	0	(0.0)	0	(0.0)	7	(3.9)	5	(2.6)	8	(4.9)	12	(5.7)
Hungary	3	(27.3)	1	(8.3)	0	(0.0)	1	(6.7)	1	(8.3)	1	(3.8)
Ireland	0	(0.0)	1	(1.8)	1	(1.2)	2	(2.2)	2	(4.0)	4	(7.1)
Italy	14	(5.7)	20	(5.2)	12	(3.4)	15	(4.9)	0	(0.0)	36	(5.0)
Latvia	10	(12.1)	11	(15.1)	16	(18.4)	11	(16.7)	10	(17.5)	5	(9.3)
Lithuania	15	(25.0)	27	(36.5)	18	(30.0)	14	(25.5)	12	(23.5)	13	(30.2)
Luxembourg	0	(0.0)	1	(2.8)	1	(4.0)	0	(0.0)	0	(0.0)	0	(0.0)
Malta	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	2	(25.0)	1	(7.1)
Netherlands	1	(0.2)	5	(1.4)	3	(0.7)	6	(1.0)	5	(1.3)	3	(0.8)
Portugal	6	(2.9)	4	(1.9)	10	(5.2)	5	(2.6)	7	(4.8)	7	(3.3)
Slovakia	0	(0.0)	1	(20.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(16.7)
Slovenia	1	(1.6)	0	(0.0)	0	(0.0)	1	(2.2)	0	(0.0)	0	(0.0)
Spain	12	(4.4)	19	(6.8)	19	(6.0)	46	(8.6)	28	(6.9)	30	(7.5)
Sweden	3	(1.2)	6	(2.3)	6	(2.2)	4	(1.2)	3	(1.1)	14	(4.9)
United Kingdom	24	(1.0) <sup>c</sup>	38	(1.5)	30	(1.1)	30	(1.0)	45	(1.4)	47	(1.5)
<b>EEA</b>												
Iceland	0	(0.0)	1	(50.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(14.3)
Norway	7	(4.7)	3	(1.3)	4	(2.1)	3	(1.8)	2	(1.1)	3	(1.5)
<b>West, non-EU</b>												
Israel	14	(4.7)	19	(6.9)	12	(5.3)	11	(5.7)	18	(8.0)	14	(6.1)
Switzerland	10	(3.3)	11	(3.7)	4	(1.4)	3	(1.1)	4	(1.5)	8	(3.1)
<b>Balkans</b>												
Albania	0	(0.0)	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Croatia	1	(0.7)	0	(0.0)	0	(0.0)	0	(0.0)	1	(1.0)	-	-
Turkey	0	(0.0)	0	(0.0)	0	(0.0)	2	(11.8)	8	(15.7)	-	-
<b>East</b>												
Armenia	0	(0.0)	0	(0.0)	8	(66.7)	1	(12.5)	0	(0.0)	3	(33.3)

<sup>a</sup> As a proportion of cases in the same category of origin with susceptibility results available for isoniazid and rifampicin

<sup>c</sup> Excluding Scotland

**Table 28: Characteristics of treatment outcome monitoring (TOM) and treatment success, Europe, 2006****Complete cohorts with nationwide coverage**

Geographical area	Geographical coverage	Type of data <sup>a</sup>	Type of cohort	Total definite pulmonary cases			Overall treatment success
				TOM cohort <sup>b</sup>	Included in TOM cohorts		
					N	(%)	
<b>EU</b>							
Austria	national	case-based	culture	491	491	100%	69%
Belgium	national	case-based	culture	643	643	100%	69%
Cyprus	national	case-based	culture	20	20	100%	80%
Czech Republic	national	case-based	culture	532	532	100%	66%
Denmark	national	case-based	culture	224	224	100%	69%
Estonia	national	case-based	culture	331	331	100%	66%
Germany	national	case-based	culture	3067	3067	100%	74%
Hungary	national	case-based	culture	803	803	100%	48%
Ireland	national	case-based	culture	245	245	100%	59%
Latvia	national	case-based	culture	955	955	100%	71%
Lithuania	national	case-based	culture	1731	1731	100%	67%
Malta	national	case-based	culture	11	11	100%	100%
Netherlands	national	case-based	culture	525	525	100%	80%
Poland	national	case-based	culture	4989	4989	100%	72%
Portugal	national	case-based	culture	2048	2048	100%	86%
Romania	national	case-based	culture	17048	17048	100%	76%
Slovakia	national	case-based	culture	362	362	100%	80%
Slovenia	national	case-based	culture	152	152	100%	85%
United Kingdom	national	case-based	culture	3319	3319	100%	72%
<b>EEA</b>							
Iceland	national	case-based	culture	6	5	83%	67%
Norway	national	case-based	culture	144	142	99%	84%
<b>West, non-EU</b>							
Andorra	national	aggregated	culture	8	8	100%	75%
Israel	national	aggregated	smear or culture	221	218	99%	74%
<b>Balkans</b>							
Albania	national	aggregated	smear	199	194	97%	90%
Bosnia and Herzegovina	national	aggregated	culture	1086	1086	100%	97%
Croatia	national	aggregated	smear	459	898	196%	69%
Montenegro	national	aggregated	smear or culture	68	68	100%	35%
Serbia	national	aggregated	smear	1002	1002	100%	80%
The former Yugoslav Republic of Macedonia	national	aggregated	smear	215	215	100%	84%
Turkey	national	aggregated	smear	9132	9127	100%	88%
<b>East</b>							
Armenia	national	aggregated	smear	884	884	100%	58%
Azerbaijan	national	aggregated	smear	2726	2726	100%	53%
Belarus	national	aggregated	smear	1621	1621	100%	66%
Georgia	national	aggregated	smear	2986	2984	100%	65%
Kazakhstan	national	aggregated	smear	23091	23151	100%	38%
Kyrgyzstan	national	aggregated	smear	2281	2278	100%	80%
Republic of Moldova (the)	national	aggregated	smear	2787	2776	100%	51%
Russian Federation (the)	national	aggregated	smear	47996	47854	100%	51%
Tajikistan	national	aggregated	smear	3011	3007	100%	78%
Turkmenistan	national	aggregated	smear	1334	1334	100%	84%
Ukraine	national	aggregated	smear	16587	15177	91%	49%
Uzbekistan	national	aggregated	smear	8488	8449	100%	73%

<sup>a</sup> Case-linked data means outcome results provided as part of a case-based individual dataset<sup>b</sup> All cases notified in corresponding cohort in 2006; may differ from figures shown elsewhere in this report

Table 29: Treatment outcome, new definite pulmonary tuberculosis cases, Europe, 2006<sup>a</sup>

Geographical area	Cohort	Total included	Success		Died		Failed		Still on treatment		Defaulted, transferred or unknown	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	culture	461	318	(69)	56	(12)	0	(0)	25	(5)	62	(13)
Belgium <sup>b</sup>	culture	479	346	(72)	46	(10)	1	(0)	25	(5)	61	(13)
Cyprus	culture	20	16	(80)	0	(0)	0	(0)	0	(0)	4	(20)
Czech Republic	culture	520	346	(67)	32	(6)	0	(0)	32	(6)	110	(21)
Denmark <sup>b</sup>	culture	53	39	(74)	1	(2)	0	(0)	0	(0)	13	(25)
Estonia	culture	270	194	(72)	33	(12)	3	(1)	28	(10)	12	(4)
Germany	culture	2397	1854	(77)	298	(12)	2	(0)	60	(3)	183	(8)
Hungary	culture	674	336	(50)	75	(11)	85	(13)	88	(13)	90	(13)
Ireland <sup>b</sup>	culture	182	119	(65)	11	(6)	0	(0)	5	(3)	47	(26)
Latvia	culture	776	594	(77)	64	(8)	5	(1)	67	(9)	46	(6)
Lithuania	culture	1293	977	(76)	135	(10)	19	(1)	30	(2)	132	(10)
Malta	culture	11	11	(100)	0	(0)	0	(0)	0	(0)	0	(0)
Netherlands	culture	403	354	(88)	30	(7)	1	(0)	0	(0)	18	(4)
Poland	culture	4318	3286	(76)	262	(6)	38	(1)	11	(0)	721	(17)
Portugal	culture	1825	1593	(87)	89	(5)	2	(0)	51	(3)	90	(5)
Romania	culture	11675	10011	(86)	524	(4)	357	(3)	84	(1)	699	(6)
Slovakia	culture	287	237	(83)	30	(10)	9	(3)	4	(1)	7	(2)
Slovenia	culture	145	124	(86)	15	(10)	1	(1)	0	(0)	5	(3)
United Kingdom <sup>b</sup>	culture	2520	1868	(74)	158	(6)	0	(0)	130	(5)	364	(14)
<b>Subtotal EU countries</b>		<b>28309</b>	<b>22623</b>	<b>(80)</b>	<b>1859</b>	<b>(7)</b>	<b>523</b>	<b>(2)</b>	<b>640</b>	<b>(2)</b>	<b>2664</b>	<b>(9)</b>
<b>EEA</b>												
Iceland	culture	6	4	(67)	1	(17)	0	(0)	0	(0)	1	(17)
Norway	culture	120	103	(86)	5	(4)	0	(0)	1	(1)	11	(9)
<b>Subtotal EEA countries</b>		<b>126</b>	<b>107</b>	<b>(85)</b>	<b>6</b>	<b>(5)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(1)</b>	<b>12</b>	<b>(10)</b>
<b>Total EU/EEA countries</b>		<b>28435</b>	<b>22730</b>	<b>(80)</b>	<b>1865</b>	<b>(7)</b>	<b>523</b>	<b>(2)</b>	<b>641</b>	<b>(2)</b>	<b>2676</b>	<b>(9)</b>
<b>West, non-EU</b>												
Andorra	culture	8	6	(75)	0	(0)	0	(0)	0	(0)	2	(25)
Israel	smear or culture	209	155	(74)	30	(14)	1	(0)	3	(1)	20	(10)
<b>Subtotal West, non-EU</b>		<b>217</b>	<b>155</b>	<b>(74)</b>	<b>30</b>	<b>(14)</b>	<b>1</b>	<b>(0)</b>	<b>3</b>	<b>(1)</b>	<b>20</b>	<b>(10)</b>
<b>Total EU/EEA &amp; West</b>		<b>56961</b>	<b>45508</b>	<b>(80)</b>	<b>3754</b>	<b>(7)</b>	<b>1047</b>	<b>(2)</b>	<b>1284</b>	<b>(2)</b>	<b>5360</b>	<b>(9)</b>
<b>Balkans</b>												
Albania	smear	186	168	(90)	2	(1)	1	(1)	0	(0)	15	(8)
Bosnia and Herzegovina	culture	993	960	(97)	9	(1)	5	(1)	6	(1)	13	(1)
Croatia	smear	377	265	(70)	66	(18)	1	(0)	0	(0)	45	(12)
Montenegro	smear or culture	58	19	(33)	3	(5)	0	(0)	0	(0)	36	(62)
Serbia	smear	864	706	(82)	62	(7)	18	(2)	2	(0)	76	(9)
The former Yugoslav Republic of Macedonia	smear	178	155	(87)	9	(5)	1	(1)	0	(0)	13	(7)
Turkey	smear	7865	7132	(91)	214	(3)	56	(1)	136	(2)	327	(4)
<b>Total Balkans</b>		<b>10521</b>	<b>9405</b>	<b>(89)</b>	<b>365</b>	<b>(3)</b>	<b>82</b>	<b>(1)</b>	<b>144</b>	<b>(1)</b>	<b>525</b>	<b>(5)</b>
<b>East</b>												
Armenia	smear	580	402	(69)	27	(5)	58	(10)	0	(0)	93	(16)
Azerbaijan	smear	1454	867	(60)	32	(2)	49	(3)	0	(0)	506	(35)
Belarus	smear	1072	750	(70)	134	(13)	87	(8)	38	(4)	63	(6)
Georgia	smear	1813	1368	(75)	50	(3)	105	(6)	0	(0)	290	(16)
Kazakhstan	smear	6113	4408	(72)	269	(4)	976	(16)	0	(0)	460	(8)
Kyrgyzstan	smear	1833	1507	(82)	83	(5)	99	(5)	0	(0)	144	(8)
Republic of Moldova (the)	smear	1671	1041	(62)	177	(11)	180	(11)	30	(2)	243	(15)
Russian Federation (the)	smear	30745	17922	(58)	3832	(12)	4574	(15)	0	(0)	4417	(14)
Tajikistan	smear	1932	1636	(85)	88	(5)	104	(5)	0	(0)	104	(5)
Turkmenistan	smear	1155	998	(86)	66	(6)	49	(4)	0	(0)	42	(4)
Ukraine	smear	10351	6127	(59)	1233	(12)	1253	(12)	0	(0)	1738	(17)
Uzbekistan	smear	5756	4550	(79)	350	(6)	314	(5)	0	(0)	542	(9)
<b>Total East</b>		<b>64475</b>	<b>41576</b>	<b>(64)</b>	<b>6341</b>	<b>(10)</b>	<b>7848</b>	<b>(12)</b>	<b>68</b>	<b>(0)</b>	<b>8642</b>	<b>(13)</b>

<sup>a</sup> Countries with complete cohorts with nationwide coverage<sup>b</sup> No previous diagnosis of tuberculosis

Table 30: Treatment outcome, re-treated definite pulmonary tuberculosis cases, Europe, 2006<sup>a</sup>

Geographical area	Cohort	Total included	Success		Died		Failed		Still on treatment		Defaulted, transferred or unknown	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>												
Austria	culture	30	21	(70)	1	(3)	0	(0)	1	(3)	7	(23)
Belgium <sup>b</sup>	culture	50	26	(52)	6	(12)	0	(0)	7	(14)	11	(22)
Cyprus	culture	0	0	-	0	-	0	-	0	-	0	-
Czech Republic	culture	12	5	(42)	0	(0)	0	(0)	4	(33)	3	(25)
Denmark <sup>b</sup>	culture	23	17	(74)	1	(4)	0	(0)	0	(0)	5	(22)
Estonia	culture	61	25	(41)	10	(16)	1	(2)	7	(11)	18	(30)
Germany	culture	376	236	(63)	77	(20)	1	(0)	19	(5)	43	(11)
Hungary	culture	129	49	(38)	12	(9)	25	(19)	22	(17)	21	(16)
Ireland <sup>b</sup>	culture	23	9	(39)	2	(9)	0	(0)	1	(4)	11	(48)
Latvia	culture	179	88	(49)	30	(17)	3	(2)	42	(23)	16	(9)
Lithuania	culture	436	175	(40)	109	(25)	14	(3)	58	(13)	80	(18)
Malta	culture	0	0	-	0	-	0	-	0	-	0	-
Netherlands	culture	32	20	(63)	10	(31)	0	(0)	0	(0)	2	(6)
Poland	culture	671	316	(47)	50	(7)	7	(1)	6	(1)	292	(44)
Portugal	culture	223	173	(78)	18	(8)	1	(0)	13	(6)	18	(8)
Romania	culture	5373	2922	(54)	527	(10)	559	(10)	408	(8)	957	(18)
Slovakia	culture	63	43	(68)	15	(24)	1	(2)	3	(5)	1	(2)
Slovenia	culture	7	5	(71)	1	(14)	0	(0)	0	(0)	1	(14)
United Kingdom <sup>b</sup>	culture	204	130	(64)	22	(11)	0	(0)	18	(9)	34	(17)
<b>Subtotal EU countries</b>		<b>7892</b>	<b>4260</b>	<b>(54)</b>	<b>891</b>	<b>(11)</b>	<b>612</b>	<b>(8)</b>	<b>609</b>	<b>(8)</b>	<b>1520</b>	<b>(19)</b>
<b>EEA</b>												
Iceland	culture	0	0	-	0	-	0	-	0	-	0	-
Norway	culture	7	4	(57)	0	(0)	0	(0)	1	(14)	2	(29)
<b>Subtotal EEA countries</b>		<b>7</b>	<b>4</b>	<b>(57)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(14)</b>	<b>2</b>	<b>(29)</b>
<b>Total EU/EEA countries</b>		<b>7899</b>	<b>4264</b>	<b>(54)</b>	<b>891</b>	<b>(11)</b>	<b>612</b>	<b>(8)</b>	<b>610</b>	<b>(8)</b>	<b>1522</b>	<b>(19)</b>
<b>West, non-EU</b>												
Andorra	culture	0	0	-	0	-	0	-	0	-	0	-
Israel	smear or culture	4	4	(100)	0	(0)	0	(0)	0	(0)	0	(0)
<b>Subtotal West, non-EU</b>		<b>4</b>	<b>4</b>	<b>(100)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>
<b>Total EU/EEA &amp; West</b>		<b>7903</b>	<b>4268</b>	<b>(54)</b>	<b>891</b>	<b>(11)</b>	<b>612</b>	<b>(8)</b>	<b>610</b>	<b>(8)</b>	<b>1522</b>	<b>(19)</b>
<b>Balkans</b>												
Albania	smear	100	11	(11)	1	(1)	0	(0)	0	(0)	1	(1)
Bosnia and Herzegovina	culture	93	88	(95)	2	(2)	0	(0)	0	(0)	2	(2)
Croatia	smear	82	51	(62)	15	(18)	0	(0)	0	(0)	16	(20)
Montenegro	smear or culture	68	5	(7)	2	(3)	0	(0)	0	(0)	3	(4)
Serbia	smear	138	99	(72)	13	(9)	1	(1)	0	(0)	25	(18)
The former Yugoslav Republic of Macedonia	smear	37	25	(68)	5	(14)	2	(5)	0	(0)	3	(8)
Turkey	smear	1262	928	(74)	58	(5)	25	(2)	0	(0)	135	(11)
<b>Total Balkans</b>		<b>1780</b>	<b>1207</b>	<b>(68)</b>	<b>96</b>	<b>(5)</b>	<b>28</b>	<b>(2)</b>	<b>0</b>	<b>(0)</b>	<b>185</b>	<b>(10)</b>
<b>East</b>												
Armenia	smear	304	109	(36)	28	(9)	55	(18)	0	(0)	112	(37)
Azerbaijan	smear	1272	590	(46)	80	(6)	84	(7)	0	(0)	518	(41)
Belarus	smear	549	324	(59)	59	(11)	86	(16)	0	(0)	29	(5)
Georgia	smear	1153	560	(49)	94	(8)	204	(18)	0	(0)	295	(26)
Kazakhstan	smear	14 016	4 099	(29)	2 662	(19)	2 411	(17)	0	(0)	4 576	(33)
Kyrgyzstan	smear	448	317	(71)	36	(8)	45	(10)	0	(0)	50	(11)
Republic of Moldova (the)	smear	1105	386	(35)	182	(16)	224	(20)	0	(0)	268	(24)
Russian Federation (the)	smear	17 109	6 515	(38)	2 373	(14)	4 472	(26)	0	(0)	3 749	(22)
Tajikistan	smear	1 255	718	(57)	107	(9)	131	(10)	0	(0)	120	(10)
Turkmenistan	smear	504	121	(24)	22	(4)	15	(3)	0	(0)	21	(4)
Ukraine	smear	4 826	2 071	(43)	692	(14)	1 013	(21)	0	(0)	1 050	(22)
Uzbekistan	smear	1 378	752	(55)	166	(12)	161	(12)	0	(0)	185	(13)
<b>Total East</b>		<b>43 919</b>	<b>16 562</b>	<b>(38)</b>	<b>6 501</b>	<b>(15)</b>	<b>8 901</b>	<b>(20)</b>	<b>0</b>	<b>(0)</b>	<b>10 973</b>	<b>(25)</b>

<sup>a</sup> Countries with complete cohorts with nationwide coverage<sup>b</sup> No previous diagnosis of tuberculosis

**Table 31: Treatment outcome by geographical origin, all pulmonary cases, EU/EEA countries, 2006<sup>a</sup>****A) National origin**

Geographical area	Cases	Success		Died		Failed or still on treatment		Defaulted, transferred or unknown	
		N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>									
Austria	480	340	(71)	73	(15)	15	(3)	52	(11)
Belgium <sup>b</sup>	329	227	(69)	64	(19)	11	(3)	89	(27)
Cyprus	6	6	(100)	0	(0)	0	(0)	0	(0)
Czech Republic	656	471	(72)	32	(5)	20	(3)	133	(20)
Denmark	141	94	(67)	6	(4)	2	(1)	39	(28)
Estonia	352	244	(69)	41	(12)	34	(10)	33	(9)
Germany	2405	1739	(72)	420	(17)	59	(2)	187	(8)
Hungary	1691	1016	(60)	183	(11)	322	(19)	170	(10)
Ireland	227	132	(58)	26	(11)	5	(2)	64	(28)
Latvia	2055	0	(0)	0	(0)	0	(0)	2055	(100)
Lithuania	1110	832	(75)	102	(9)	110	(10)	66	(6)
Malta	2173	1518	(70)	291	(13)	121	(6)	243	(11)
Netherlands	215	177	(82)	33	(15)	0	(0)	5	(2)
Poland	7840	5871	(75)	425	(5)	76	(1)	1468	(19)
Portugal	2305	1989	(86)	138	(6)	84	(4)	94	(4)
Romania	23159	17698	(76)	1566	(7)	1451	(6)	2444	(11)
Slovakia	589	498	(85)	61	(10)	18	(3)	12	(2)
Slovenia	145	118	(81)	21	(14)	1	(1)	5	(3)
United Kingdom	1437	994	(69)	181	(13)	72	(5)	190	(13)
<b>Subtotal EU countries</b>	<b>47315</b>	<b>33964</b>	<b>(72)</b>	<b>3663</b>	<b>(8)</b>	<b>2401</b>	<b>(5)</b>	<b>7349</b>	<b>(16)</b>
<b>EEA</b>									
Iceland	2	1	(50)	1	(50)	0	(0)	0	(0)
Norway	45	34	(76)	8	(18)	1	(2)	2	(4)
<b>Total EU/EEA countries</b>	<b>47362</b>	<b>33999</b>	<b>(72)</b>	<b>3672</b>	<b>(8)</b>	<b>2402</b>	<b>(5)</b>	<b>7351</b>	<b>(16)</b>

**B) Incomplete cohorts or partial geographical coverage**

Geographical area	Cases	Success		Died		Failed or still on treatment		Defaulted, transferred or unknown	
		N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>									
Austria	281	199	(71)	12	(4)	18	(6)	52	(19)
Belgium <sup>b</sup>	314	217	(69)	8	(3)	28	(9)	123	(39)
Cyprus	25	17	(68)	0	(0)	0	(0)	8	(32)
Czech Republic	108	70	(65)	0	(0)	16	(15)	22	(20)
Denmark	138	103	(75)	1	(1)	0	(0)	34	(25)
Estonia	66	46	(70)	9	(14)	6	(9)	5	(8)
Germany	1642	1262	(77)	105	(6)	48	(3)	227	(14)
Hungary	72	43	(60)	5	(7)	11	(15)	13	(18)
Ireland	107	53	(50)	4	(4)	2	(2)	48	(45)
Lithuania	1773	0	(0)	0	(0)	0	(0)	1773	(100)
Malta	67	48	(72)	6	(9)	8	(12)	5	(7)
Netherlands	66	46	(70)	11	(17)	2	(3)	7	(11)
Poland	374	319	(85)	30	(8)	1	(0)	24	(6)
Portugal	39	11	(28)	0	(0)	0	(0)	28	(72)
Romania	302	241	(80)	7	(2)	17	(6)	37	(12)
Slovakia	8	7	(88)	1	(13)	0	(0)	0	(0)
Slovenia	29	26	(90)	1	(3)	0	(0)	2	(7)
United Kingdom	2671	1984	(74)	115	(4)	139	(5)	433	(16)
<b>Subtotal EU countries</b>	<b>8082</b>	<b>4692</b>	<b>(58)</b>	<b>315</b>	<b>(4)</b>	<b>296</b>	<b>(4)</b>	<b>2841</b>	<b>(35)</b>
<b>EEA</b>									
Iceland	5	4	(80)	0	(0)	0	(0)	1	(20)
Norway	140	118	(84)	2	(1)	2	(1)	18	(13)
<b>Total EU/EEA countries</b>	<b>8227</b>	<b>4814</b>	<b>(59)</b>	<b>317</b>	<b>(4)</b>	<b>298</b>	<b>(4)</b>	<b>2860</b>	<b>(35)</b>

<sup>a</sup> Including countries with case-based data on geographical origin and outcome data for pulmonary and extrapulmonary cases<sup>b</sup> Culture-confirmed cases only

**Table 32: Treatment outcome by site of disease, EU/EEA countries, 2006<sup>a</sup>****A) All pulmonary**

Geographical area	Cases	Success		Died		Failed or still on treatment		Defaulted, transferred or unknown	
		N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>									
Austria	761	539	(71)	85	(11)	33	(4)	104	(14)
Cyprus	31	23	(74)	0	(0)	0	(0)	8	(26)
Czech Republic	764	541	(71)	32	(4)	36	(5)	155	(20)
Denmark	280	197	(70)	7	(3)	2	(1)	74	(26)
Estonia	418	290	(69)	50	(12)	40	(10)	38	(9)
Germany	4189	3079	(74)	550	(13)	116	(3)	444	(11)
Hungary	1763	1059	(60)	188	(11)	333	(19)	183	(10)
Ireland	338	186	(55)	30	(9)	7	(2)	115	(34)
Latvia	1204	880	(73)	135	(11)	118	(10)	71	(6)
Lithuania	2239	1564	(70)	302	(13)	123	(5)	250	(11)
Malta	24	24	(100)	0	(0)	0	(0)	0	(0)
Netherlands	599	504	(84)	64	(11)	1	(0)	30	(5)
Poland	7879	5882	(75)	425	(5)	76	(1)	1496	(19)
Portugal	2607	2230	(86)	145	(6)	101	(4)	131	(5)
Romania	23159	17698	(76)	1566	(7)	1451	(6)	2444	(11)
Slovakia	597	505	(85)	62	(10)	18	(3)	12	(2)
Slovenia	174	144	(83)	22	(13)	1	(1)	7	(4)
United Kingdom	4591	3276	(71)	344	(7)	235	(5)	736	(16)
<b>Subtotal EU countries</b>	<b>51617</b>	<b>38621</b>	<b>(75)</b>	<b>4007</b>	<b>(8)</b>	<b>2691</b>	<b>(5)</b>	<b>6298</b>	<b>(12)</b>
<b>EEA</b>									
Iceland	7	5	(71)	1	(14)	0	(0)	1	(14)
Norway	185	152	(82)	10	(5)	3	(2)	20	(11)
<b>Total EU/EEA countries</b>	<b>51809</b>	<b>38778</b>	<b>(75)</b>	<b>4018</b>	<b>(8)</b>	<b>2694</b>	<b>(5)</b>	<b>6319</b>	<b>(12)</b>

**B) All extrapulmonary**

Geographical area	Cases	Success		Died		Failed or still on treatment		Defaulted, transferred or unknown	
		N	(%)	N	(%)	N	(%)	N	(%)
<b>EU</b>									
Austria	145	103	(71)	18	(12)	8	(6)	16	(11)
Cyprus	6	4	(67)	2	(33)	0	(0)	0	(0)
Czech Republic	209	156	(75)	7	(3)	4	(2)	42	(20)
Denmark	106	66	(62)	2	(2)	0	(0)	38	(36)
Estonia	37	28	(76)	4	(11)	5	(14)	0	(0)
Germany	1169	909	(78)	101	(9)	30	(3)	129	(11)
Hungary	92	59	(64)	10	(11)	17	(18)	6	(7)
Ireland	125	65	(52)	5	(4)	4	(3)	51	(41)
Latvia	124	113	(91)	5	(4)	4	(3)	2	(2)
Lithuania	320	286	(89)	11	(3)	0	(0)	23	(7)
Malta	6	6	(100)	0	(0)	0	(0)	0	(0)
Netherlands	370	332	(90)	8	(2)	0	(0)	30	(8)
Poland	708	564	(80)	23	(3)	8	(1)	113	(16)
Portugal	845	726	(86)	45	(5)	29	(3)	45	(5)
Romania	3777	3363	(89)	131	(3)	28	(1)	255	(7)
Slovakia	133	118	(89)	13	(10)	0	(0)	2	(2)
Slovenia	41	33	(80)	7	(17)	0	(0)	1	(2)
United Kingdom	3606	2729	(76)	139	(4)	203	(6)	535	(15)
<b>Subtotal EU countries</b>	<b>11819</b>	<b>9660</b>	<b>(82)</b>	<b>531</b>	<b>(4)</b>	<b>340</b>	<b>(3)</b>	<b>1288</b>	<b>(11)</b>
<b>EEA</b>									
Iceland	6	6	(100)	0	(0)	0	(0)	0	(0)
Norway	104	97	(93)	3	(3)	1	(1)	3	(3)
<b>Total EU/EEA countries</b>	<b>11929</b>	<b>9763</b>	<b>(82)</b>	<b>534</b>	<b>(4)</b>	<b>341</b>	<b>(3)</b>	<b>1291</b>	<b>(11)</b>

<sup>a</sup> Including countries with case-based outcome data for pulmonary and extrapulmonary cases

**Table 33: Tuberculosis deaths by localisation of disease, Europe, latest available year<sup>a</sup>**

Geographical area	Year	ICD death coding system	Respiratory		Miliary		Other		Total	Other deaths attributed to late effects of TB <sup>b</sup>	Ratio of TB deaths to TB case reports <sup>c</sup>
			N	(%)	N	(%)	N	(%)			
<b>EU</b>											
Austria	2006	ICD-10	39	(83)	5	(11)	3	(6)	47	5	0.05
Bulgaria	2004	ICD-9	232	(87)	0	(0)	36	(13)	268	1	0.08
Cyprus	2006	ICD-10	1	(100)	0	(0)	0	(0)	1	-	0.03
Czech Republic	2005	ICD-10	61	(90)	6	(9)	1	(1)	68	3	0.07
Denmark	2001	ICD-10	18	(78)	1	(4)	4	(17)	23	15	0.05
Estonia	2005	ICD-10	44	(90)	4	(8)	1	(2)	49	2	0.09
Finland	2006	ICD-10	14	(67)	6	(29)	1	(5)	21	39	0.07
France	2005	ICD-10	342	(81)	32	(8)	47	(11)	421	400	0.08
Germany	2006	ICD-10	290	(86)	20	(6)	26	(8)	336	101	0.06
Greece	2006	ICD-9	78	(96)	0	(0)	3	(4)	81	0	0.12
Hungary	2005	ICD-10	177	(93)	10	(5)	4	(2)	191	67	0.10
Ireland	2006	ICD-9	17	(85)	0	(0)	3	(15)	20	12	0.04
Italy	2003	ICD-10	320	(81)	8	(2)	68	(17)	396	38	0.09
Latvia	2006	ICD-10	169	(97)	4	(2)	2	(1)	175	13	0.13
Lithuania	2006	ICD-10	263	(71)	101	(27)	4	(1)	368	1	0.14
Luxembourg	2005	ICD-10	1	(100)	0	(0)	0	(0)	1	0	0.03
Malta	2005	ICD-10	1	(100)	0	(0)	0	(0)	1	0	0.04
Netherlands	2006	ICD-10	25	(81)	2	(6)	4	(13)	31	44	0.03
Poland	2006	ICD-10	716	(97)	11	(1)	12	(2)	739	34	0.09
Portugal	2003	ICD-10	181	(86)	8	(4)	22	(10)	211	141	0.05
Romania	2007	ICD-10	1571	(98)	14	(1)	21	(1)	1606	9	0.06
Slovakia	2005	ICD-10	44	(94)	2	(4)	1	(2)	47	1	0.06
Slovenia	2006	ICD-10	12	(67)	2	(11)	4	(22)	18	1	0.08
Spain	2005	ICD-10	270	(77)	35	(10)	44	(13)	349	120	0.04
Sweden	2005	ICD-10	10	(67)	4	(27)	1	(7)	15	33	0.03
United Kingdom	2006	ICD-10	299	(74)	47	(12)	57	(14)	403	65	0.05
<b>EEA</b>											
Iceland	2006	ICD-10	1	(100)	0	(0)	0	(0)	1	2	0.08
Norway	2005	ICD-10	8	(80)	2	(20)	0	(0)	10	37	0.03
<b>West, non-EU</b>											
Israel	2004	ICD-10	14	(93)	1	(7)	0	(0)	15	23	0.03
San Marino	2005	ICD-9	0	(0)	0	(0)	0	(0)	0	0	0.00
Switzerland	2005	ICD-10	16	(76)	1	(5)	4	(19)	21	-	0.04
<b>Balkans</b>											
Albania	2004	ICD-9	10	(83)	0	(0)	2	(17)	12	6	0.02
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	-
Croatia	2006	ICD-10	138	(98)	3	(2)	0	(0)	141	7	0.12
Montenegro <sup>d</sup>	-	-	-	-	-	-	-	-	-	-	-
Serbia <sup>d</sup>	2002	ICD-10	253	(95)	8	(3)	6	(2)	267	-	0.09
The former Yugoslav Republic of Macedonia	2003	ICD-9	73	(94)	0	(0)	5	(6)	78	0	0.11
<b>East</b>											
Armenia	2003	ICD-9	0	(0)	0	(0)	0	(0)	155	-	0.10
Azerbaijan	2004	ICD-10	798	(98)	0	(0)	15	(2)	813	0	0.13
Belarus	2003	ICD-10	968	(94)	0	(0)	59	(6)	1027	0	0.17
Georgia	2001	ICD-10	242	(95)	0	(0)	13	(5)	255	0	0.04
Kazakhstan	2006	ICD-10	2972	(96)	0	(0)	135	(4)	3107	0	0.07
Kyrgyzstan	2006	ICD-10	785	(93)	35	(4)	20	(2)	840	0	0.13
Republic of Moldova (the)	2006	ICD-10	603	(97)	6	(1)	13	(2)	622	7	0.10
Russian Federation (the)	2006	ICD-10	25102	(88)	0	(0)	3372	(12)	28474	0	0.19
Tajikistan	2005	ICD-9	0	(0)	0	(0)	0	(0)	622	0	0.09
Turkmenistan	-	-	-	-	-	-	-	-	-	0	-
Ukraine	2005	ICD-10	8434	(71)	0	(0)	3462	(29)	11896	-	0.27
Uzbekistan	2005	ICD-10	2741	(98)	5	(0)	38	(1)	2784	1	0.10

<sup>a</sup> Since 2000. Source: WHO Mortality Database (WHOSIS, update August 2008). Codes used: ICD-9 010-018 (BTL 020-025,029) or ICD-10 A15-19.<sup>b</sup> Underlying cause of death being sequelae of TB (ICD-9 137 [BTL 077] or ICD-10 B90,P37.0) or pneumoconiosis associated with TB (ICD-10 J65) update October 2007<sup>c</sup> Ratio of total TB deaths to TB cases reported in the corresponding year<sup>d</sup> Data from Montenegro included with Serbia



**Table 34: Tuberculosis deaths and mortality rates per 100 000 population), Europe, 2001–2006<sup>a</sup>**

Geographical area	2001		2002		2003		2004		2005		2006	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
<b>EU</b>												
Austria	56	0.70	66	0.82	45	0.55	45	0.55	54	0.66	56	0.68
Belgium	-	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	299	3.73	287	3.65	276	3.53	269	3.46	-	-	270	3.51
Cyprus	0	0.00	-	-	-	3.00	3	0.41	-	-	2	0.26
Czech Republic	94	0.92	83	0.81	81	0.79	69	0.68	69	0.67	52	0.51
Denmark	38	0.71	-	-	-	-	-	-	-	-	9	0.17
Estonia	99	7.26	88	6.48	95	7.02	100	7.41	51	3.79	67	4.99
Finland	97	1.87	97	1.87	82	1.57	68	1.30	77	1.47	60	1.14
France	1049	1.71	947	1.54	942	1.52	824	1.32	850	1.35	-	-
Germany	536	0.65	507	0.61	512	0.62	441	0.53	450	0.55	433	0.53
Greece	105	0.96	86	0.78	107	0.97	75	0.68	90	0.81	81	0.73
Hungary	377	3.70	325	3.20	300	2.96	300	2.97	256	2.54	-	-
Ireland	32	0.83	41	1.04	37	0.93	36	0.88	27	0.65	40	0.94
Italy	439	0.77	451	0.79	498	0.86	-	-	-	-	-	-
Latvia	281	11.93	210	8.98	221	9.50	183	7.91	183	7.95	182	7.95
Lithuania	353	10.14	338	9.74	340	9.84	309	8.99	367	10.75	369	10.87
Luxembourg	5	1.13	3	0.67	2	0.44	0	0.00	1	0.22	0	0.00
Malta	1	0.25	3	0.76	1	0.25	1	0.25	1	0.25	1	0.25
Netherlands	87	0.54	72	0.45	72	0.44	78	0.48	70	0.43	76	0.46
Poland	1061	2.77	940	2.46	943	2.47	850	2.23	834	2.19	759	1.99
Portugal	344	3.34	345	3.33	349	3.34	306	2.91	-	-	22	0.21
Romania	2387	10.79	2339	10.73	2237	10.29	2089	9.63	1784	8.25	1704	7.89
Slovakia	57	1.06	64	1.19	66	1.23	52	0.97	47	0.87	-	-
Slovenia	26	1.31	22	1.10	28	1.40	12	0.60	18	0.90	18	0.90
Spain	490	1.20	491	1.19	473	1.13	445	1.04	475	1.09	-	-
Sweden	86	0.97	96	1.08	57	0.64	49	0.54	58	0.64	-	-
United Kingdom	494	0.84	503	0.85	509	0.85	447	0.75	452	0.75	476	0.79
<b>EEA</b>												
Iceland	3	1.05	3	1.04	6	2.07	3	1.03	2	0.67	2	0.66
Liechtenstein	-	-	-	-	-	-	-	-	-	-	-	-
Norway	50	1.11	33	0.73	52	1.14	44	0.96	42	0.91	-	-
<b>West, non-EU</b>												
Andorra	-	-	-	-	-	-	-	-	-	-	-	-
Israel	52	0.82	40	-	47	0.71	40	0.59	-	-	-	-
Monaco	-	-	-	-	-	-	-	-	-	-	-	-
San Marino	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	38	0.53	33	0.45	27	0.37	28	0.38	29	0.39	-	-
<b>Balkans</b>												
Albania	15	0.49	14	0.45	13	0.42	18	0.58	-	-	-	-
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	806	20.97
Croatia	145	3.26	181	4.07	160	3.60	161	3.62	116	2.61	142	3.20
Montenegro <sup>b</sup>	-	-	-	-	-	-	-	-	-	-	5	0.25
Serbia <sup>b</sup>	-	-	-	-	-	-	233	3.12	249	3.35	203	2.74
The former Yugoslav Republic of Macedonia	86	4.23	71	3.50	78	3.85	-	-	-	-	31	1.52
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
<b>East</b>												
Armenia	148	4.60	170	5.29	159	4.95	-	-	-	-	153	4.75
Azerbaijan	1107	13.65	1019	12.47	970	11.78	813	9.79	-	-	254	2.99
Belarus	829	8.31	938	9.45	1027	10.40	1087	11.06	1068	10.93	977	10.04
Georgia	255	5.81	-	-	-	-	-	-	-	-	129	2.93
Kazakhstan	3617	24.02	3772	25.01	3536	23.33	3305	21.65	3571	23.22	3107	20.06
Kyrgyzstan	1170	23.23	1003	19.71	919	17.88	812	15.65	797	15.20	840	15.85
Republic of Moldova (the)	545	15.01	570	15.73	563	15.58	633	17.56	662	18.41	629	17.54
Russian Federation (the)	28850	19.76	31197	21.45	31405	21.71	30840	21.44	32220	22.51	28474	19.98
Tajikistan	754	12.02	648	10.21	670	10.43	617	9.49	622	9.44	-	-
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	11336	23.40	10178	21.19	10704	22.47	11105	23.49	11896	25.35	10417	22.31
Uzbekistan	3452	13.67	3495	13.64	3306	12.72	2855	10.82	2784	10.39	2246	8.26

<sup>a</sup> Source: WHO Mortality Database WHOSIS, update August 2008). Codes used: ICD-9 010-018,137 BTL 020-025,029) or ICD-10 A15-19,B90

<sup>b</sup> Data from Montenegro included with Serbia

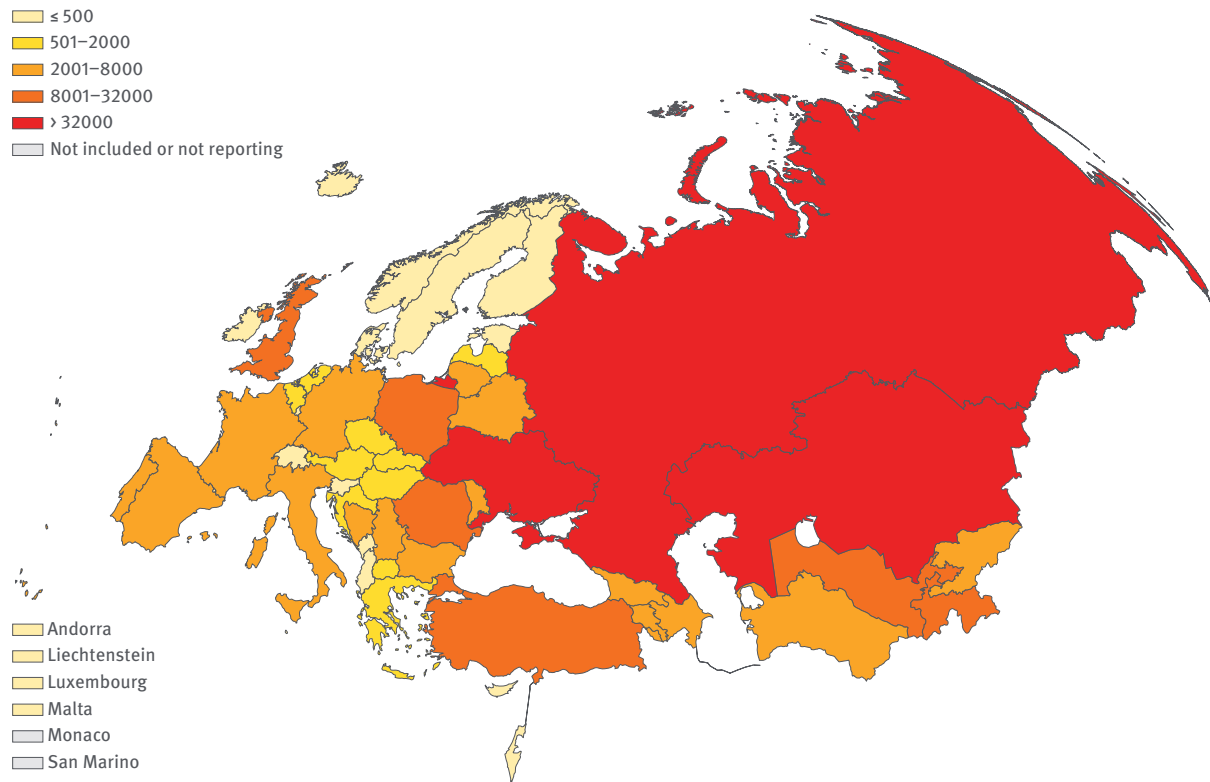
Countries in italics had coverage or/and estimated data completeness < 80% in last year reported



## 4. Maps & figures

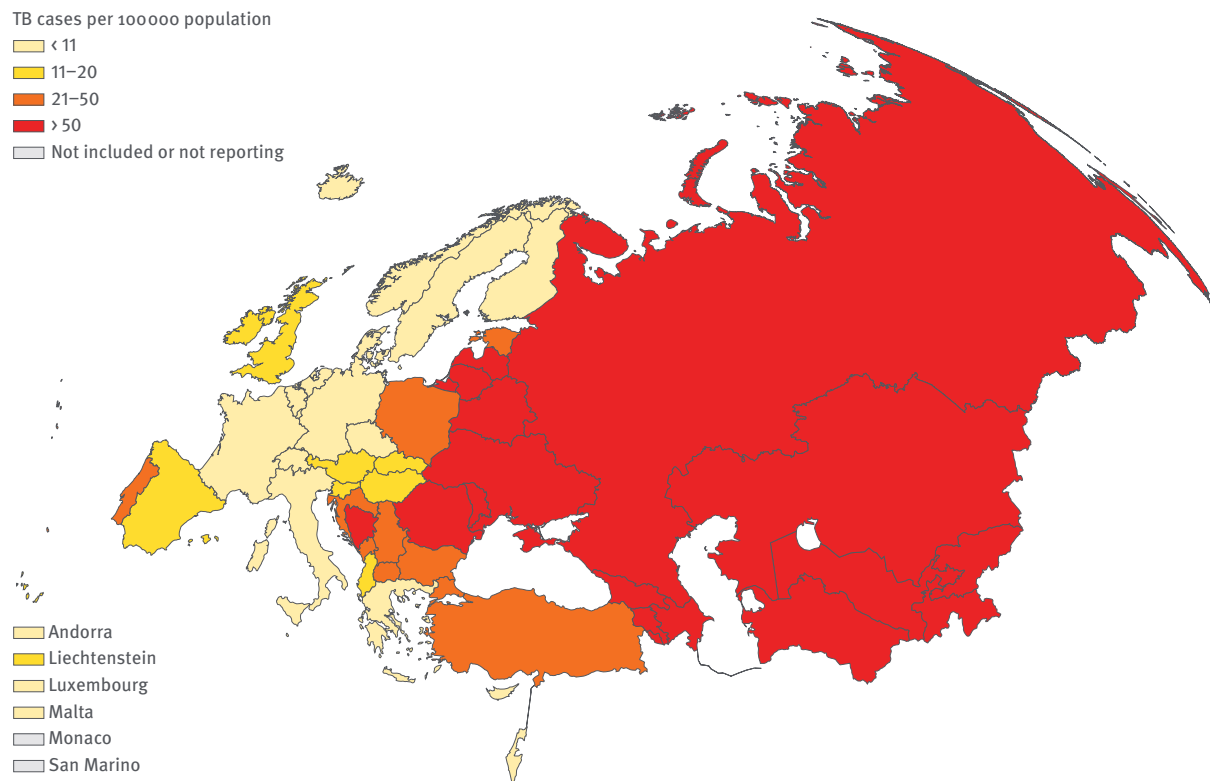


**Map 1: Total TB notifications, Europe, 2007<sup>a</sup>**



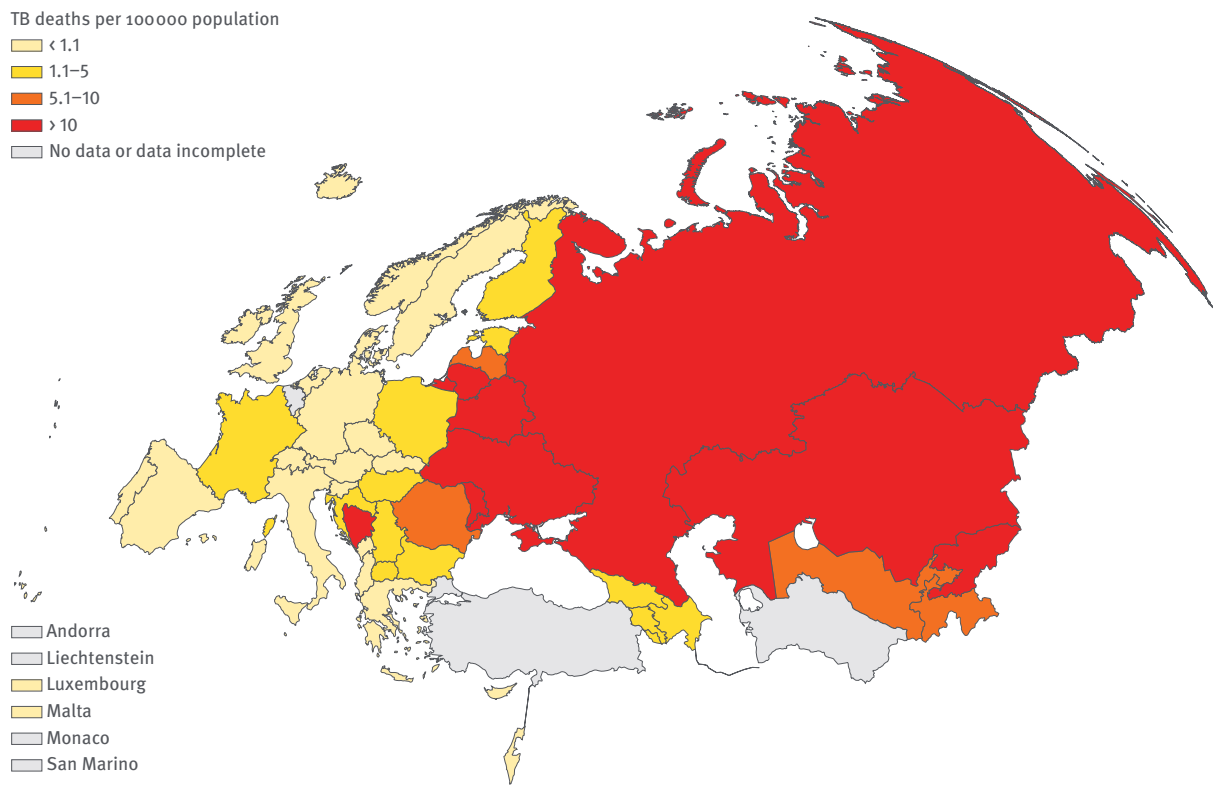
<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

**Map 2: Total TB notification rates, Europe, 2007<sup>a</sup>**



<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

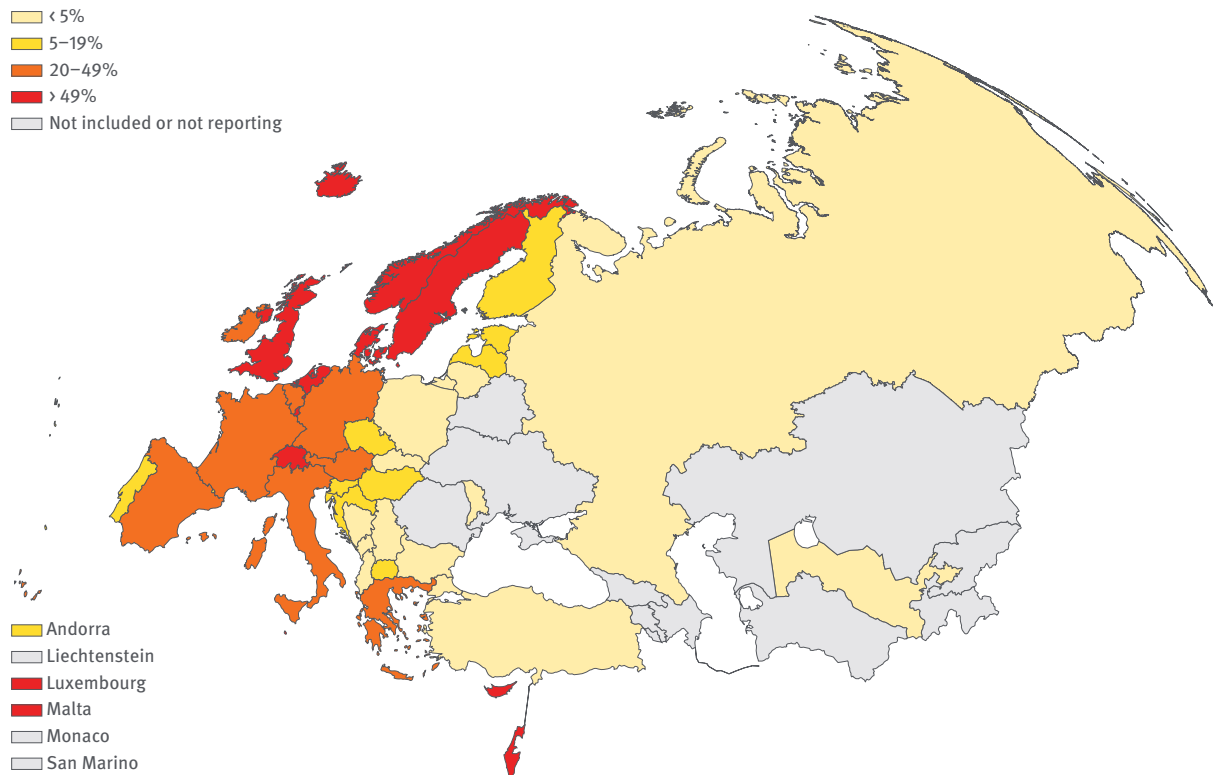
**Map 3: TB mortality rates, Europe, 2001–2006<sup>a,b</sup>**



<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

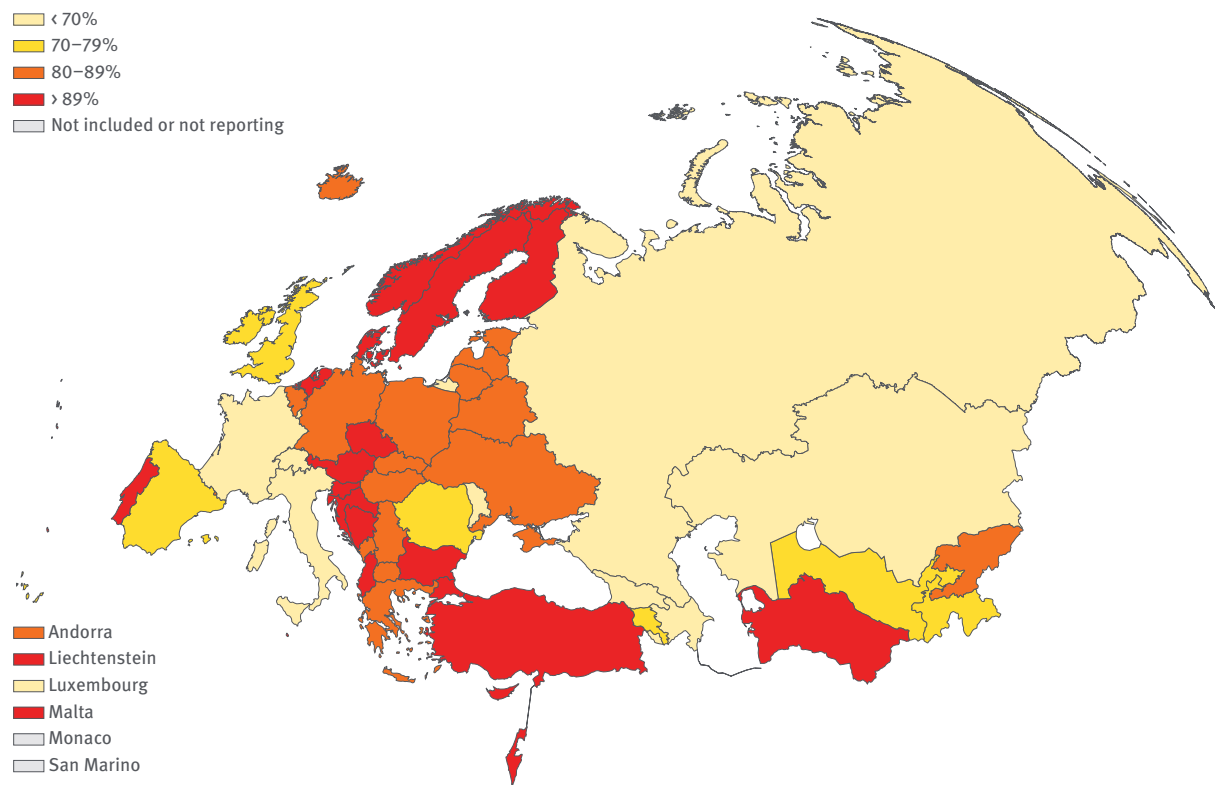
<sup>b</sup> Source: WHO Mortality WHO Mortality Database August 2008. Including deaths from TB coded ICD-9 010-018,137 (BTL 020-025,029) or ICD-10 A15-19,B90

**Map 4: Proportion of notified TB cases of foreign origin, Europe, 2007<sup>a</sup>**



<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

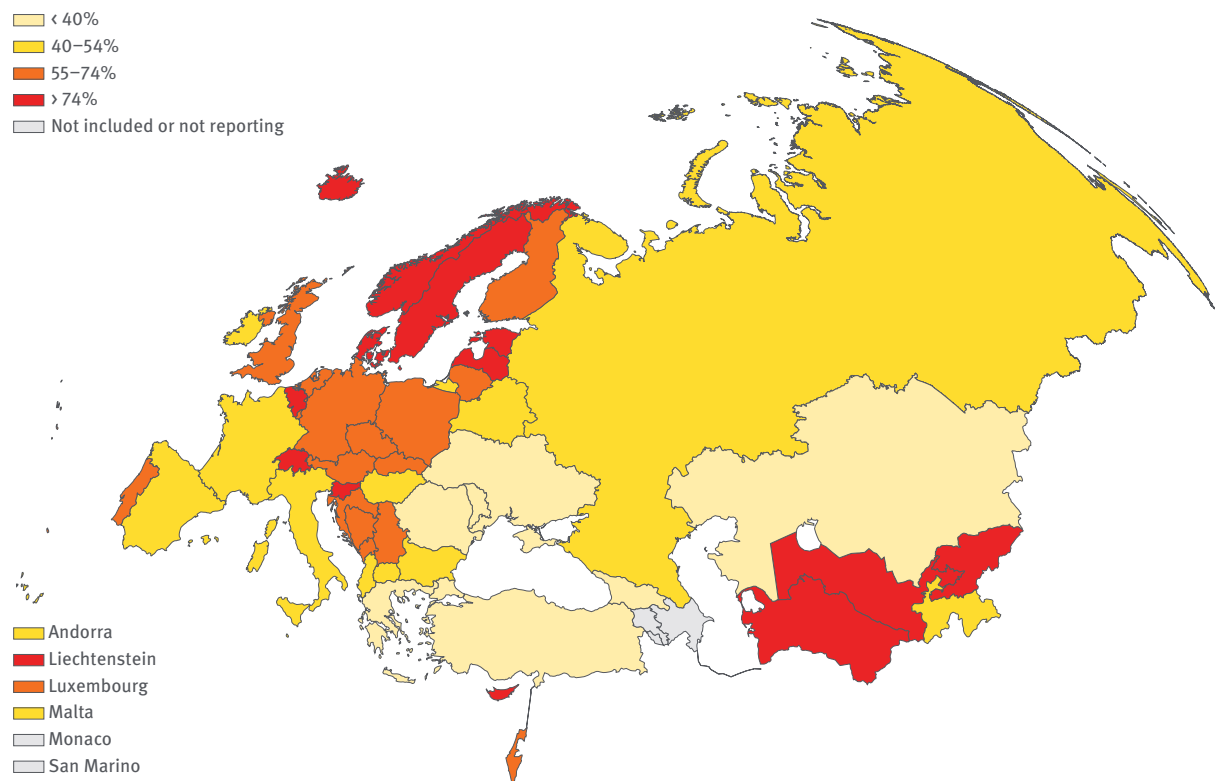
**Map 5: Proportion of previously untreated notified TB cases<sup>a</sup>, Europe, 2007<sup>b</sup>**



<sup>a</sup> Not previously diagnosed used for Belgium, Denmark, Ireland, Italy, United Kingdom and Norway. Data on previous history absent for > 15% of cases in France, Ireland, Italy, Luxembourg, Norway, Spain, Switzerland and United Kingdom

<sup>b</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

**Map 6: Proportion of TB cases confirmed by culture, Europe, 2007<sup>a,b</sup>**



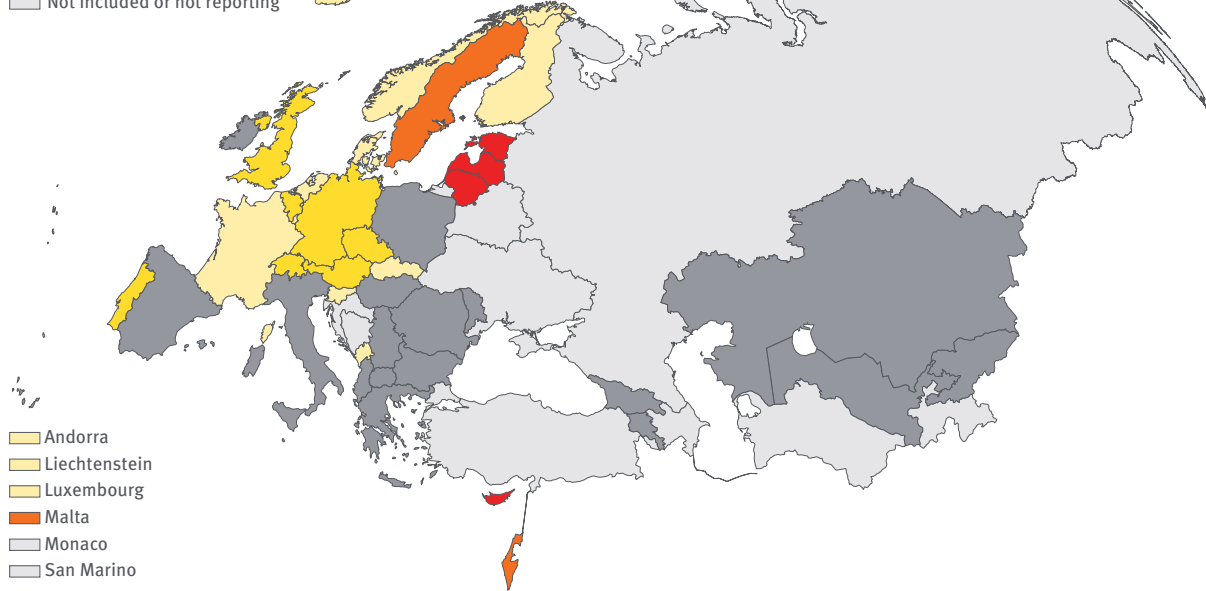
<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

<sup>b</sup> Reporting of culture results for 2007 was incomplete at the time of data collection for the Netherlands and Romania

**Map 7: Proportion of notified TB cases with primary multidrug resistance, Europe, 2007<sup>a</sup>**

Percentage of new TB cases with MDR

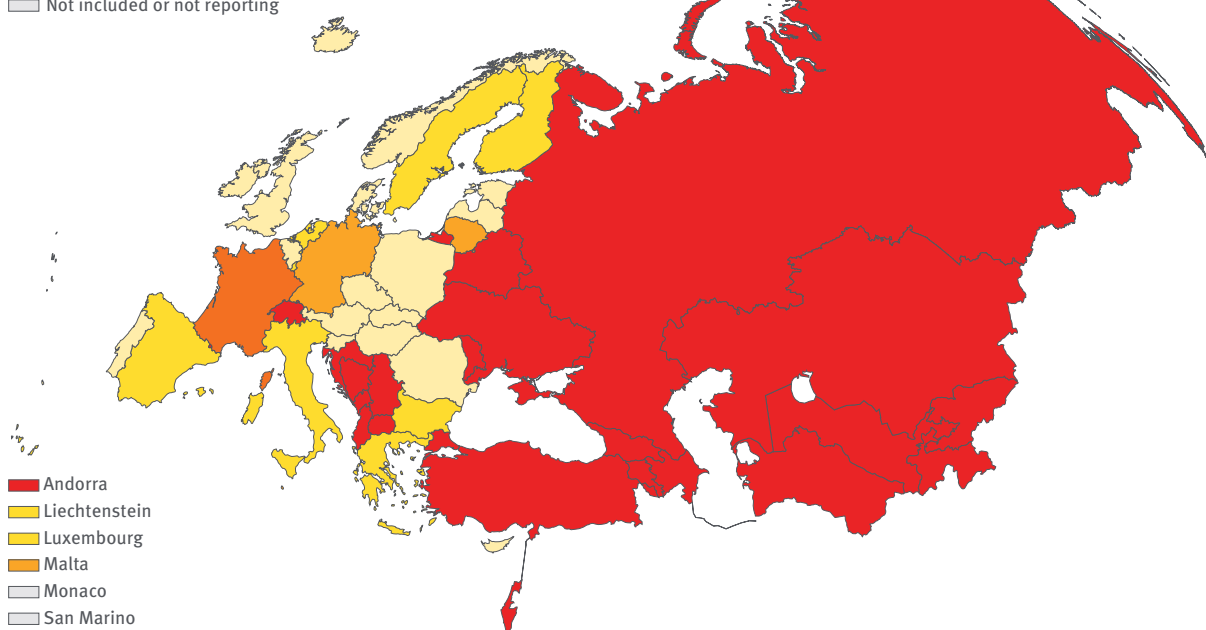
- < 1%
- 1–1.9%
- 2–5.9%
- ≥ 6%
- No nationwide or representative drug resistance data reported
- Not included or not reporting



<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia

**Map 8: Case-base reporting of TB, Europe, 2007<sup>a</sup>**

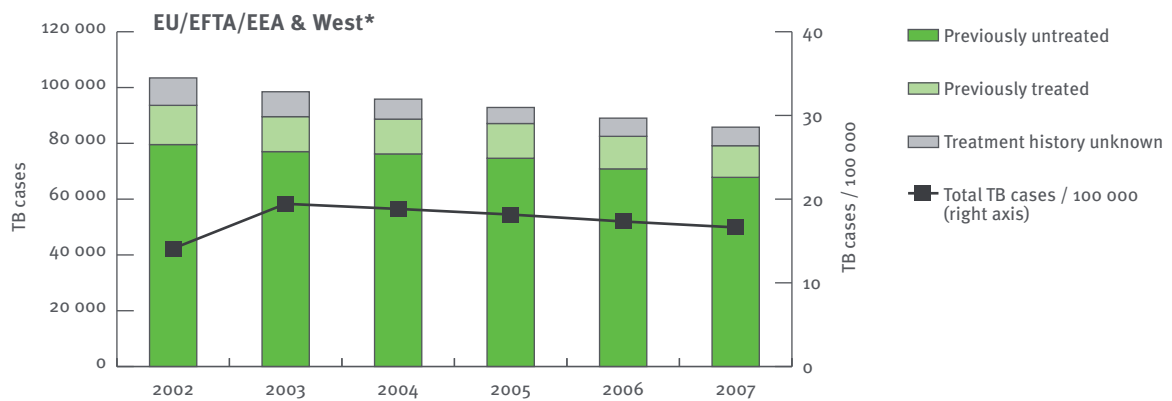
- Case-based data, including drug resistance and outcome
- Case-based data, including drug resistance
- Case-based data, including outcome
- Case-based data only
- No case-based reporting (aggregate only)
- Not included or not reporting



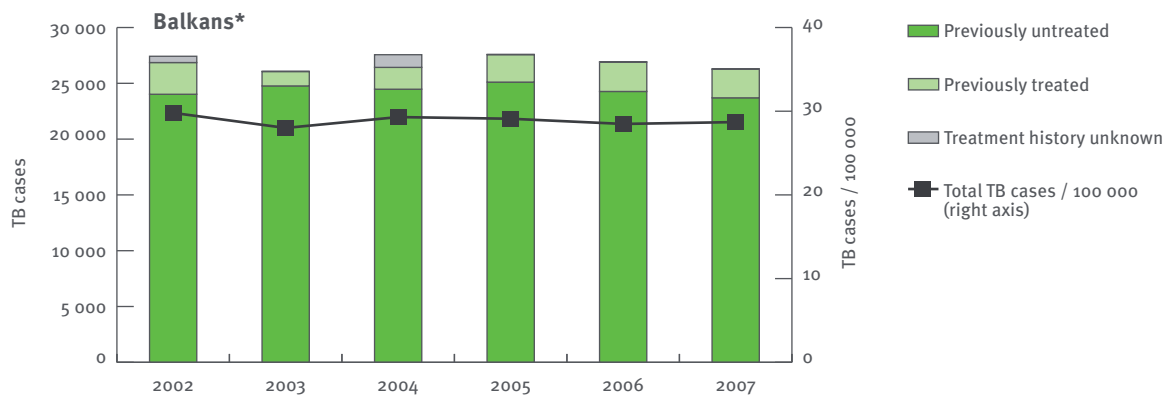
<sup>a</sup> Data from the UN Administered Province of Kosovo is not included in the figures reported for Serbia



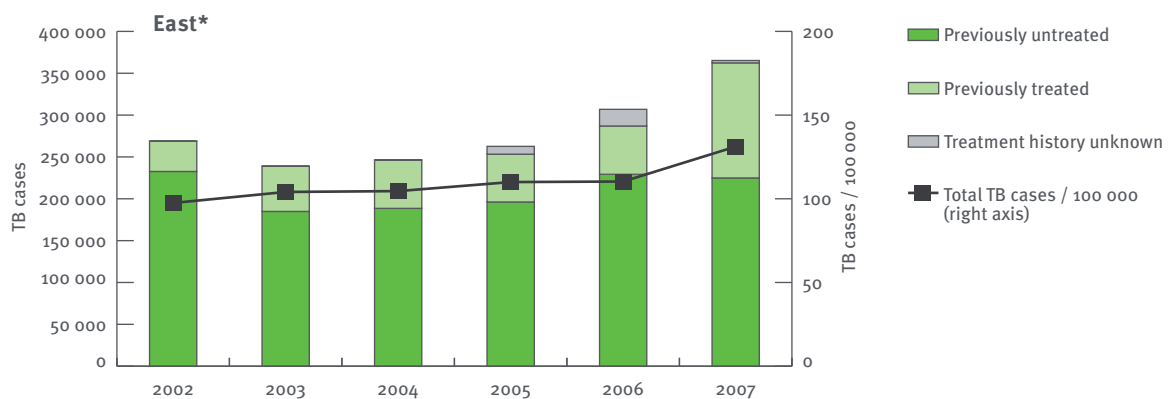
**Figure 1: Total TB notifications by previous treatment history and total TB case rates, Europe, 2002–2007**



\* Excluded: Cyprus, Monaco and San Marino

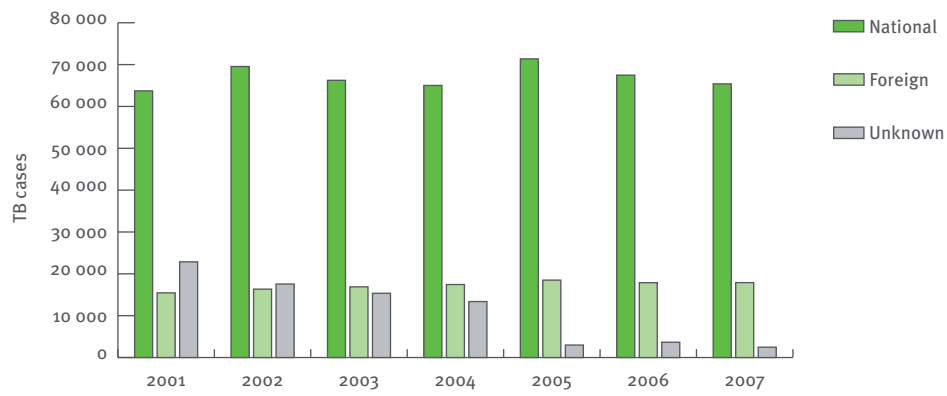


\* Excluded: Bosnia and Herzegovina



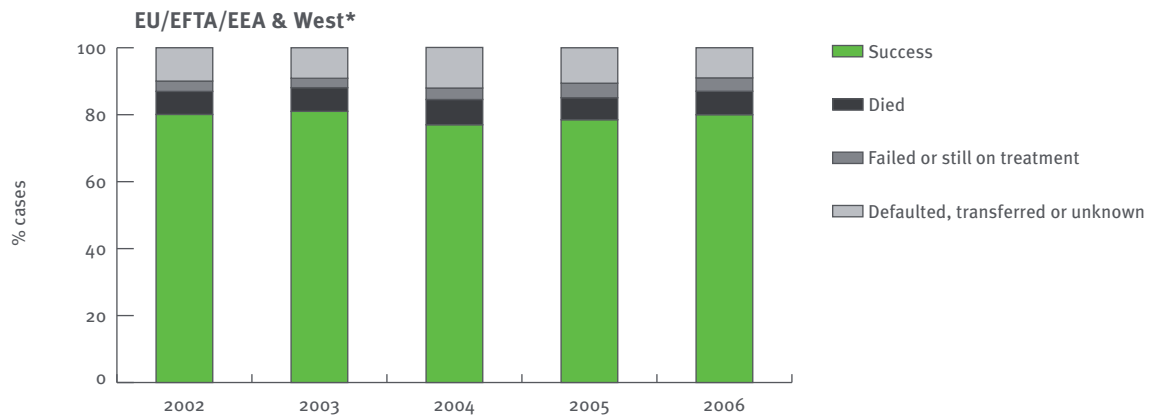
\* Excluded: Belarus, Tajikistan and Ukraine

**Figure 2: Tuberculosis cases by geographical origin, EU/EFTA/EEA & West\*, 2001–2007**

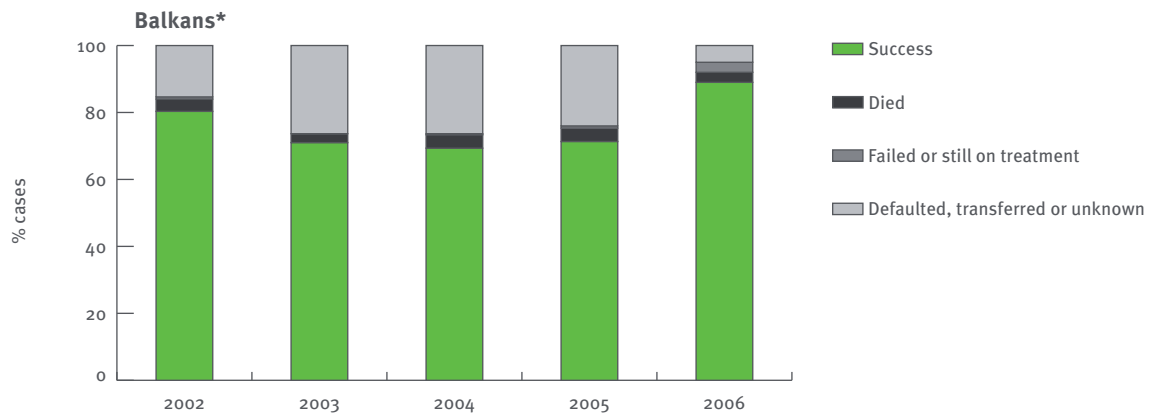


\* Excluded: Andorra, Liechtenstein, Monaco, San Marino

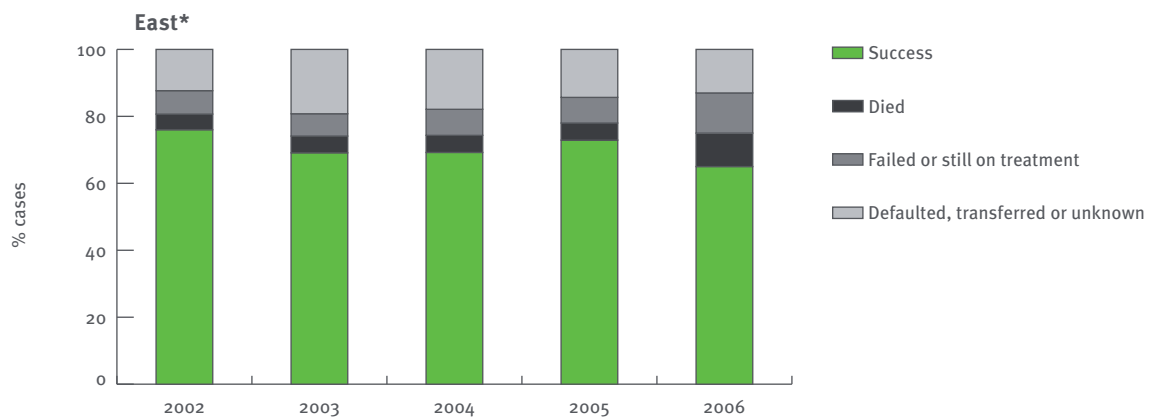
**Figure 3: Treatment outcome by area, previously untreated laboratory-confirmed pulmonary cases, Europe, 2002–2006**



\* Excluded: Bulgaria, Finland, France, Greece, Liechtenstein, Luxembourg, Monaco, San Marino, Spain and Switzerland



\* Included: Albania, Croatia and the former Yugoslav Republic of Macedonia



\* Excluded: Belarus, Turkmenistan and Ukraine



## 5. Country profiles









# Albania

## Tuberculosis case notifications, 2007

Total number of cases	447
Cases per 100 000	14.1
Sex ratio (M:F)	1,7
Median age group, nationals	45-54 years
Median age group, non-nationals	35-44 years
Foreign citizens	4 (0.9%)
New (never-treated)	422 (94.4%)
Culture positive	187 (41.8%)
Pulmonary	292 (65.3%)
of which smear positive	183 (62.7%)
HIV-positive TB cases	1 (0.2%)
TB deaths per 100 000 (2004)	0.58

## Drug resistance surveillance, 2007

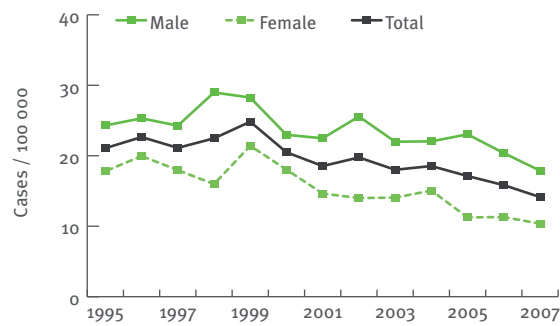
Geographical coverage	Partial*
International proficiency testing	Yes (2005)
Case-linked data reporting	No
Cases with DST results	186
Cases resistant to isoniazid	11 (5.9%)
Cases resistant to rifampicin	5 (2.7%)
MDR cases	3 (1.6%)
Cases resistant to ethambutol	5 (2.7%)
Cases resistant to streptomycin	13 (7.0%)

\* Data representativeness unknown

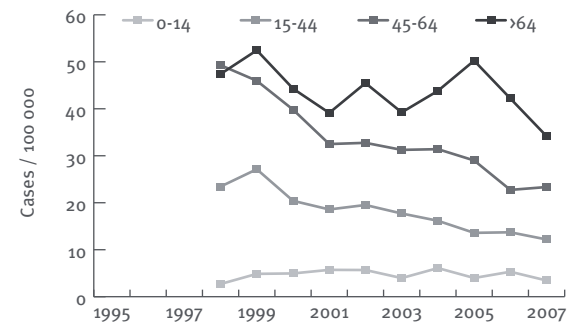
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	286
Success	179 (63%)
Died	3 (1%)
Failed	1 (0%)
Still on treatment	0 (0%)
Lost to follow-up	16 (6%)

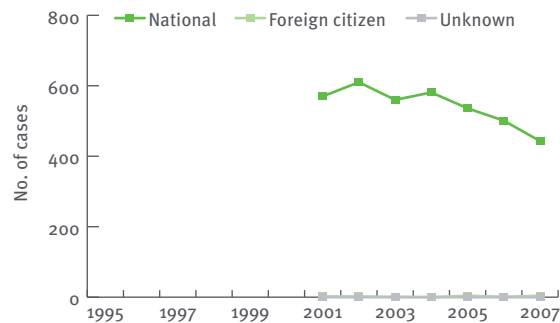
## Tuberculosis notification rates by sex, 1995–2007



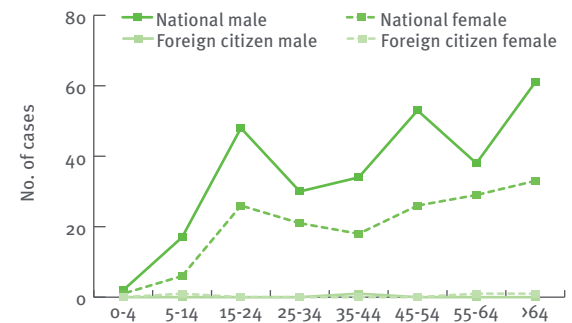
## Tuberculosis notification rates by age group, 1995–2007



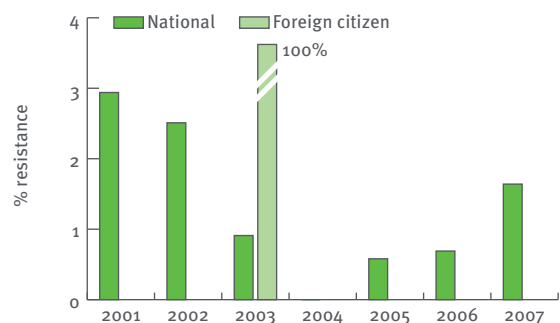
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007

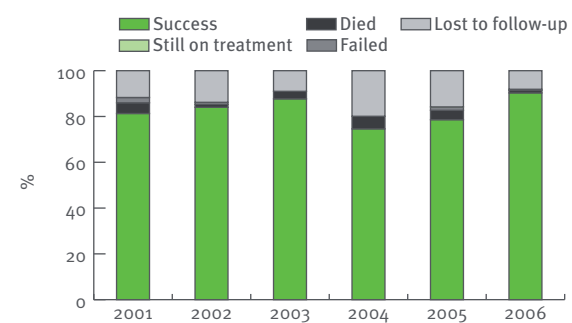


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; the only foreign citizen notified with TB in 2003 had MDR

## Outcomes, new pulmonary smear-positive cases, 2001–2006



# Andorra

## Tuberculosis case notifications, 2007

Total number of cases	6
Notification rate per 100 000	7.3
Sex ratio (M:F)	0.2
Median age group, nationals	45-54 years
Median age group, non-nationals	45-54 years
Foreign born	1 (16.7%)
New (never-treated)	5 (83.3%)
Culture positive	-
Pulmonary	-
of which sputum smear positive	-
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000	-

## Drug resistance surveillance, 2007

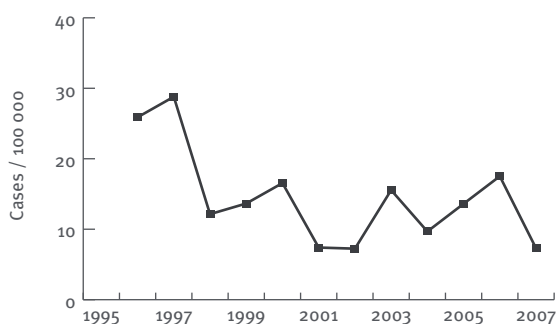
Geographical coverage	National
International proficiency testing	No*
Case-linked data reporting	No
Cases with DST results	3
Cases resistant to isoniazid	0 (0.0%)
Cases resistant to rifampicin	0 (0.0%)
MDR cases	0 (0.0%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	0 (0.0%)

\* DST done in Spain

## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	No
Included in TOM cohort	8
Success	6 (75%)
Died	0 (0%)
Failed	0 (0%)
Still on treatment	0 (0%)
Lost to follow-up	2 (25%)

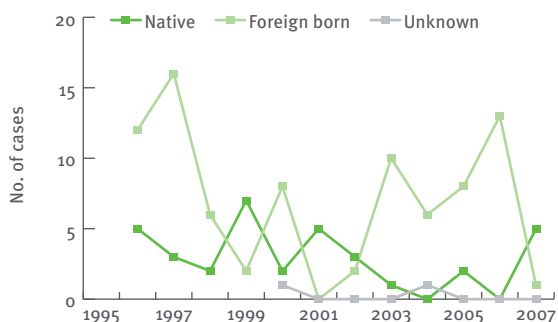
## Tuberculosis notification rates by sex, 1995-2007



## Tuberculosis notification rates by age group, 1995-2007

Insufficient number of cases for graphic presentation

## Tuberculosis cases by geographical origin, 1995-2007



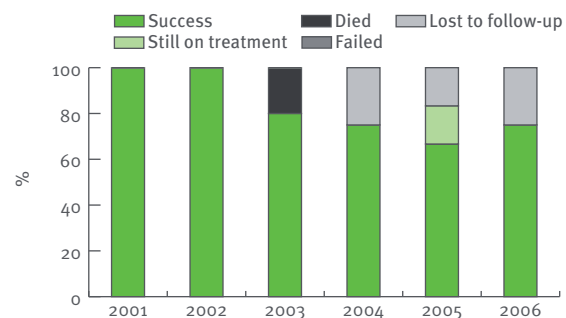
## Tuberculosis cases by origin, age group and sex, 2007

Insufficient number of cases for graphic presentation

## Combined multidrug resistance, by origin, 2001-2007

No MDR cases reported

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Armenia

## Tuberculosis case notifications, 2007

Total number of cases	2129
Notification rate per 100 000	66.0
Sex ratio (M:F)	3.5
Median age group, nationals	35-44 years
Median age group, non-nationals	-
Foreign citizens	0 (0.0%)
New (never-treated)	1533 (72.0%)
Culture positive	-
Pulmonary	1730 (81.3%)
of which sputum smear positive	784 (45.3%)
HIV-positive TB cases	8 (0.4%)
TB deaths per 100 000 (2006)	4.75

## Drug resistance surveillance, 2007

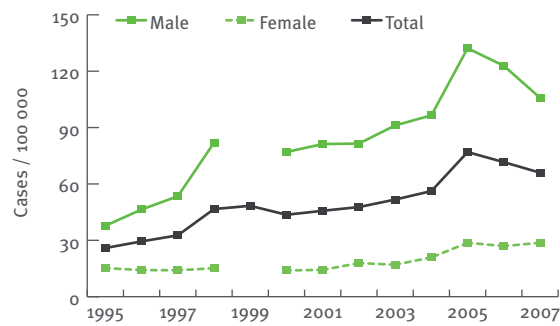
Geographical coverage	partial
International proficiency testing	Yes (2007)
Case-linked data reporting	No*
Cases with DST results	642
Cases resistant to isoniazid	259 (40.3%)
Cases resistant to rifampicin	141 (22.0%)
MDR cases	125 (19.5%)
Cases resistant to ethambutol	62 (9.7%)
Cases resistant to streptomycin	267 (41.6%)

\* Data from NRL (representativeness unknown)  
Culture and DST not routinely performed

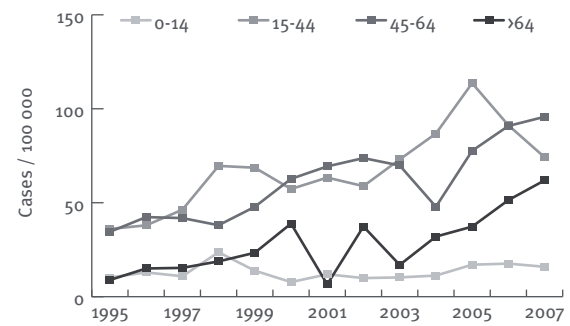
## Treatment outcome monitoring, 2006

Geographical coverage	partial
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	884
Success	511 (58%)
Died	55 (6%)
Failed	113 (13%)
Still on treatment	0 (0%)
Lost to follow-up	205 (23%)

## Tuberculosis notification rates by sex, 1995-2007



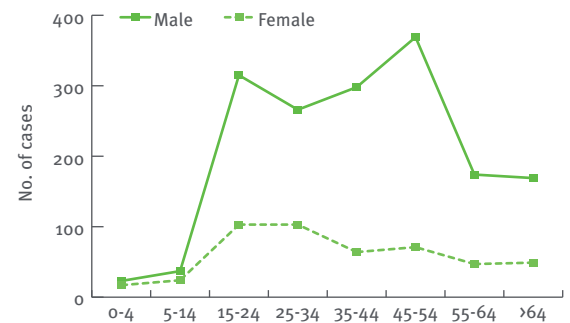
## Tuberculosis notification rates by age group, 1995-2007



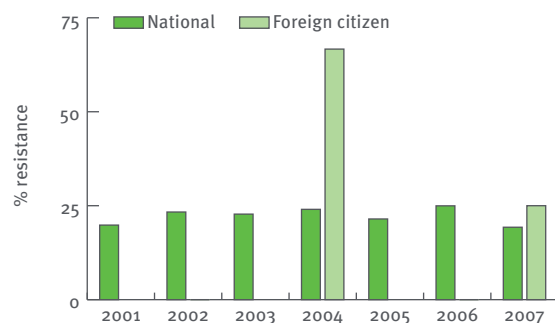
## Tuberculosis cases by geographical origin, 1995-2007

No foreign citizens reported, notification data reported separately from DST results

## Tuberculosis cases by origin, age group and sex, 2007

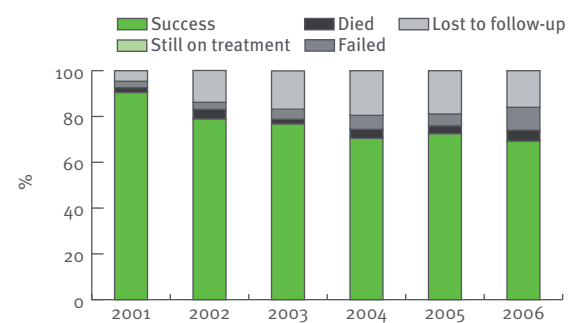


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown; origin unknown in 2001

## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* Data representativeness unknown (2002-2004)

# Austria

## Tuberculosis case notifications, 2007

Total number of cases	874
Notification rate per 100 000	10.5
Sex ratio (M:F)	2.1
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign citizens	319 (36.5%)
New (never-treated)	811 (92.8%)
Culture positive	538 (61.6%)
Pulmonary	730 (83.5%)
of which sputum smear positive	201 (27.5%)
HIV-positive TB cases	-
TB deaths per 100 000 (2006)	0.68

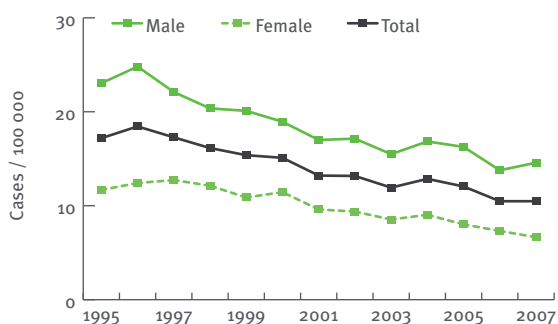
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes (2007)
Case-linked data reporting	Yes
Cases with DST results	513
Cases resistant to isoniazid	34 (6.6%)
Cases resistant to rifampicin	9 (1.8%)
MDR cases	9 (1.8%)
Cases resistant to ethambutol	4 (0.8%)
Cases resistant to streptomycin	35 (6.8%)

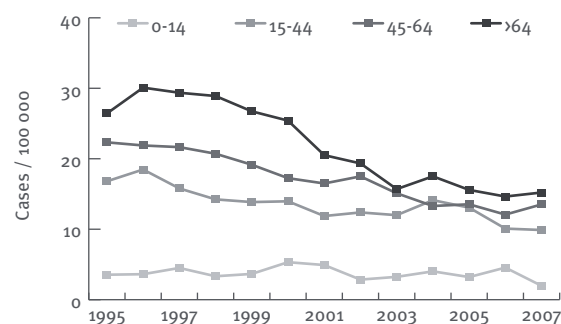
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	491
Success	339 (69%)
Died	57 (12%)
Failed	0 (0%)
Still on treatment	26 (5%)
Lost to follow-up	69 (14%)

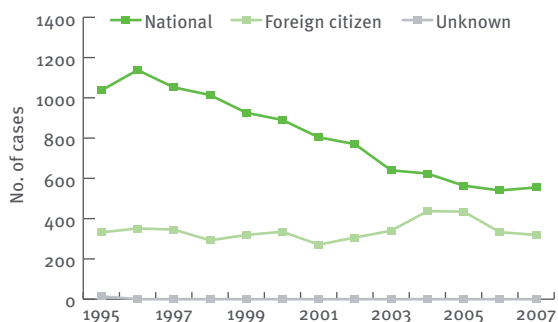
## Tuberculosis notification rates by sex, 1995-2007



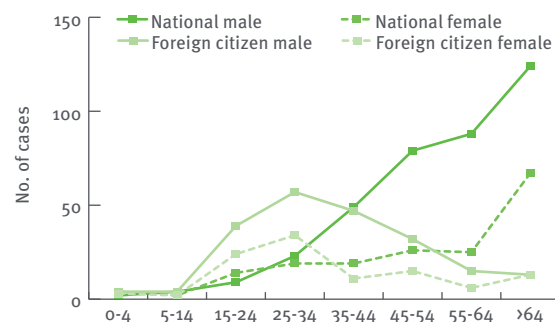
## Tuberculosis notification rates by age group, 1995-2007



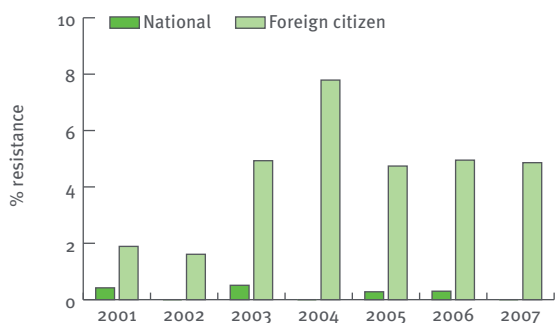
## Tuberculosis cases by geographical origin, 1995-2007



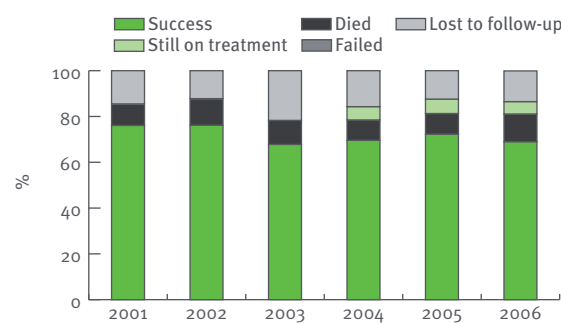
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Azerbaijan

## Tuberculosis case notifications, 2007

Total number of cases	7347
Notification rate per 100 000	85.6
Sex ratio (M:F)	-
Median age group, nationals	-
Median age group, non-nationals	-
Foreign born	-
New (never-treated)	4444 (60.5%)
Culture positive	-
Pulmonary	6801 (92.6%)
of which sputum smear positive	2730 (40.1%)
HIV-positive TB cases (2003)	8 0.20%
TB deaths per 100 000 (2002)	9.47 813

## Drug resistance surveillance, 2007

Geographical coverage	Partial
International proficiency testing	No
Case-linked data reporting	No*
Cases with DST results	470
Cases resistant to isoniazid	-
Cases resistant to rifampicin	-
MDR cases	196 (41.7%)
Cases resistant to ethambutol	-
Cases resistant to streptomycin	-

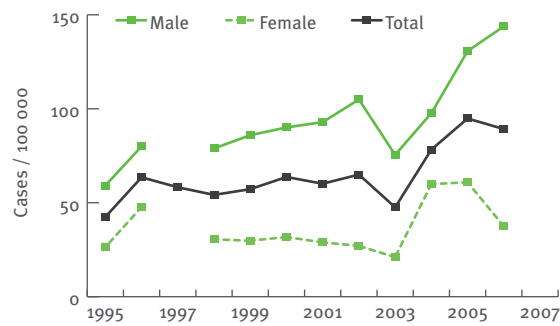
\* Reported as aggregate data, representativeness unknown

## Treatment outcome monitoring, 2006

Geographical coverage	National*
Outcome cohort	New & relapse pulm smear positive
Case-linked data reporting	No
Included in TOM cohort	2726
Success	1457 (53%)
Died	112 (4%)
Failed	133 (5%)
Still on treatment	0 (0%)
Lost to follow-up	1024 (38%)

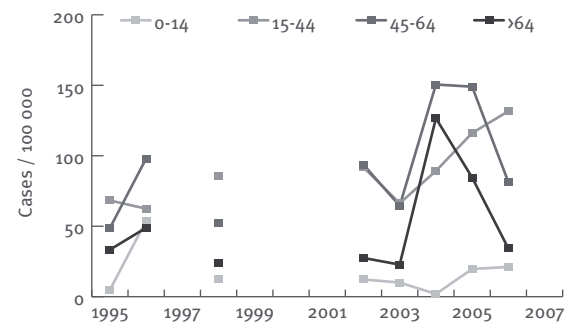
\* Data representativeness unknown

## Tuberculosis notification rates by sex, 1995–2007\*



\* Expansion of treatment programme in 2004

## Tuberculosis notification rates by age group, 1995–2007\*

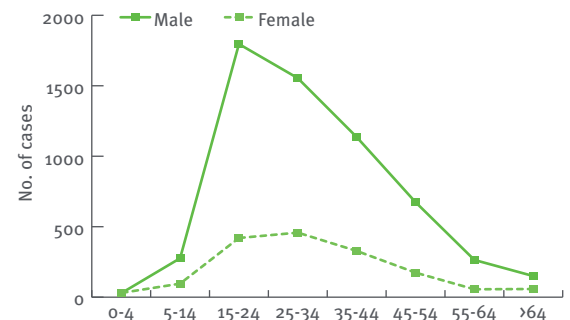


\* Expansion of treatment programme in 2004

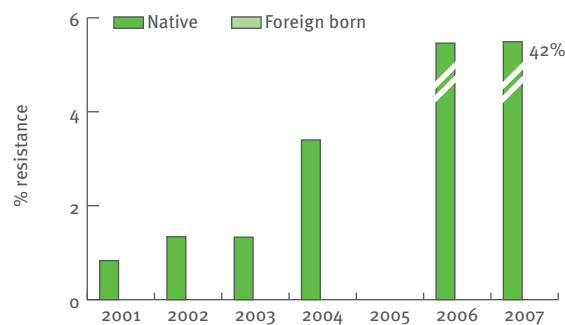
## Tuberculosis cases by geographical origin, 1995–2007

Foreign-born cases not reported

## Tuberculosis cases by age group and sex, 2007

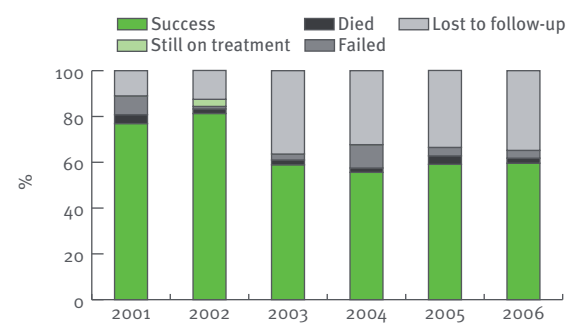


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; no data in 2005

## Outcomes, new pulmonary smear-positive cases, 2001–2006\*



\* Data representativeness unknown in 2002 and 2005

# Belarus

## Tuberculosis case notifications, 2007

Total number of cases	5756
Notification rate per 100 000	59.3
Sex ratio (M:F)	2.5
Median age group, nationals	35-44 years
Median age group, non-nationals	-
Foreign citizens	0 (0.0%)
New (never-treated)	4872 (84.6%)
Culture positive	2751 (47.8%)
Respiratory	5398 (93.8%)
of which sputum smear positive	1035 (19.2%)
HIV-positive new TB cases (2007)	152 (3.1%)
TB deaths per 100 000 (2006)	10.04

## Drug resistance surveillance, 2007

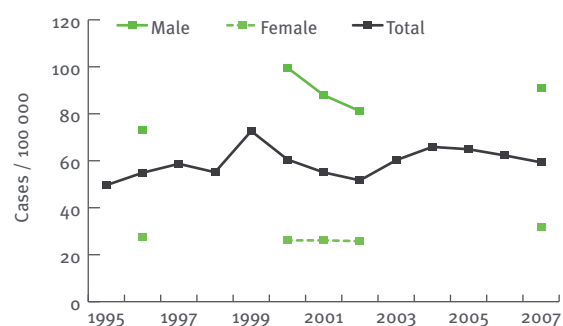
Geographical coverage	Unknown
International proficiency testing	No
Case-linked data reporting	No*
Cases with DST results	3382
Cases resistant to isoniazid	-
Cases resistant to rifampicin	-
MDR cases	870 (25.7%)
Cases resistant to ethambutol	-
Cases resistant to streptomycin	-

\* Reported as aggregate data, representativeness unknown

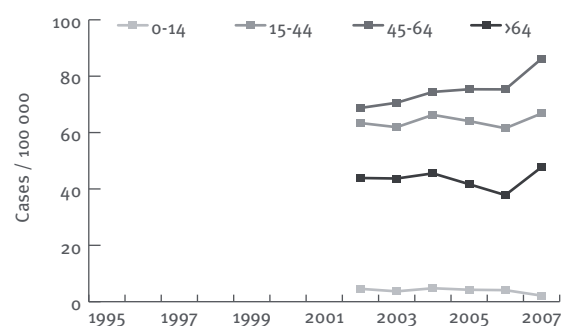
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	Total pulm smear &/ or culture positive
Case-linked data reporting	No
Included in TOM cohort	1621
Success	1074 (66%)
Died	193 (12%)
Failed	173 (11%)
Still on treatment	89 (5%)
Lost to follow-up	92 (6%)

## Tuberculosis notification rates by sex, 1995-2007



## Tuberculosis notification rates by age group, 1995-2007\*

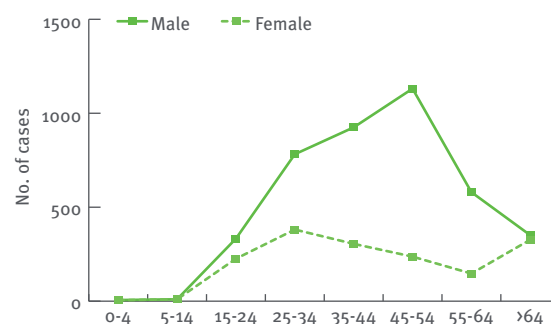


\* Re-treated cases not included 2003-2005

## Tuberculosis cases by geographical origin, 1995-2007

Foreign citizen cases not reported

## Tuberculosis cases by age group and sex, 2007\*

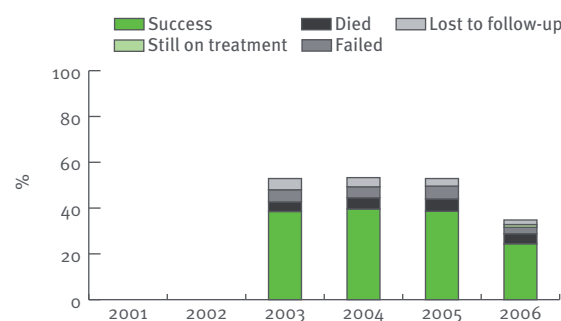


\* Re-treated cases not included

## Combined multidrug resistance, by origin, 2001-2007

Not available

## Outcomes, new pulmonary definite cases, 2001-2006\*



\* Data representativeness unknown (2003-2004)

# Belgium

## Tuberculosis case notifications, 2007

Total number of cases	1028
Notification rate per 100 000	9.7
Sex ratio (M:F)	1.6
Median age group, nationals	45-54 years
Median age group, non-nationals	25-34 years
Foreign citizens	487 (47.4%)
New (not previously diagnosed)	830 (80.7%)
Culture positive	803 (78.1%)
Pulmonary	745 (72.5%)
of which smear positive*	353 (47.4%)
HIV-positive TB cases	52 (5.1%)
TB deaths per 100 000	-

\* Including smear of specimens other than sputum

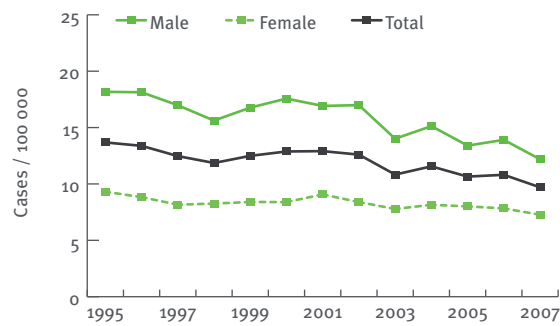
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	759
Cases resistant to isoniazid	49 (6.5%)
Cases resistant to rifampicin	14 (1.8%)
MDR cases	14 (1.8%)
Cases resistant to ethambutol	22 (2.9%)
Cases resistant to streptomycin	3 (0.4%)

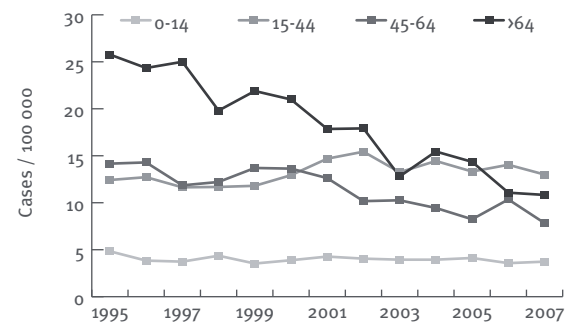
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	643
Success	444 (69%)
Died	72 (11%)
Failed	1 (0%)
Still on treatment	38 (6%)
Lost to follow-up	88 (14%)

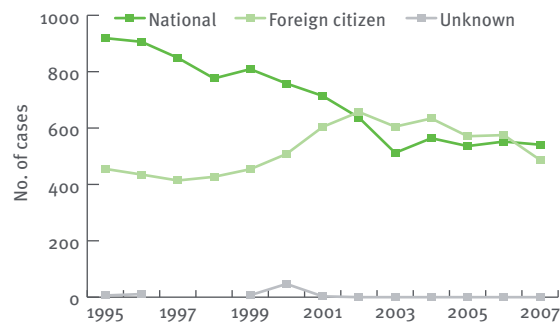
## Tuberculosis notification rates by sex, 1995-2007



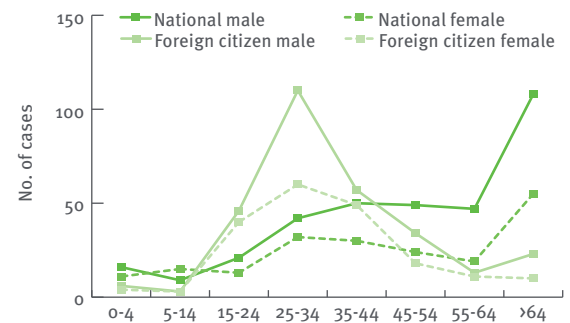
## Tuberculosis notification rates by age group, 1995-2007



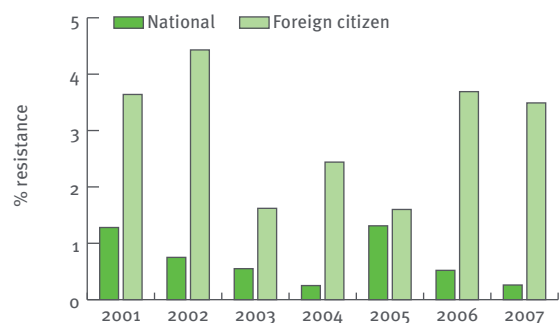
## Tuberculosis cases by geographical origin, 1995-2007



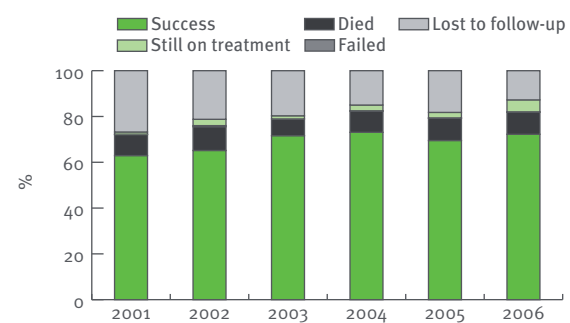
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Bosnia and Herzegovina

## Tuberculosis case notifications, 2007

Total number of cases	2400
Notification rate per 100 000	62.4
Sex ratio (M:F)	1.4
Median age group, nationals	55-64 years
Median age group, non-nationals	-
Foreign citizens	1 (0.0%)
New (never-treated)	2217 (92.4%)
Culture positive	1423 (59.3%)
Pulmonary	2167 (90.3%)
of which sputum smear positive	737 (34.0%)
HIV-positive TB cases	0
TB deaths per 100 000	20.97 20.96

## Drug resistance surveillance, 2007

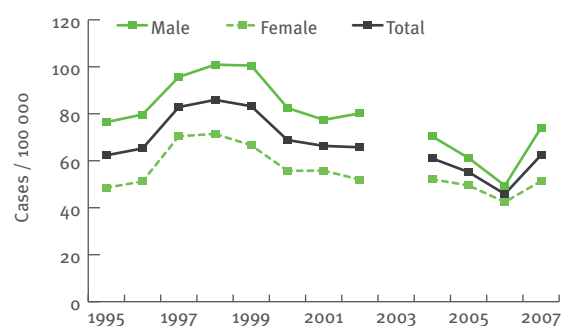
Geographical coverage	National
International proficiency testing	No
Case-linked data reporting	No*
Cases with DST results	1423
Cases resistant to isoniazid	-
Cases resistant to rifampicin	-
MDR cases	8 (0.6%)
Cases resistant to ethambutol	-
Cases resistant to streptomycin	-

\* Reported as aggregate data, representativeness unknown

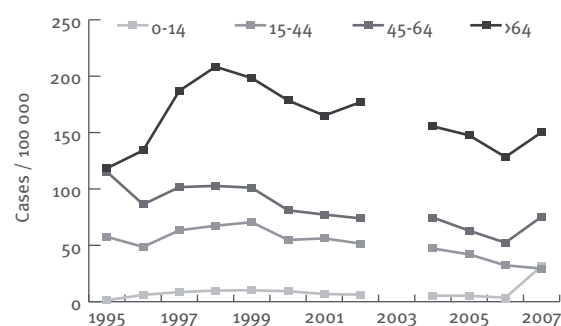
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	New & relapse pulm culture positive
Case-linked data reporting	No
Included in TOM cohort	1086
Success	1048 (97%)
Died	11 (1%)
Failed	5 (0%)
Still on treatment	7 (1%)
Lost to follow-up	15 (1%)

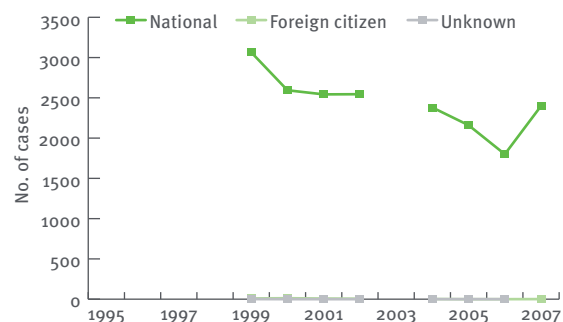
## Tuberculosis notification rates by sex, 1995-2007



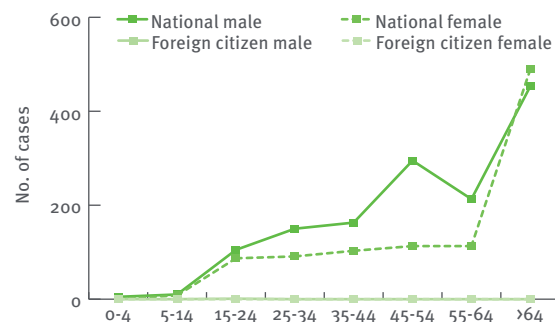
## Tuberculosis notification rates by age group, 1995-2007



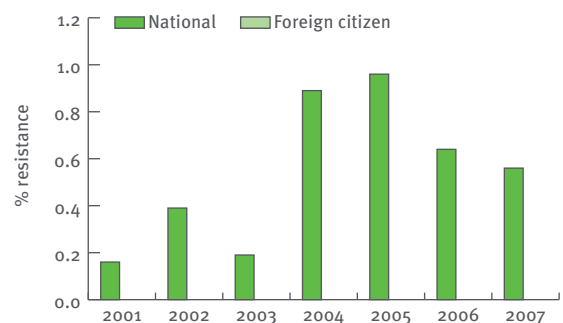
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

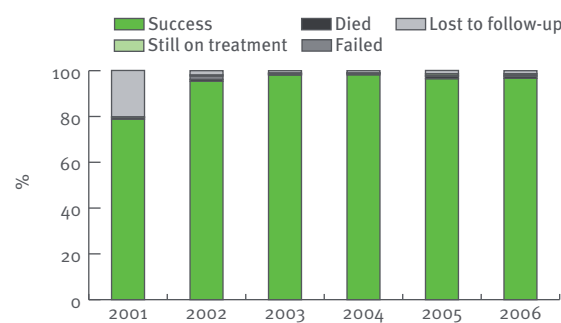


## Combined multidrug resistance, by origin, 2001-2007\*



\* Federation of Bosnia only in 2002-2004

## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Data representativeness unknown; nationwide representative data in 2001 & 2005



# Bulgaria

## Tuberculosis case notifications, 2007

Total number of cases	3052
Cases per 100 000	39.8
Sex ratio (M:F)	2.0
Median age group (all cases)	45-54 years
Median age group, non-nationals	35-44 years
Foreign citizens	2 (0.1%)
New (never-treated)	2743 (89.9%)
Culture positive	1408 (46.1%)
Respiratory	2356 (77.2%)
of which sputum smear positive	1338 (56.8%)
HIV-positive TB cases	6 (0.2%)
TB deaths per 100 000 (2006)	270

## Drug resistance surveillance, 2007

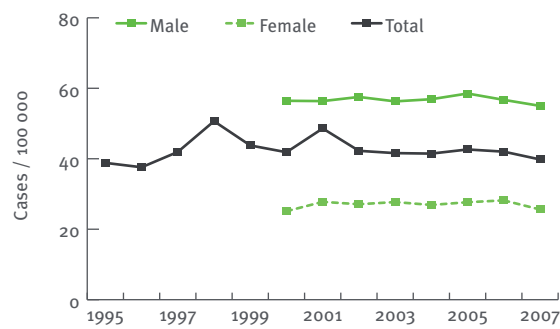
Geographical coverage	Partial*
International proficiency testing	No
Case-linked data reporting	No
Cases with DST results	1171
Cases resistant to isoniazid	168 (14.3%)
Cases resistant to rifampicin	84 (7.2%)
MDR cases	66 (5.6%)
Cases resistant to ethambutol	117 (10.0%)
Cases resistant to streptomycin	80 (6.8%)

\* All labs doing DST (representativeness unknown)

## Treatment outcome monitoring, 2006

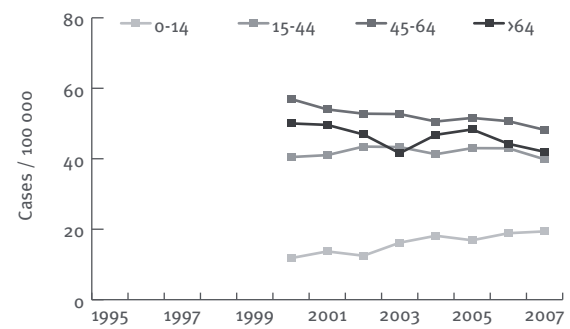
Not available

## Tuberculosis notification rates by sex, 1995–2007\*

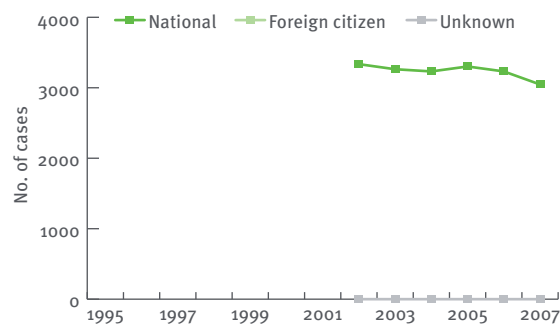


\* 14% with sex unknown in 2001

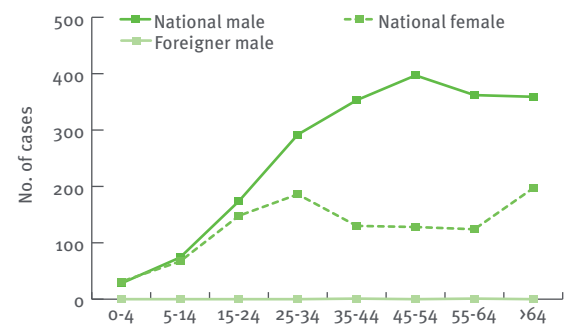
## Tuberculosis notification rates by age group, 1995–2007



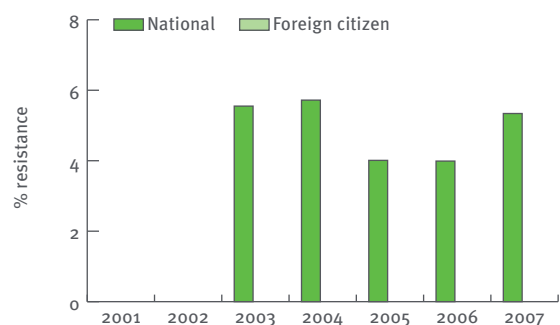
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by age group and sex, 2007

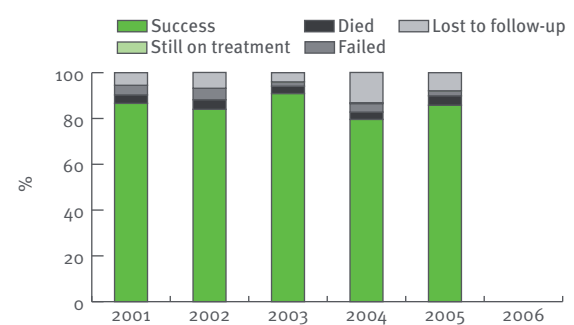


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; no data by geographical origin 2001-2002

## Outcomes, new pulmonary definite cases, 2001–2006\*



\* No data of treatment outcome for 2006

# Croatia

## Tuberculosis case notifications, 2007

Total number of cases	982
Notification rate per 100 000	22.1
Sex ratio (M:F)	1.5
Median age group, nationals	45-54 years
Median age group, non-nationals	55-64 years
Foreign born*	138 (14.1%)
New (never-treated)	884 (90.0%)
Culture positive	688 (70.1%)
Pulmonary	873 (88.9%)
of which sputum smear positive	448 (51.3%)
HIV-positive TB cases	-
TB deaths per 100 000 (2005)	3.2

\*34% of cases with unknown origin

## Drug resistance surveillance, 2007

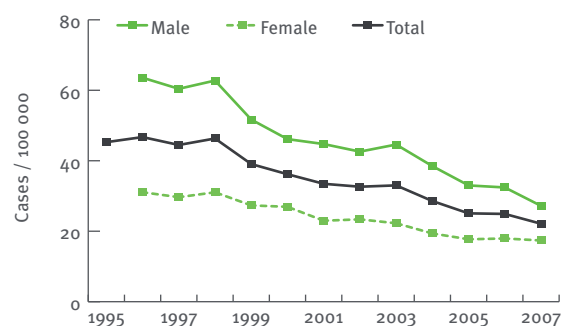
Geographical coverage	National
International proficiency testing	No
Case-linked data reporting	No
Cases with DST results	687
Cases resistant to isoniazid	-
Cases resistant to rifampicin	-
MDR cases	3 (0.4%)
Cases resistant to ethambutol	-
Cases resistant to streptomycin	-

## Treatment outcome monitoring, 2006

Geographical coverage	National*
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	459
Success	316 (69%)
Died	81 (18%)
Failed	1 (0%)
Still on treatment	0 (0%)
Lost to follow-up	61 (13%)

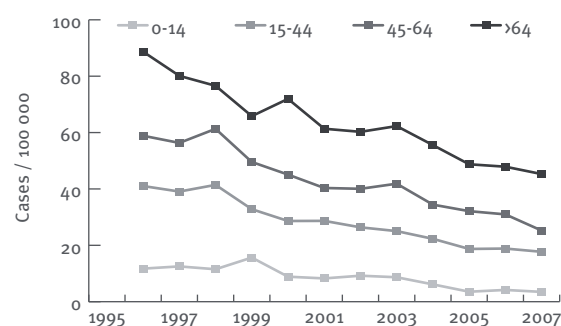
\* Data representativeness unknown

## Tuberculosis notification rates by sex, 1995-2007\*

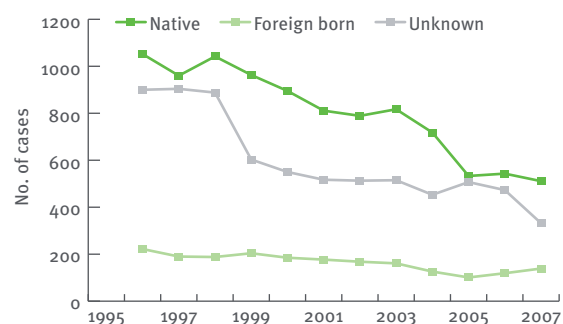


\* For 2007 rate calculations used EuroStat population data

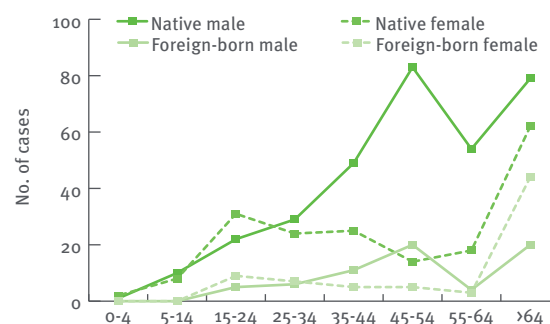
## Tuberculosis notification rates by age group, 1995-2007



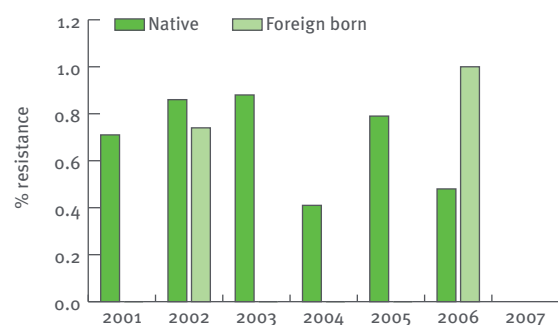
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

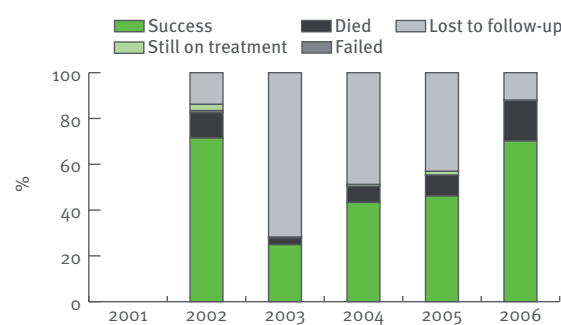


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown in 2004

## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Data representativeness unknown

# Cyprus

## Tuberculosis case notifications, 2007

Total number of cases	42
Notification rate per 100 000	5.3
Sex ratio (M:F)	1.1
Median age group, nationals	45-54 years
Median age group, non-nationals	55-64 years
Foreign born	31 (73.8%)
New (never-treated)	41 (97.6%)
Culture positive	33 (78.6%)
Pulmonary	36 (85.7%)
of which sputum smear positive	8 (22.2%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000	0.26

## Drug resistance surveillance, 2007

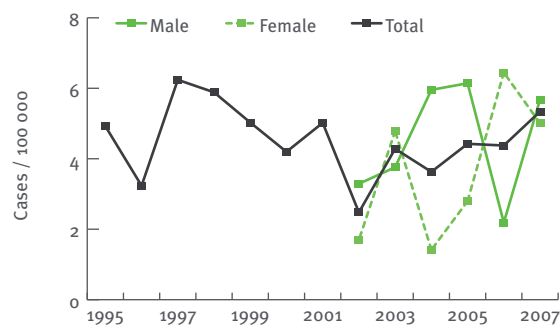
Geographical coverage	National
International proficiency testing	.*
Case-linked data reporting	Yes
Cases with DST results	29
Cases resistant to isoniazid	7 (24.1%)
Cases resistant to rifampicin	3 (10.3%)
MDR cases	3 (10.3%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	5 (17.2%)

\* DST done abroad

## Treatment outcome monitoring, 2006

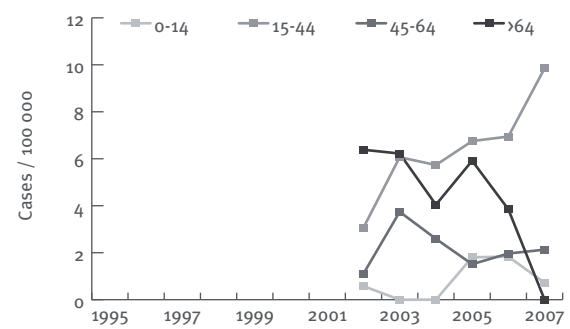
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	20
Success	16 (80%)
Died	0 (0%)
Failed	0 (0%)
Still on treatment	0 (0%)
Lost to follow-up	4 (20%)

## Tuberculosis notification rates by sex, 1995–2007\*

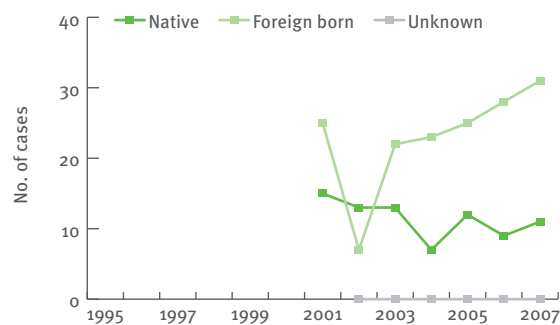


\* For 2007 rate calculations used EuroStat population data

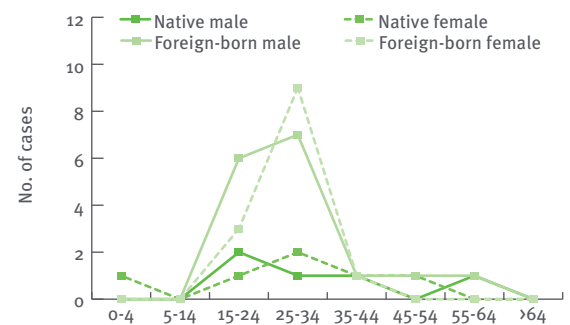
## Tuberculosis notification rates by age group, 1995–2007



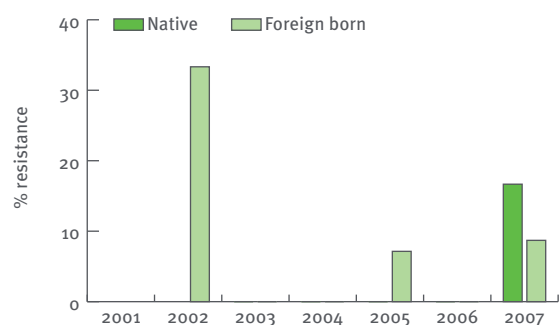
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007

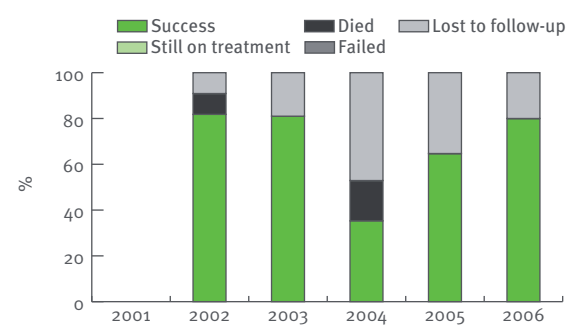


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown (2002-2003); no data in 2001

## Outcomes, new pulmonary culture-positive cases, 2001–2006\*



\* Data representativeness unknown (2002-2004)

# Czech Republic

## Tuberculosis case notifications, 2007

Total number of cases	871
Notification rate per 100 000	8.4
Sex ratio (M:F)	1.7
Median age group, nationals	55-64 years
Median age group, non-nationals	35-44 years
Foreign born	153 (17.6%)
New (never-treated)	790 (90.7%)
Culture positive	563 (64.6%)
Pulmonary	744 (85.4%)
of which sputum smear positive	286 (38.4%)
HIV-positive TB cases	7 (0.8%)
TB deaths per 100 000 (2005)	0.51

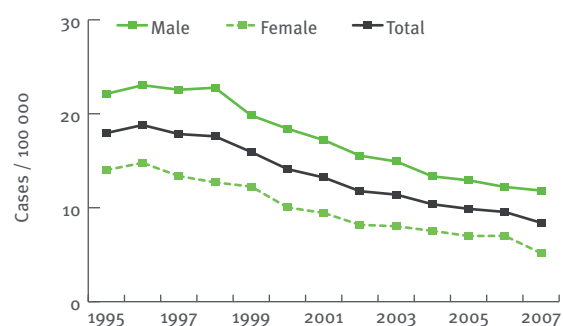
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	532
Cases resistant to isoniazid	26 (4.9%)
Cases resistant to rifampicin	16 (3.0%)
MDR cases	11 (2.1%)
Cases resistant to ethambutol	9 (1.7%)
Cases resistant to streptomycin	20 (3.8%)

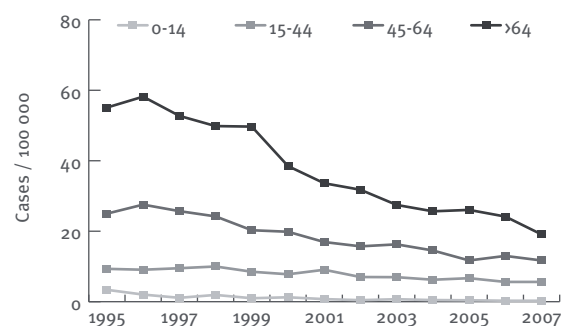
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	532
Success	351 (66%)
Died	32 (6%)
Failed	0 (0%)
Still on treatment	36 (7%)
Lost to follow-up	113 (21%)

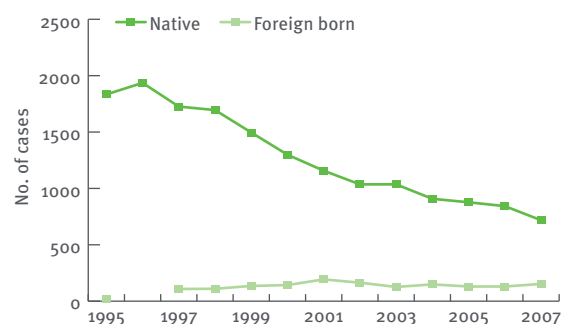
## Tuberculosis notification rates by sex, 1995-2007



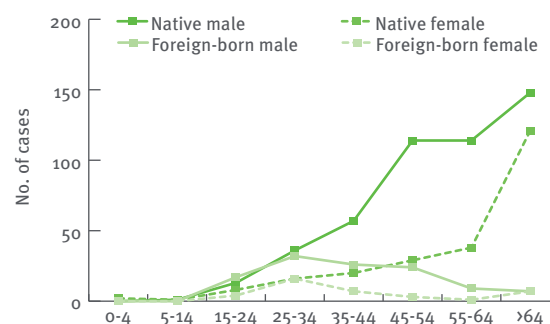
## Tuberculosis notification rates by age group, 1995-2007



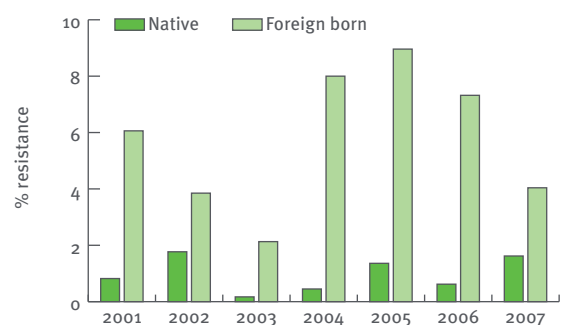
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

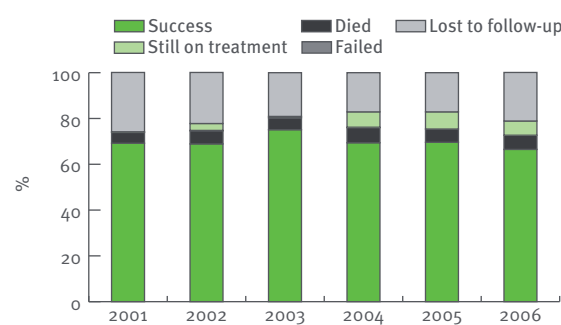


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown in 2004

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Denmark

## Tuberculosis case notifications, 2007

Total number of cases	391*
Notification rate per 100 000	7.2
Sex ratio (M:F)	2.2
Median age group, nationals	45-54 years
Median age group, non-nationals	25-34 years
Foreign born	241 (61.6%)
New (not previously diagnosed)**	355 (90.8%)
Culture positive	292 (74.7%)
Pulmonary	300 (76.7%)
of which sputum smear positive	146 (48.7%)
HIV-positive TB cases	6 (1.5%)
TB deaths per 100 000 (2006)	0.17

\* Excluding Greenland (60 cases in 2007)

\*\* Used previously diagnosed instead of previously treated

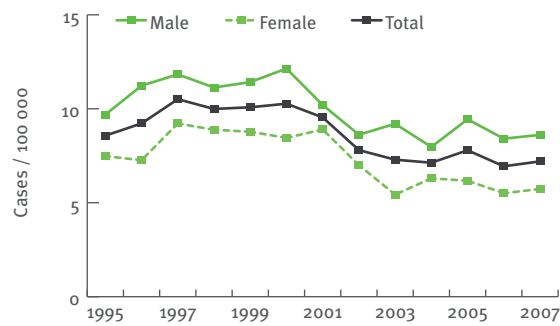
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	290
Cases resistant to isoniazid	14 (4.7%)
Cases resistant to rifampicin	3 (1.0%)
MDR cases	3 (1.0%)
Cases resistant to ethambutol	5 (1.7%)
Cases resistant to streptomycin	-

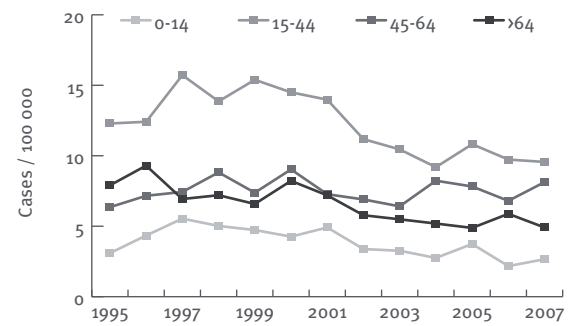
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	224
Success	155 (69%)
Died	6 (3%)
Failed	2 (1%)
Still on treatment	0 (0%)
Lost to follow-up	61 (27%)

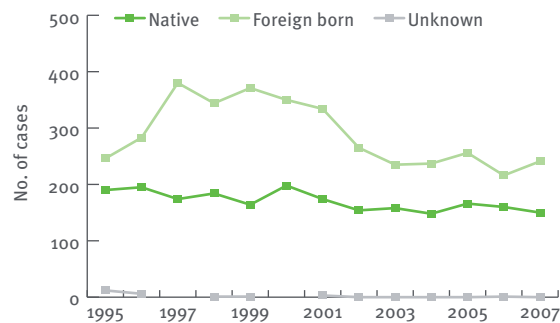
## Tuberculosis notification rates by sex, 1995-2007



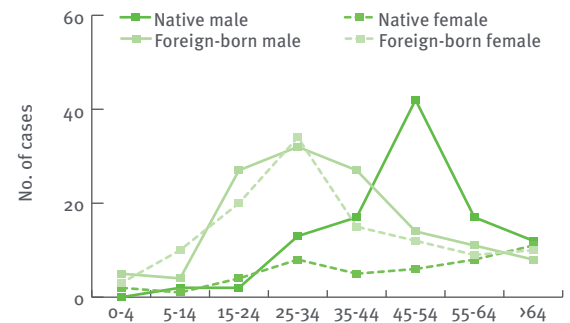
## Tuberculosis notification rates by age group, 1995-2007



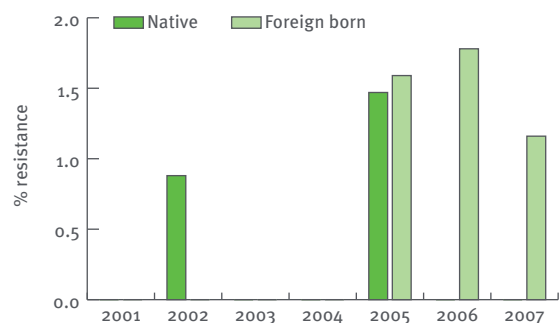
## Tuberculosis cases by geographical origin, 1995-2007



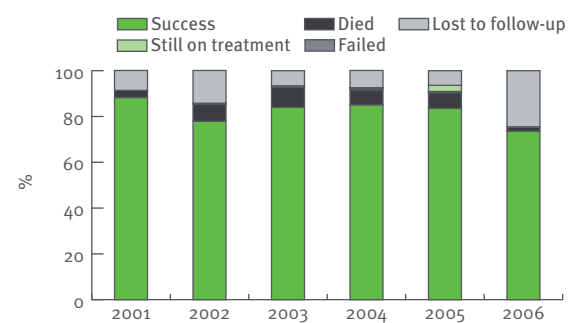
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Data representativeness unknown in 2001

# Estonia

## Tuberculosis case notifications, 2007

Total number of cases	487
Notification rate per 100 000	36.3
Sex ratio (M:F)	2.8
Median age group, nationals	45-54 years
Median age group, non-nationals	55-64 years
Foreign born	139 (28.5%)
New (never-treated)	409 (84.0%)
Culture positive	381 (78.2%)
Pulmonary	453 (93.0%)
of which sputum smear positive	199 (43.9%)
HIV-positive TB cases	54 (11.1%)
TB deaths per 100 000 (2006)	5.0

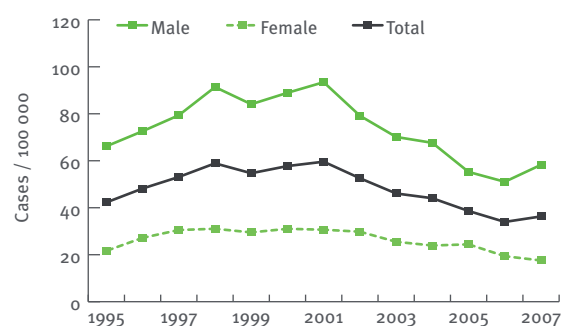
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	381
Cases resistant to isoniazid	118 (31.0%)
Cases resistant to rifampicin	80 (21.0%)
MDR cases	80 (21.0%)
Cases resistant to ethambutol	77 (20.2%)
Cases resistant to streptomycin	136 (35.7%)

## Treatment outcome monitoring, 2006

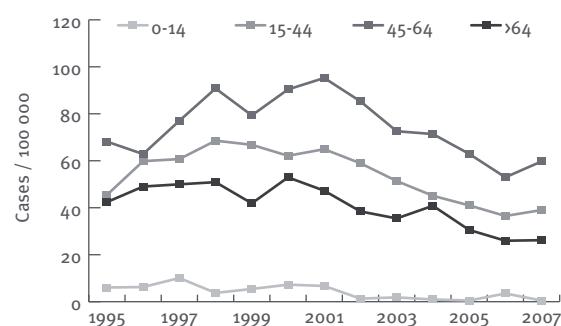
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	331
Success	219 (66%)
Died	43 (13%)
Failed	4 (1%)
Still on treatment	35 (11%)
Lost to follow-up	30 (9%)

## Tuberculosis notification rates by sex, 1995–2007\*



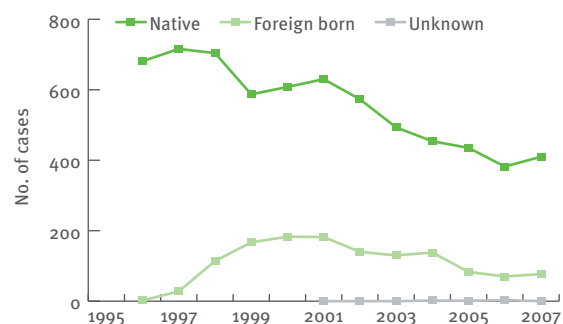
\* Re-treated cases other than relapses included since 2001

## Tuberculosis notification rates by age group, 1995–2007\*



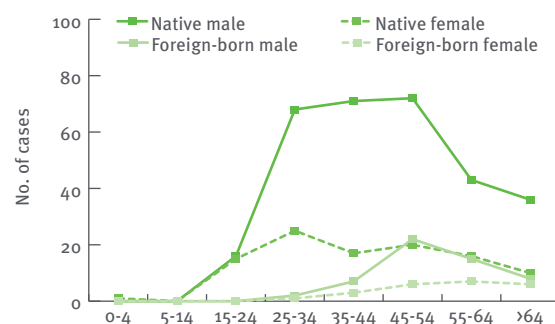
\* Re-treated cases other than relapses included since 2001

## Tuberculosis cases by geographical origin, 1995–2007

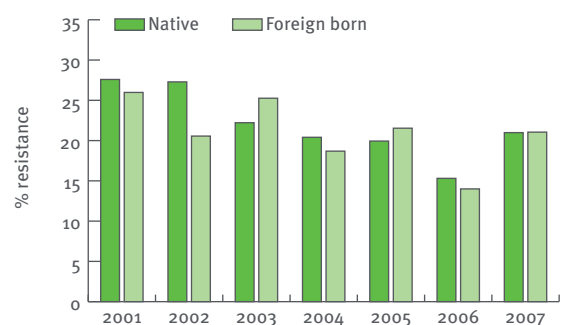


\* Re-treated cases other than relapses included since 2001

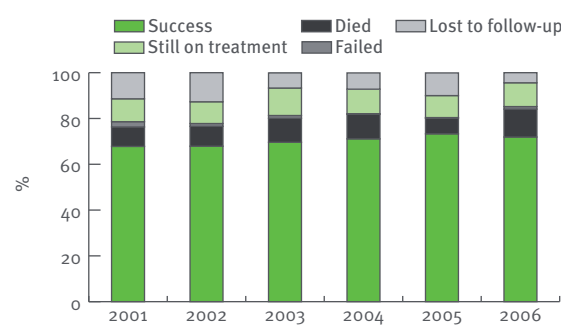
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Finland

## Tuberculosis case notifications, 2007

Total number of cases	313
Notification rate per 100 000	5.9
Sex ratio (M:F)	1.5
Median age group, nationals	>64 years
Median age group, non-nationals	25-34 years
Foreign born	59 (18.8%)
New (never treated)	299 (95.5%)
Culture positive	226 (72.2%)
Pulmonary	207 (66.1%)
of which sputum smear positive	91 (44.0%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2005)	1.14

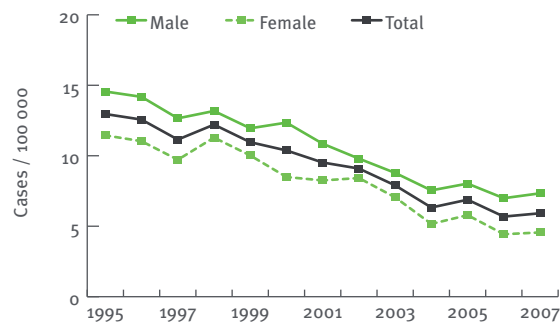
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	244
Cases resistant to isoniazid	11 (4.9%)
Cases resistant to rifampicin	4 (1.8%)
MDR cases	2 (0.9%)
Cases resistant to ethambutol	3 (1.3%)
Cases resistant to streptomycin	7 (3.1%)

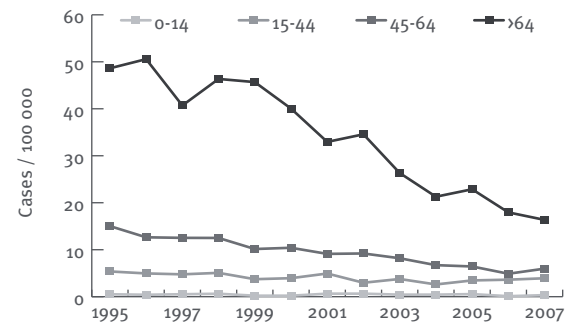
## Treatment outcome monitoring, 2006

Not available

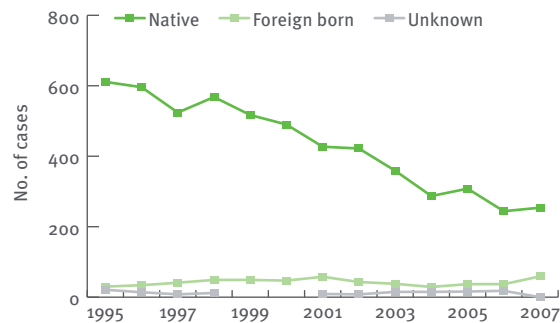
## Tuberculosis notification rates by sex, 1995–2007



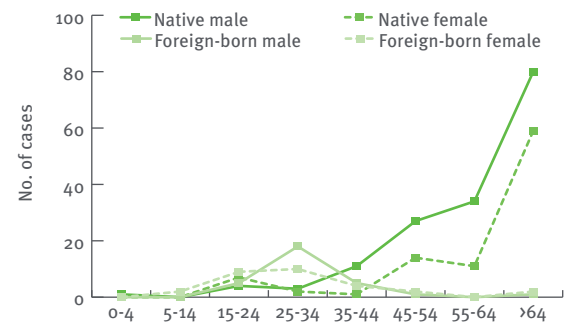
## Tuberculosis notification rates by age group, 1995–2007



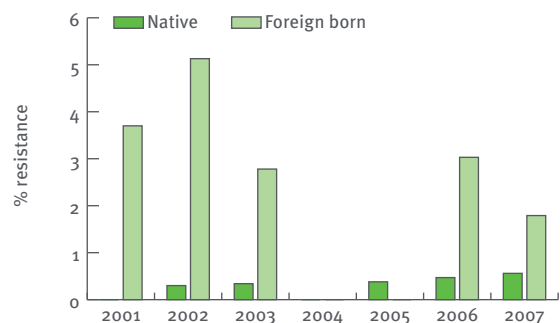
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available

# France

## Tuberculosis case notifications, 2007

Total number of cases	5588
Notification rate per 100 000	8.8
Sex ratio (M:F)	1.4
Median age group, nationals	45-54 years
Median age group, non-nationals	35-44 years
Foreign born	2083 (37.3%)
New (never-treated)*	3849 (68.9%)
Culture positive	2369 (42.4%)
Pulmonary	4092 (73.2%)
of which sputum smear positive	2092 (51.1%)
HIV-positive TB cases (2001)	364 (5.6%)
TB deaths per 100 000 (2005)	1.35

\*25% previous treatment unknown

## Drug resistance surveillance, 2007

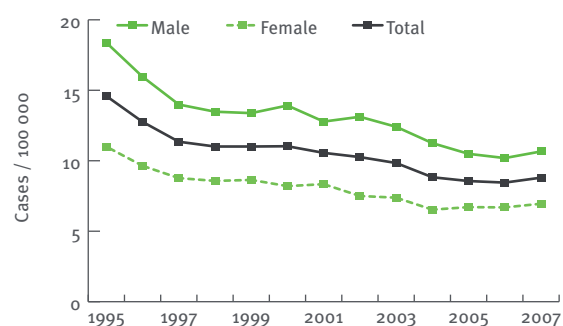
Geographical coverage	National*
International proficiency testing	Yes
Case-linked data reporting	No
Cases with DST results	1526
Cases resistant to isoniazid	81 (5.3%)
Cases resistant to rifampicin	12 (0.8%)
MDR cases	20 (1.3%)
Cases resistant to ethambutol	8 (0.5%)
Cases resistant to streptomycin	100 (6.6%)

\* Data from sentinel network of laboratories

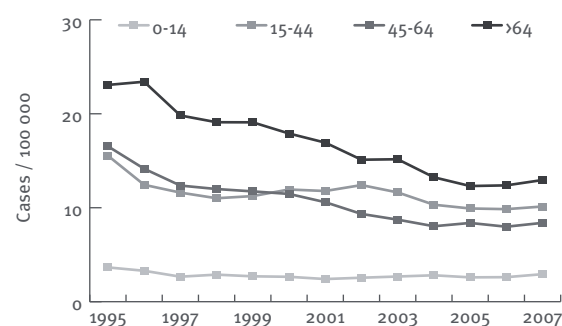
## Treatment outcome monitoring, 2006

Not available

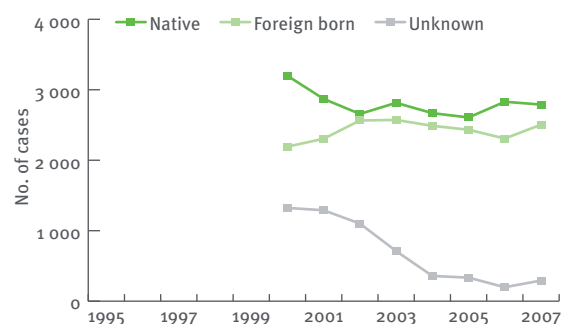
## Tuberculosis notification rates by sex, 1995–2007



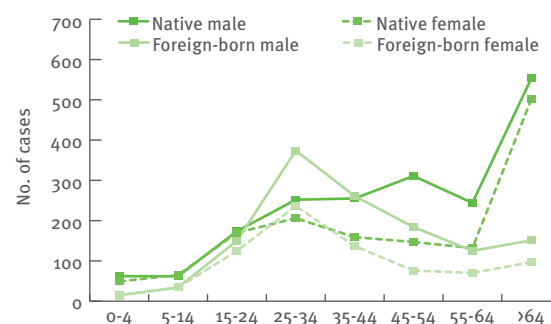
## Tuberculosis notification rates by age group, 1995–2007



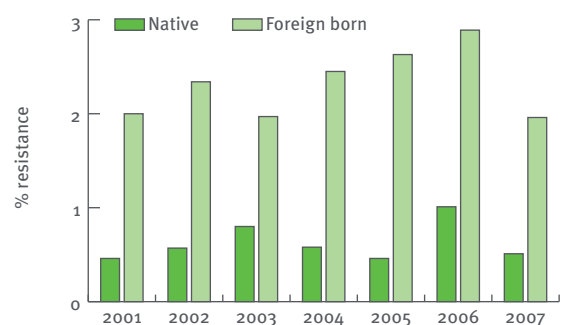
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007\*



\* Data from sentinel laboratory network

## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available (started in 2007)



# Georgia

## Tuberculosis case notifications, 2007

Total number of cases	5912*
Notification rate per 100 000	142.4
Sex ratio (M:F)	2.5
Median age group, nationals	35-44 years
Median age group, non-nationals	-
Foreign citizens	0 (0.0%)
New (never-treated)	4063 (68.7%)
Culture positive	2182 (36.9%)
Pulmonary	4548 (76.9%)
of which sputum smear positive	2999 (65.9%)
HIV-positive TB cases	29 (0.5%)
TB deaths per 100 000 (2006)	2.93

\* Excluding Abkhazia and Southern Ossetia

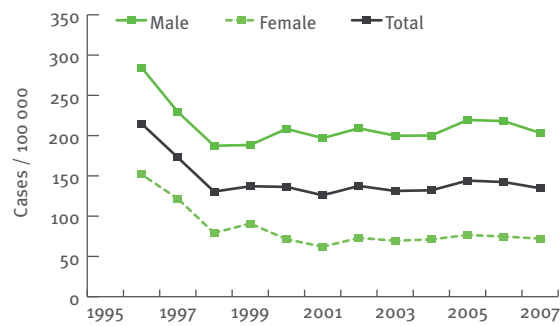
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes (2006)
Case-linked data reporting	No
Cases with DST results	1923
Cases resistant to isoniazid	533 (27.7%)
Cases resistant to rifampicin	319 (16.6%)
MDR cases	269 (14.0%)
Cases resistant to ethambutol	239 (12.4%)
Cases resistant to streptomycin	1506 (78.3%)

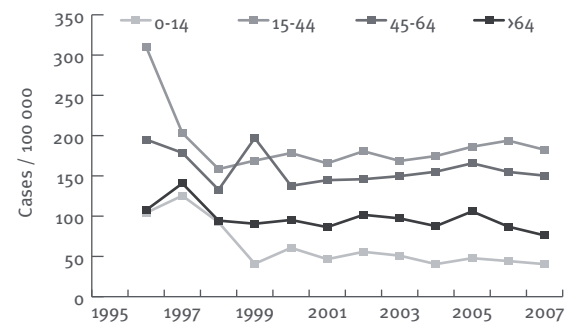
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	2983
Success	1939 (65%)
Died	145 (5%)
Failed	309 (10%)
Still on treatment	0 (0%)
Lost to follow-up	590 (20%)

## Tuberculosis notification rates by sex, 1995–2007



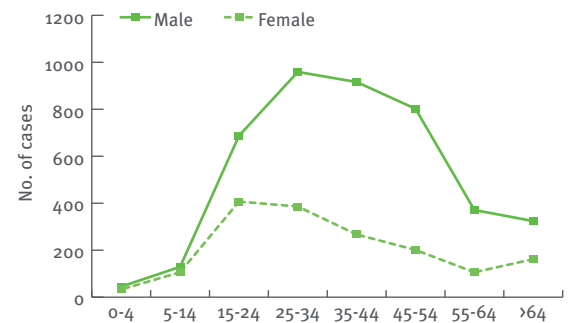
## Tuberculosis notification rates by age group, 1995–2007



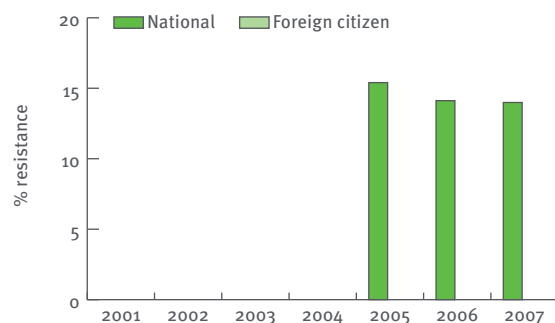
## Tuberculosis cases by geographical origin, 1995–2007

Foreign citizen cases not reported

## Tuberculosis cases by age group and sex, 2007

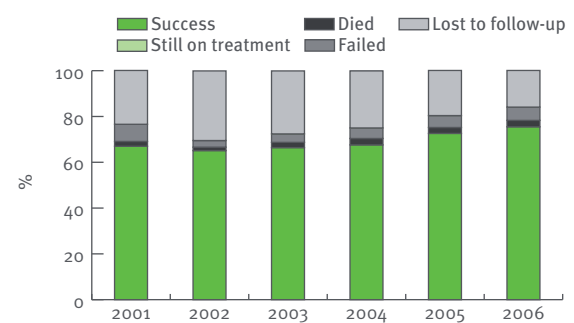


## Combined multidrug resistance, by origin, 2001–2007\*



\* No data in 2001-2004; nationwide representative survey in 2005

## Outcomes, new pulmonary smear-positive cases, 2001–2006\*



\* Data representativeness unknown in 2002

# Germany

## Tuberculosis case notifications, 2007

Total number of cases	5020
Notification rate per 100 000	6.1
Sex ratio (M:F)	1.4
Median age group, nationals	55-64 years
Median age group, non-nationals	35-44 years
Foreign born	2029 (40.4%)
New (never-treated)*	4021 (80.1%)
Culture positive	3437 (68.5%)
Pulmonary	3932 (78.3%)
of which sputum smear positive	1305 (33.2%)
HIV-positive TB cases	-
TB deaths per 100 000 (2006)	0.53

\*13% previous treatment history unknown

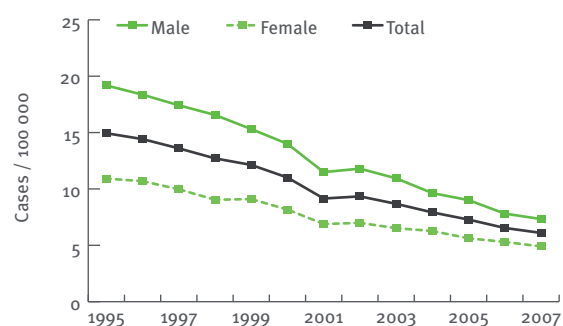
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	3242
Cases resistant to isoniazid	230 (7.1%)
Cases resistant to rifampicin	69 (2.1%)
MDR cases	64 (2.0%)
Cases resistant to ethambutol	62 (1.9%)
Cases resistant to streptomycin	236 (7.3%)

## Treatment outcome monitoring, 2006

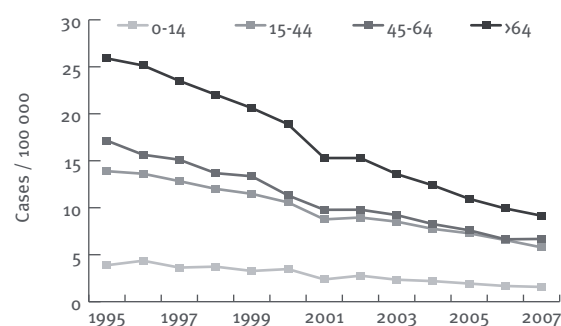
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	3036
Success	2244 (74%)
Died	432 (14%)
Failed	3 (0%)
Still on treatment	84 (3%)
Lost to follow-up	273 (9%)

## Tuberculosis notification rates by sex, 1995-2007\*



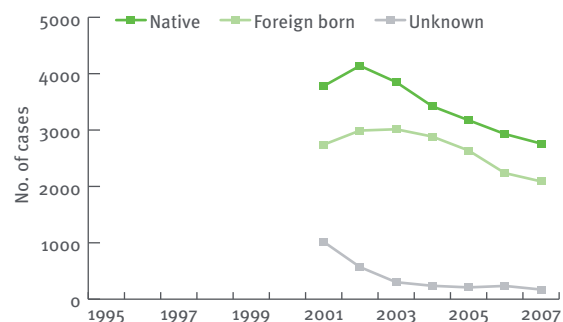
\* Notification system reorganised in 2001

## Tuberculosis notification rates by age group, 1995-2007\*



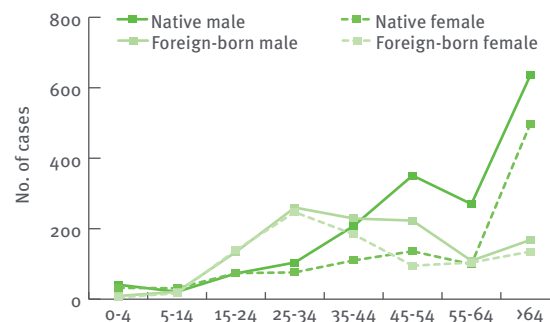
\* Notification system reorganised in 2001

## Tuberculosis cases by geographical origin, 1995-2007\*

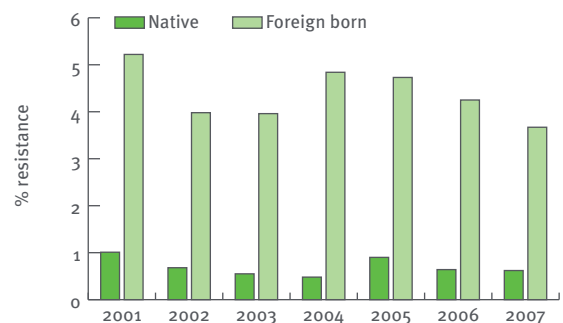


\* Notification system reorganised in 2001

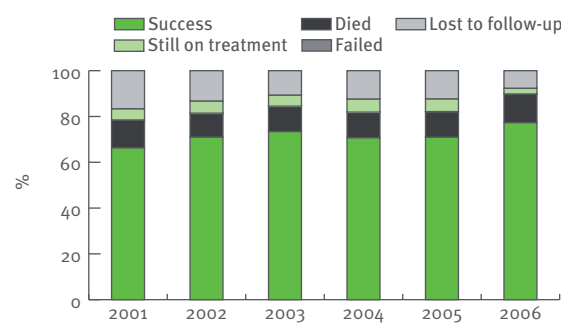
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Greece

## Tuberculosis case notifications, 2007

Total number of cases	659
Notification rate per 100 000	5.9
Sex ratio (M:F)	2.0
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born	215 (32.6%)
New (never-treated)	542 (82.2%)
Culture positive	209 (31.7%)
Pulmonary	549 (83.3%)
of which sputum smear positive	295 (53.7%)
HIV-positive TB cases	-
TB deaths per 100 000 (2004)	0.53

## Drug resistance surveillance, 2007

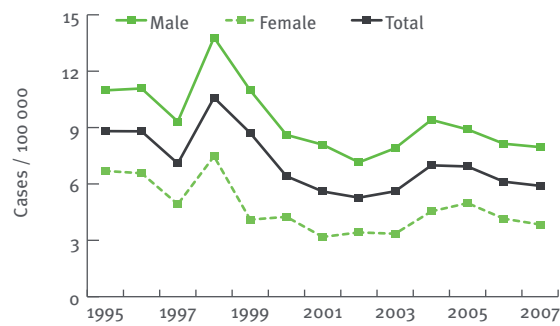
Geographical coverage	National*
International proficiency testing	No
Case-linked data reporting	No
Cases with DST results	533
Cases resistant to isoniazid	40 (7.5%)
Cases resistant to rifampicin	21 (3.9%)
MDR cases	14 (2.6%)
Cases resistant to ethambutol	25 (4.7%)
Cases resistant to streptomycin	63 (11.8%)

\* Data from NRL (representativeness unknown)

## Treatment outcome monitoring, 2006

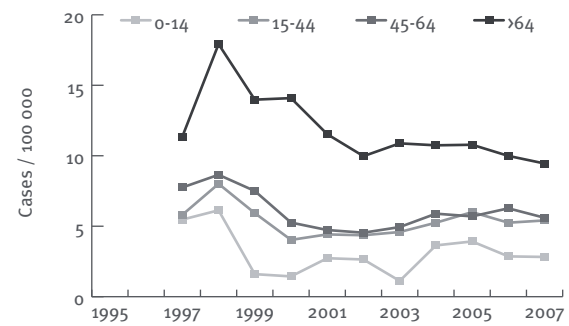
Not available

## Tuberculosis notification rates by sex, 1995–2007\*



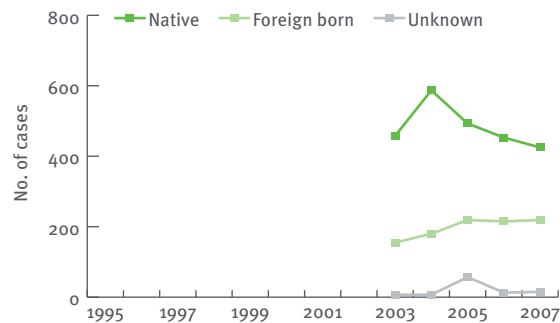
\* TB case definition changed in 1998

## Tuberculosis notification rates by age group, 1995–2007\*

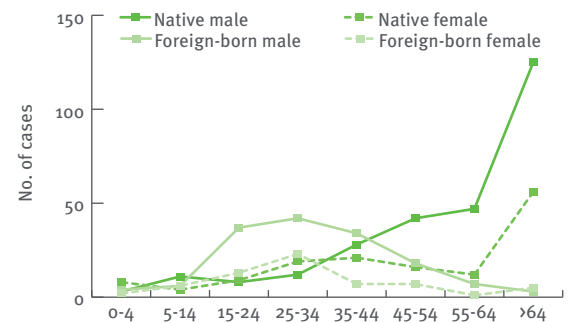


\* TB case definition changed in 1998

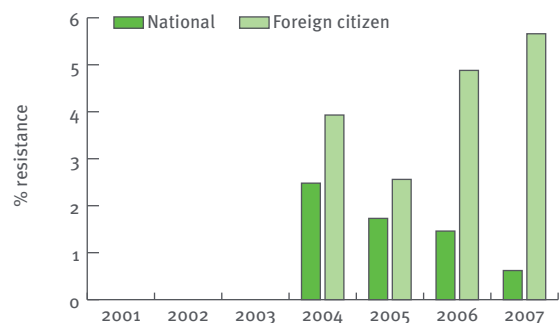
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; no data by geographical origin in 2001-2003; by citizenship in 2004 and by birth from 2005

## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available

# Hungary

## Tuberculosis case notifications, 2007

Total number of cases	1752
Notification rate per 100 000	17.4
Sex ratio (M:F)	2.0
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born	84 (4.8%)
New (never-treated)	1424 (81.3%)
Culture positive	766 (43.7%)
Pulmonary	1654 (94.4%)
of which sputum smear positive	467 (26.7%)
HIV-positive TB cases	-
TB deaths per 100 000 (2005)	2.54

## Drug resistance surveillance, 2007

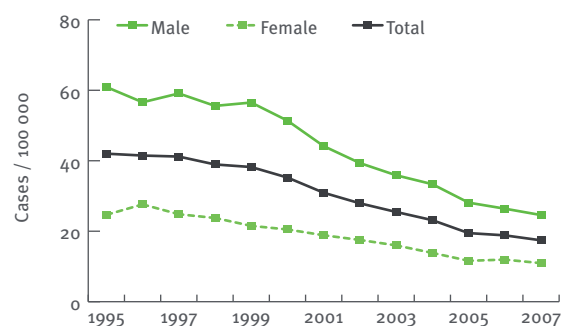
Geographical coverage	National*
International proficiency testing	Yes (2007)
Case-linked data reporting	Yes
Cases with DST results	574
Cases resistant to isoniazid	42 (7.3%)
Cases resistant to rifampicin	13 (2.3%)
MDR cases	11 (1.9%)
Cases resistant to ethambutol	11 (1.9%)
Cases resistant to streptomycin	32 (5.6%)

\* Data representativeness unknown

## Treatment outcome monitoring, 2006

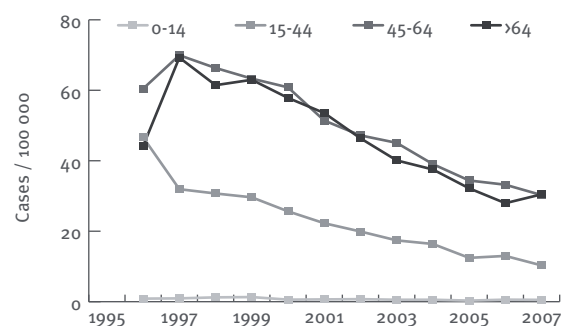
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	803
Success	385 (48%)
Died	87 (11%)
Failed	110 (14%)
Still on treatment	110 (14%)
Lost to follow-up	111 (14%)

## Tuberculosis notification rates by sex, 1995-2007\*



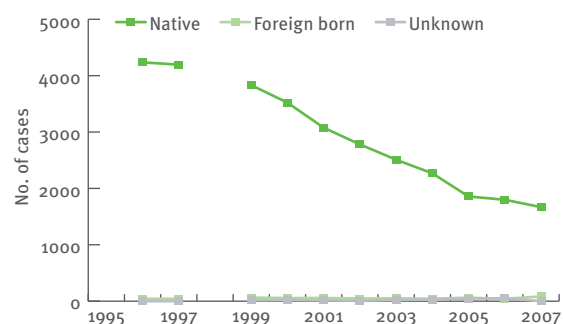
\* TB case definition changed in 1997

## Tuberculosis notification rates by age group, 1995-2007\*



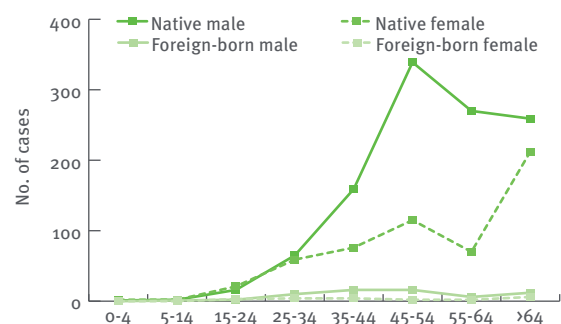
\* TB case definition changed in 1997

## Tuberculosis cases by geographical origin, 1995-2007\*

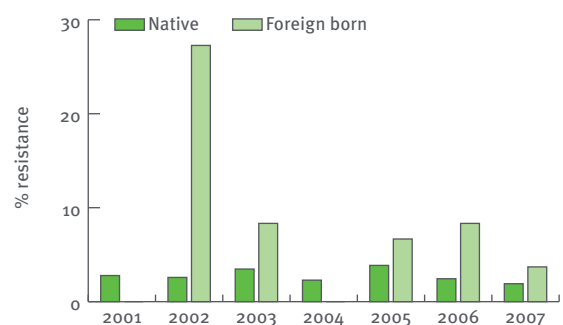


\* TB case definition changed in 1997

## Tuberculosis cases by origin, age group and sex, 2007

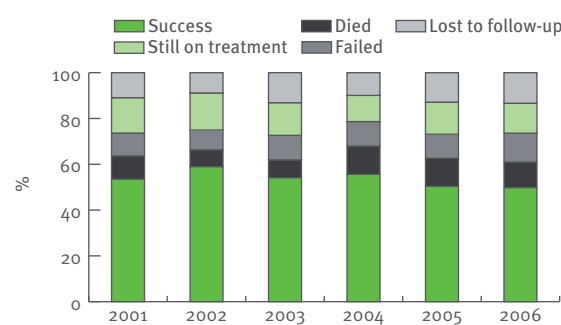


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Iceland

## Tuberculosis case notifications, 2007

Total number of cases	14
Notification rate per 100 000	4.5
Sex ratio (M:F)	0.4
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born	9 (64.3%)
New (never-treated)	12 (85.7%)
Culture positive	11 (78.6%)
Pulmonary	9 (64.3%)
of which sputum smear positive	3 (33.3%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2006)	0.7

## Drug resistance surveillance, 2007

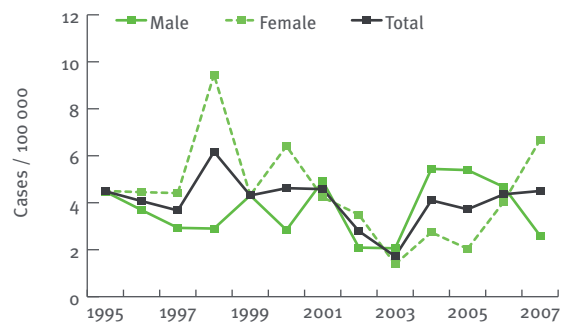
Geographical coverage	National
International proficiency testing	.*
Case-linked data reporting	Yes
Cases with DST results	11
Cases resistant to isoniazid	1 (9.1%)
Cases resistant to rifampicin	1 (9.1%)
MDR cases	1 (9.1%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	1 (9.1%)

\* DST done abroad

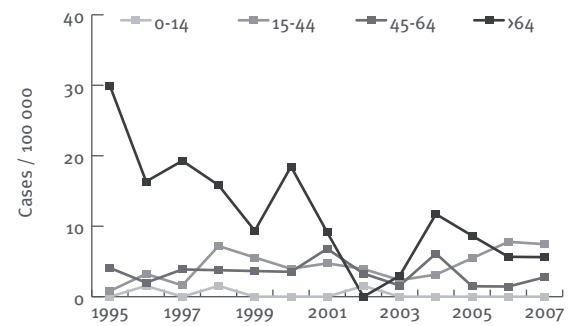
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	6
Success	4 (67%)
Died	1 (17%)
Failed	0 (0%)
Still on treatment	0 (0%)
Lost to follow-up	1 (17%)

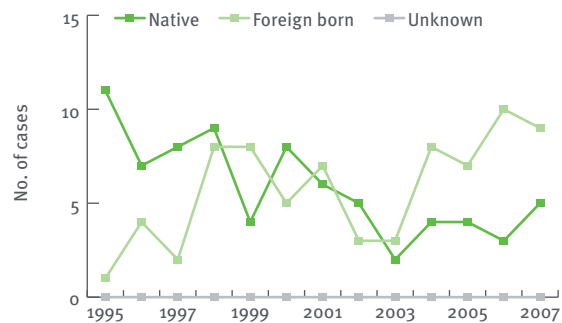
## Tuberculosis notification rates by sex, 1995–2007



## Tuberculosis notification rates by age group, 1995–2007



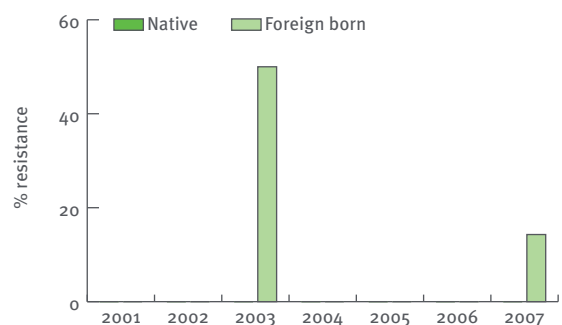
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007

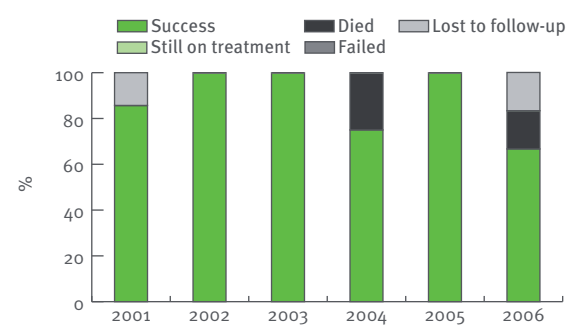
Insufficient number of cases for graphic presentation

## Combined multidrug resistance, by origin, 2001–2007\*



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

## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Ireland

## Tuberculosis case notifications, 2007

Total number of cases	478
Notification rate per 100 000	10.9
Sex ratio (M:F)	1.6
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born	181 (37.9%)
New (not previously diagnosed)	448 (93.7%)
Culture positive	238 (49.8%)
Pulmonary	347 (72.6%)
of which sputum smear positive	151 (43.5%)
HIV-positive TB cases	7 (1.5%)
TB deaths per 100 000 (2006)	0.94

## Drug resistance surveillance, 2007

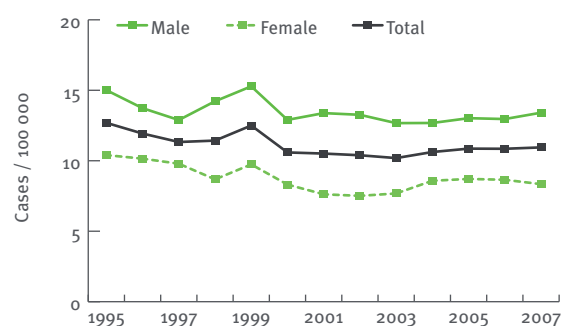
Geographical coverage	National*
International proficiency testing	Yes (2007)
Case-linked data reporting	Yes
Cases with DST results	142
Cases resistant to isoniazid	11 (7.7%)
Cases resistant to rifampicin	6 (4.2%)
MDR cases	5 (3.5%)
Cases resistant to ethambutol	4 (2.8%)
Cases resistant to streptomycin	4 (2.8%)

\* Data representativeness unknown

## Treatment outcome monitoring, 2006

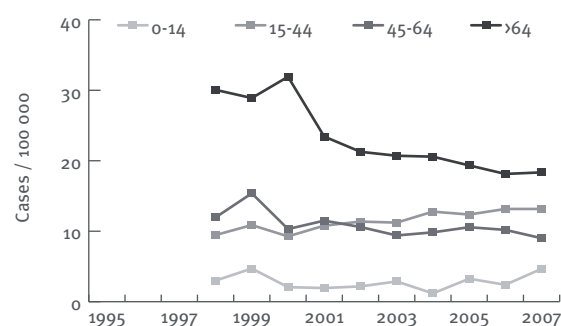
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	245
Success	145 (59%)
Died	19 (8%)
Failed	0 (0%)
Still on treatment	7 (3%)
Lost to follow-up	74 (30%)

## Tuberculosis notification rates by sex, 1995-2007\*



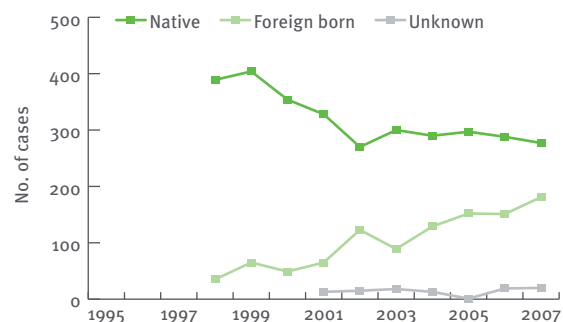
\* Notification system reorganised in 1998

## Tuberculosis notification rates by age group, 1995-2007\*



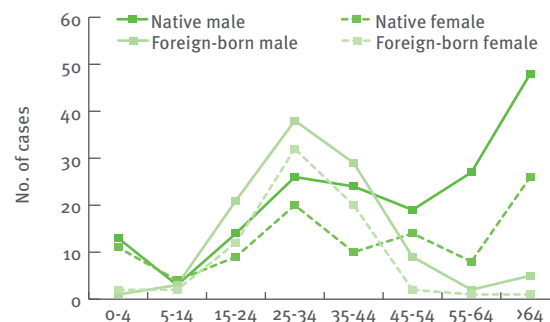
\* Notification system reorganised in 1998

## Tuberculosis cases by geographical origin, 1995-2007\*

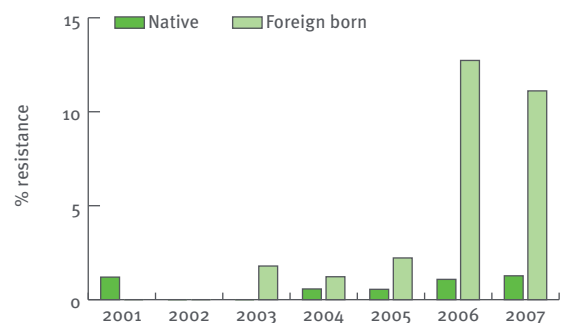


\* Notification system reorganised in 1998

## Tuberculosis cases by origin, age group and sex, 2007

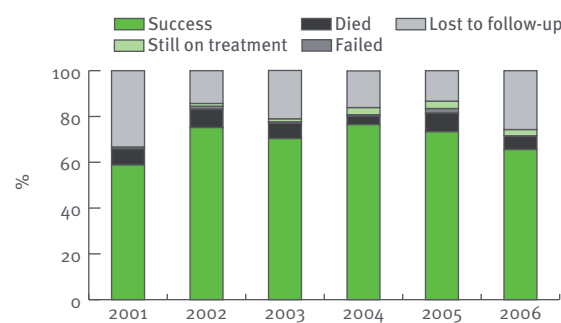


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown in 2006

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Israel

## Tuberculosis case notifications, 2007

Total number of cases	397
Notification rate per 100 000	5.6
Sex ratio (M:F)	1.4
Median age group, nationals	35-44 years
Median age group, non-nationals	35-45 years
Foreign born	337 (84.9%)
New (never-treated)	385 (97.0%)
Culture positive	273 (68.8%)
Pulmonary	317 (79.8%)
of which sputum smear positive	148 (46.7%)
HIV-positive TB cases	18 (4.5%)
TB deaths per 100 000 (2004)	0.59

## Drug resistance surveillance, 2007

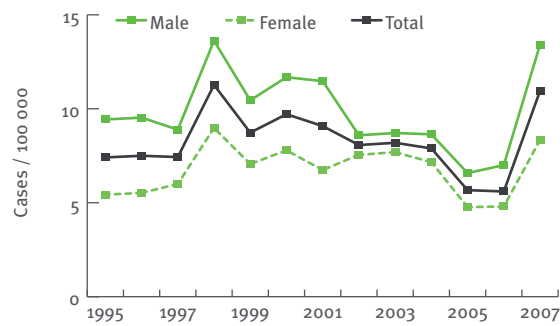
Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	No*
Cases with DST results	268
Cases resistant to isoniazid	48 (17.9%)
Cases resistant to rifampicin	20 (7.5%)
MDR cases	18 (6.7%)
Cases resistant to ethambutol	11 (4.1%)
Cases resistant to streptomycin	45 (16.8%)

\* DST results shown from aggregate data reported to WHO Europe

## Treatment outcome monitoring, 2006

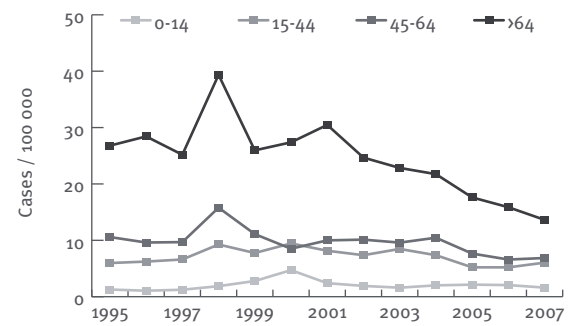
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	No
Included in TOM cohort	218
Success	163 (75%)
Died	30 (14%)
Failed	1 (0%)
Still on treatment	3 (1%)
Lost to follow-up	21 (10%)

## Tuberculosis notification rates by sex, 1995-2007\*



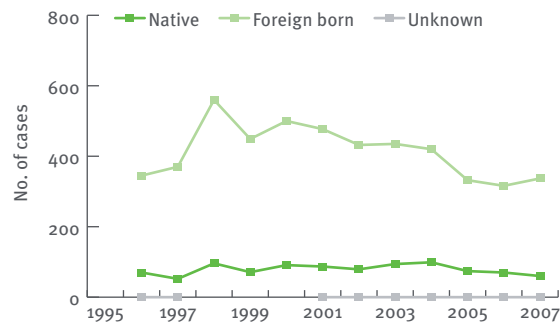
\* TB notification system reorganised in 1998

## Tuberculosis notification rates by age group, 1995-2007\*



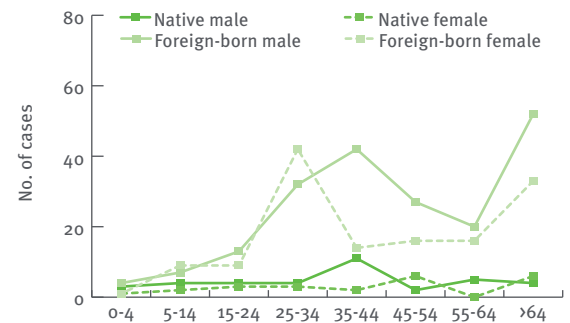
\* TB notification system reorganised in 1998

## Tuberculosis cases by geographical origin, 1995-2007\*

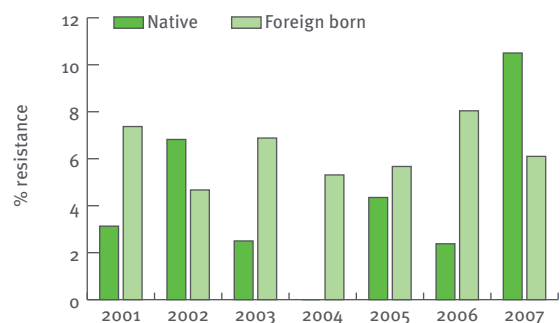


\* TB notification system reorganised in 1998

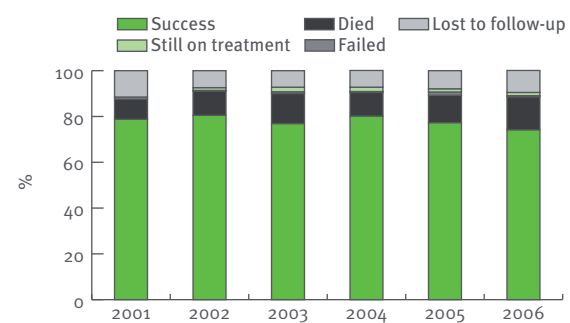
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Italy

## Tuberculosis case notifications, 2007

Total number of cases	4527
Notification rate per 100 000	7.6
Sex ratio (M:F)	1.5
Median age group, nationals	45-54 years
Median age group, non-nationals	35-44 years
Foreign born	2083 (46.0%)
New (never-treated)*	3177 (70.2%)
Culture positive	1698 (37.5%)
Pulmonary	3438 (75.9%)
of which sputum smear positive	1621 (47.1%)
HIV-positive (selected TB cases, 2004)	11 (2.7%)
TB deaths per 100 000 (2003)	0.86

\* 18% of cases missing data on previous TB

## Drug resistance surveillance, 2007

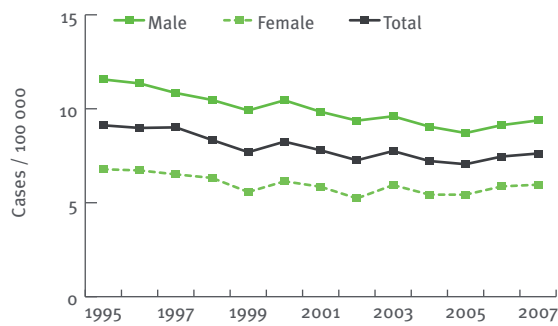
Geographical coverage	Partial*
International proficiency testing	Yes
Case-linked data reporting	No
Cases with DST results	1698
Cases resistant to isoniazid	173 (10.2%)
Cases resistant to rifampicin	71 (4.2%)
MDR cases	56 (3.3%)
Cases resistant to ethambutol	39 (2.3%)
Cases resistant to streptomycin	159 (9.4%)

\* Data from NRL + regional labs (representativeness unknown)

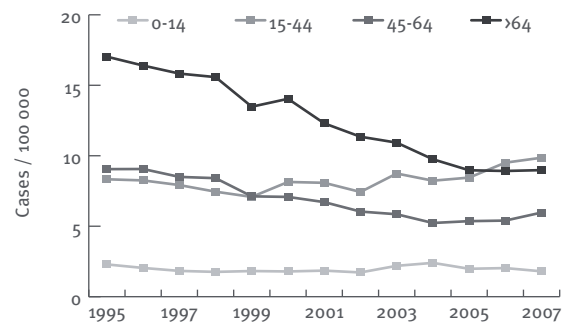
## Treatment outcome monitoring, 2006

Not available

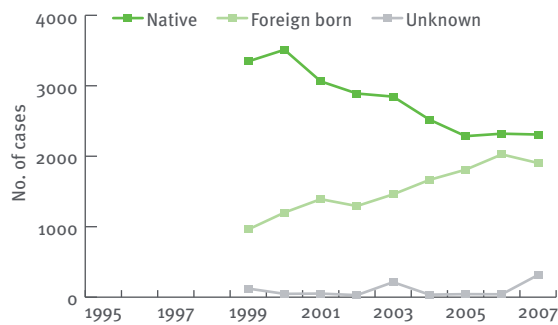
## Tuberculosis notification rates by sex, 1995–2007



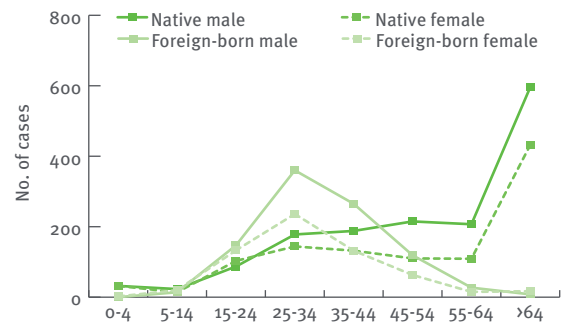
## Tuberculosis notification rates by age group, 1995–2007



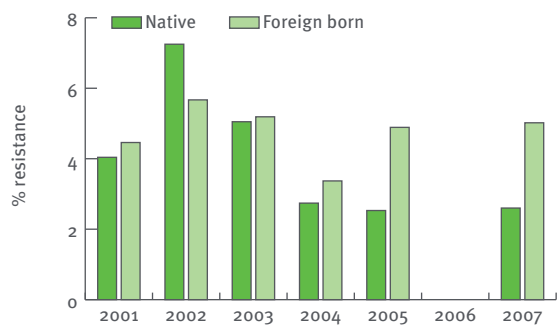
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007

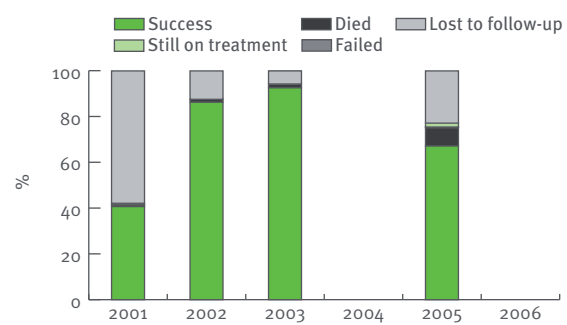


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; no data by geographical origin in 2006

## Outcomes, new pulmonary culture-positive cases, 2001–2006\*



\* Data representativeness unknown; no data in 2004 & 2006



# Kazakhstan

## Tuberculosis case notifications, 2007

Total number of cases	40279
Notification rate per 100 000	258.0
Sex ratio (M:F)	1.6
Median age group, nationals	25-34 years
Median age group, non-nationals	-
Foreign citizens	0 (0.0%)
New (never-treated)	19584 (48.6%)
Culture positive	6883 (17.1%)
Pulmonary	36003 (89.4%)
of which sputum smear positive	19147 (53.2%)
HIV-positive TB cases	171 (0.4%)
TB deaths per 100 000 (2006)	20.06

## Drug resistance surveillance, 2007

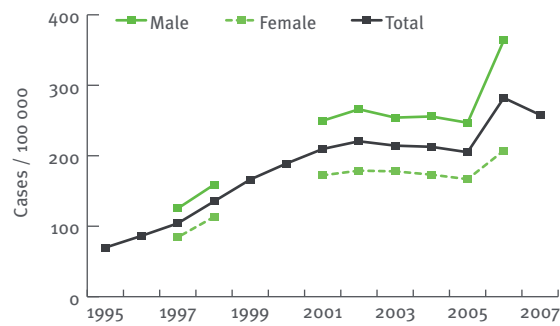
Geographical coverage	National*
International proficiency testing	Yes (2007)
Case-linked data reporting	No
Cases with DST results	15506
Cases resistant to isoniazid	8604 (55.5%)
Cases resistant to rifampicin	5944 (38.3%)
MDR cases	5568 (35.9%)
Cases resistant to ethambutol	5021 (32.4%)
Cases resistant to streptomycin	8858 (57.1%)

\* All DST labs (representativeness unknown)

## Treatment outcome monitoring, 2006

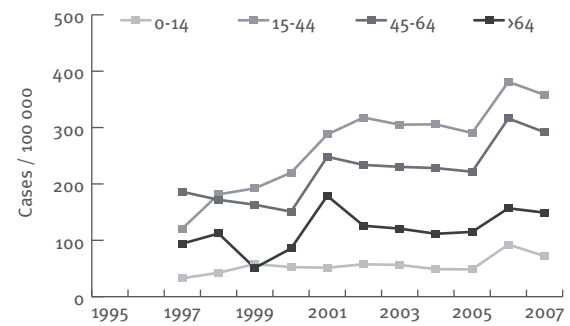
Geographical coverage	National
Outcome cohort	New & relapse pulm smear positive
Case-linked data reporting	No
Included in TOM cohort	23091
Success	8666 (38%)
Died	2993 (13%)
Failed	3429 (15%)
Still on treatment	0 (0%)
Lost to follow-up	7735 (33%)

## Tuberculosis notification rates by sex, 1995–2007\*



\* Sharp increase in cases previously treated & with unknown history in 2006

## Tuberculosis notification rates by age group, 1995–2007\*

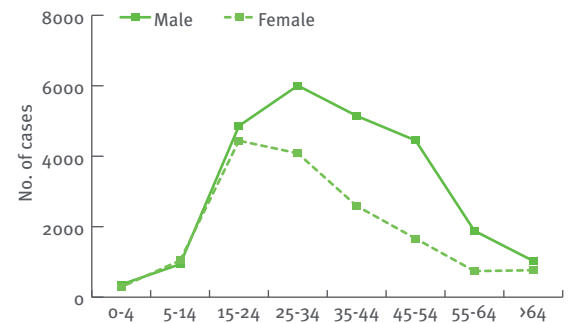


\* Sharp increase in cases previously treated & with unknown history in 2006

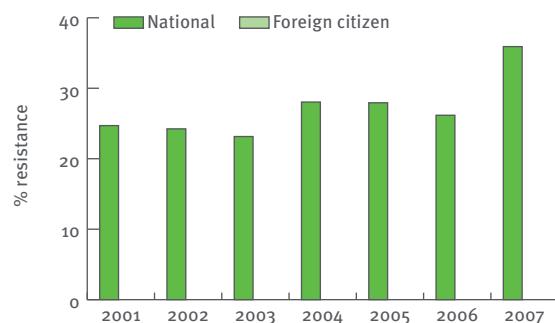
## Tuberculosis cases by geographical origin, 1995–2007

Foreign citizen cases not reported

## Tuberculosis cases by age group and sex, 2007

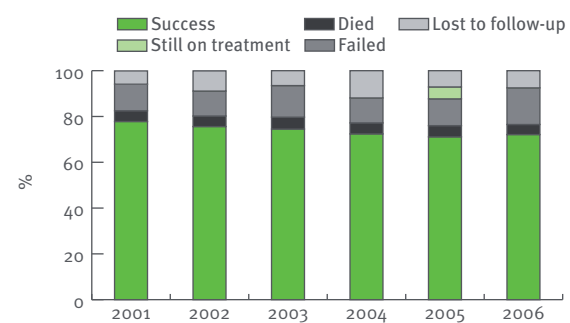


## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; citizen origin unknown in 2001-2003

## Outcomes, new pulmonary smear-positive cases, 2001–2006



# Kyrgyzstan

## Tuberculosis case notifications, 2007

Total number of cases	6707
Notification rate per 100 000	125.1
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)	5667 (84.5%)
Culture positive	-
Pulmonary	4980 (74.3%)
of which sputum smear positive	2361 (47.4%)
HIV-positive TB cases	-
TB deaths per 100 000 (2006)	15.85

\* For new cases only

## Drug resistance surveillance, 2007

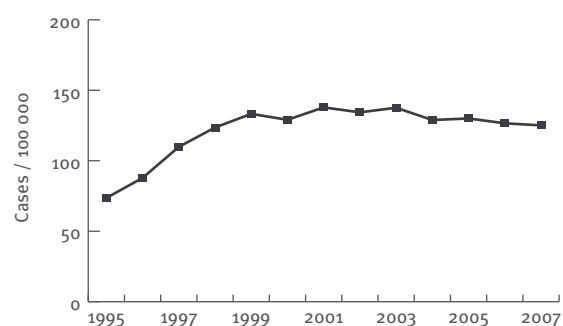
Geographical coverage	Partial*
International proficiency testing	Yes (2007)
Case-linked data reporting	No
Cases with DST results	1218
Cases resistant to isoniazid	388 (31.9%)
Cases resistant to rifampicin	224 (18.4%)
MDR cases	336 (27.6%)
Cases resistant to ethambutol	217 (17.8%)
Cases resistant to streptomycin	540 (44.3%)

\* Data from NRL (representativeness unknown)

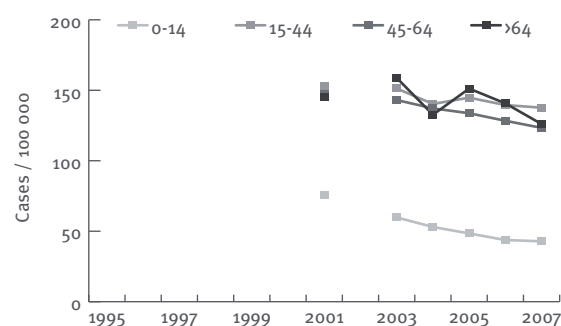
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	New & relapse pulm smear positive
Case-linked data reporting	No
Included in TOM cohort	2281
Success	1824 (80%)
Died	119 (5%)
Failed	144 (6%)
Still on treatment	0 (0%)
Lost to follow-up	178 (8%)

## Tuberculosis notification rates, 1995-2007



## Tuberculosis notification rates by age group, 1995-2007\*

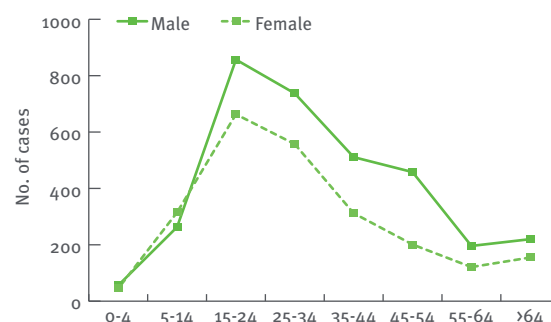


\* New cases only

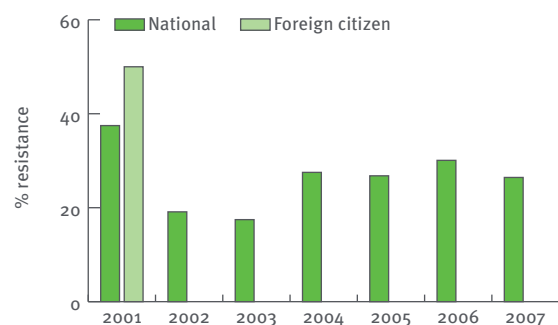
## Tuberculosis cases by geographical origin, 1995-2007

No foreign citizen cases reported

## Tuberculosis cases by age group and sex, 2007

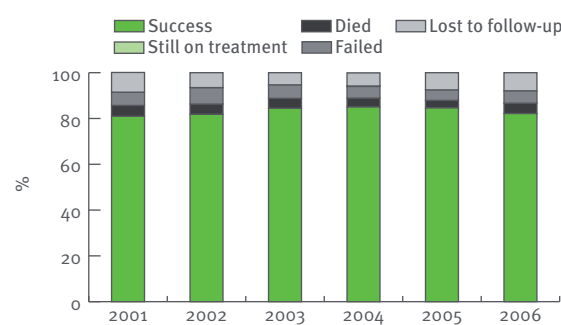


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown; one out of two cases of foreign origin with DST results in 2001 had MDR

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Latvia

## Tuberculosis case notifications, 2007

Total number of cases	1255
Notification rate per 100 000	55.1
Sex ratio (M:F)	2.3
Median age group, nationals	35-44 years
Median age group, non-nationals	45-54 years
Foreign born	66 (5.3%)
New (never-treated)	1079 (86.0%)
Culture positive	993 (79.1%)
Pulmonary	1114 (88.8%)
of which sputum smear positive	606 (54.4%)
HIV-positive TB cases	55 (4.4%)
TB deaths per 100 000 (2005)	7.95

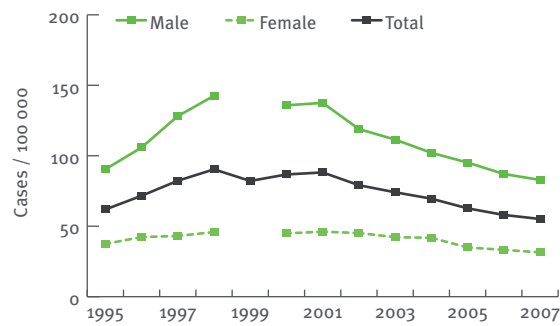
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	975
Cases resistant to isoniazid	245 (25.1%)
Cases resistant to rifampicin	100 (10.3%)
MDR cases	98 (10.1%)
Cases resistant to ethambutol	90 (9.2%)
Cases resistant to streptomycin	233 (23.9%)

## Treatment outcome monitoring, 2006

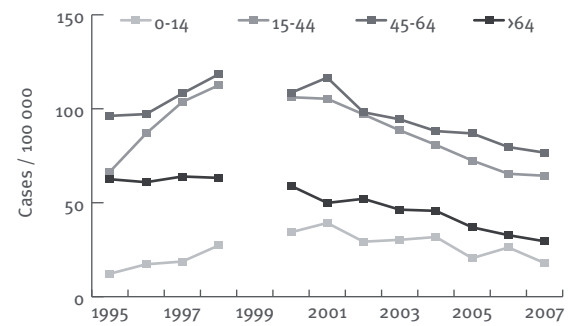
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	955
Success	682 (71%)
Died	94 (10%)
Failed	8 (1%)
Still on treatment	109 (11%)
Lost to follow-up	62 (6%)

## Tuberculosis notification rates by sex, 1995–2007\*



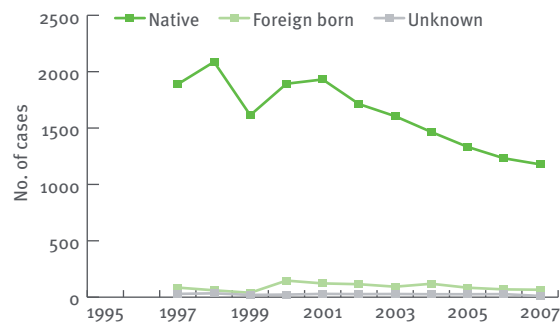
\* Re-treated cases other than relapses included since 2001

## Tuberculosis notification rates by age group, 1995–2007\*



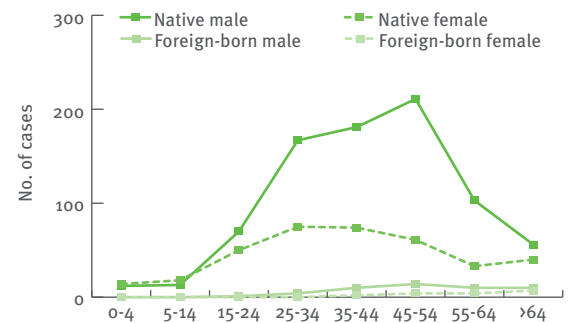
\* Re-treated cases other than relapses included since 2001

## Tuberculosis cases by geographical origin, 1995–2007\*

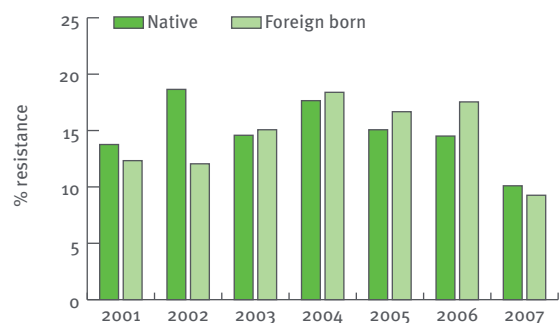


\* Re-treated cases other than relapses included since 2001

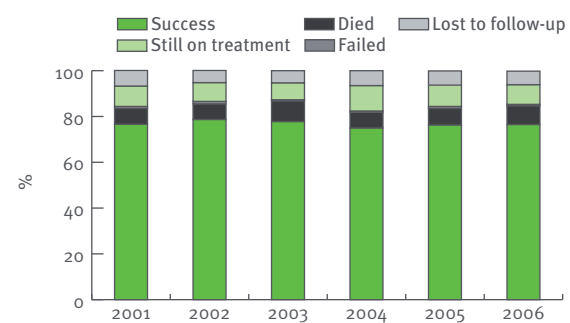
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Liechtenstein

## Tuberculosis case notifications, 2007

Total number of cases	5
Notification rate per 100 000	14.2
Sex ratio (M:F)	1.6
Median age group, nationals	-
Median age group, non-nationals	35-44 years
Foreign born	4 (80.0%)
New (never-treated)	5 (100.0%)
Culture positive	5 (100.0%)
Pulmonary	4 (80.0%)
of which sputum smear positive	4 (100.0%)
HIV-positive TB cases	-
TB deaths per 100 000	-

## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	No*
Case-linked data reporting	Yes
Cases with DST results	5
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	0 (0.0%)

\* DST done in Switzerland

## Treatment outcome monitoring, 2006

Not available

## Tuberculosis notification rates by sex, 1995–2007

Insufficient number of cases for graphic presentation

## Tuberculosis notification rates by age group, 1995–2007

Insufficient number of cases for graphic presentation

## Tuberculosis cases by geographical origin, 1995–2007

Insufficient number of cases for graphic presentation

## Tuberculosis cases by origin, age group and sex, 2007

Insufficient number of cases for graphic presentation

## Combined multidrug resistance, by origin, 2001–2007

No MDR cases reported

## Outcomes, new pulmonary culture-positive cases, 2001–2006

No cases were reported

# Lithuania

## Tuberculosis case notifications, 2007

Total number of cases	2408
Notification rate per 100 000	71.3
Sex ratio (M:F)	2.4
Median age group, nationals	45-54 years
Median age group, non-nationals	55-64 years
Foreign born	76 (3.2%)
New (never-treated)	1977 (82.1%)
Culture positive	1686 (70.0%)
Pulmonary	2128 (88.4%)
of which sputum smear positive	1266 (59.5%)
HIV-positive TB cases	21 (0.9%)
TB deaths per 100 000 (2006)	10.87

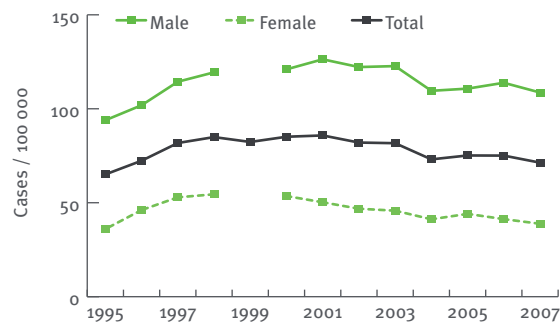
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	1686
Cases resistant to isoniazid	491 (29.1%)
Cases resistant to rifampicin	321 (19.0%)
MDR cases	314 (18.6%)
Cases resistant to ethambutol	203 (12.0%)
Cases resistant to streptomycin	449 (26.6%)

## Treatment outcome monitoring, 2006

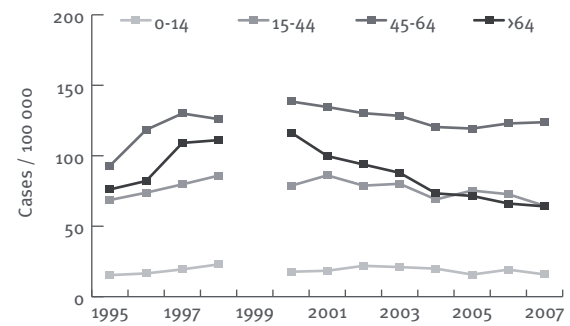
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	1731
Success	1153 (67%)
Died	245 (14%)
Failed	33 (2%)
Still on treatment	88 (5%)
Lost to follow-up	212 (12%)

## Tuberculosis notification rates by sex, 1995-2007\*



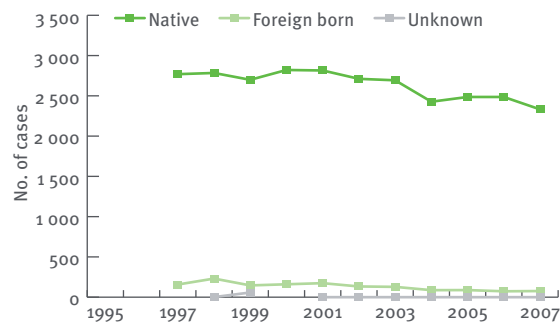
\* Re-treated cases other than relapses included since 2001

## Tuberculosis notification rates by age group, 1995-2007\*



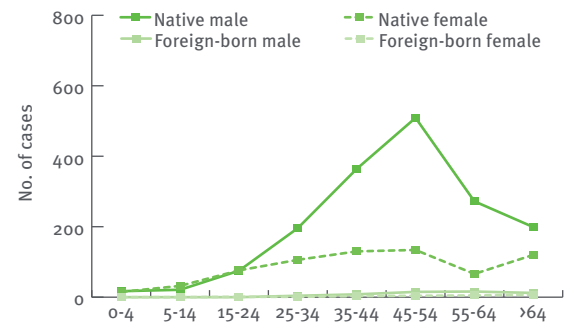
\* Re-treated cases other than relapses included since 2001

## Tuberculosis cases by geographical origin, 1995-2007\*

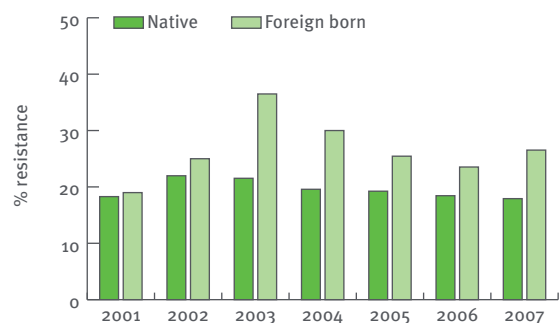


\* Re-treated cases other than relapses included since 2001

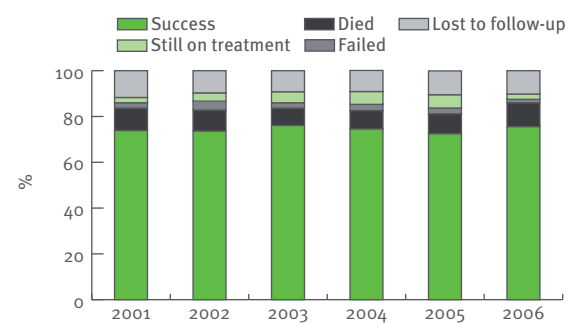
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Luxembourg

## Tuberculosis case notifications, 2007

Total number of cases	39
Notification rate per 100 000	8.1
Sex ratio (M:F)	1.2
Median age group, nationals	>64 years
Median age group, non-nationals	35-44 years
Foreign born	24 (61.5%)
New (never-treated)*	-
Culture positive	26 (66.7%)
Pulmonary	35 (89.7%)
of which sputum smear positive	0 (0.0%)
HIV-positive TB cases	-
TB deaths per 100 000 (2006)	0

\*Treatment history information not provided

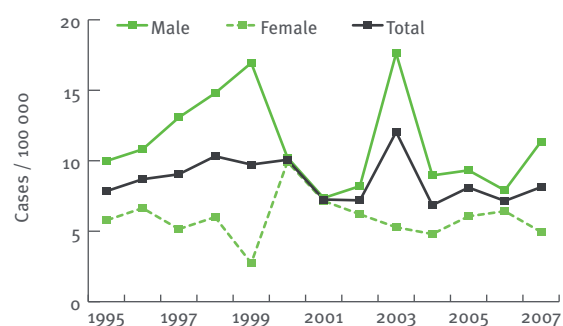
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	No
Case-linked data reporting	Yes
Cases with DST results	32
Cases resistant to isoniazid	1 (3.1%)
Cases resistant to rifampicin	0 (0.0%)
MDR cases	0 (0.0%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	0 (0.0%)

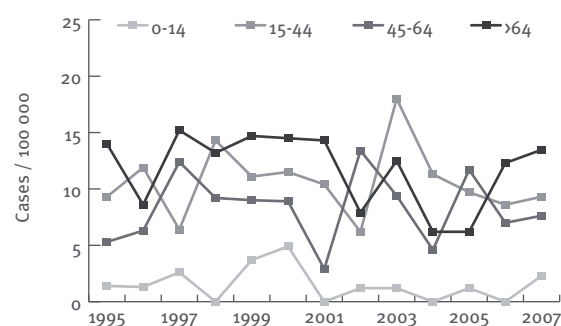
## Treatment outcome monitoring, 2006

Not available

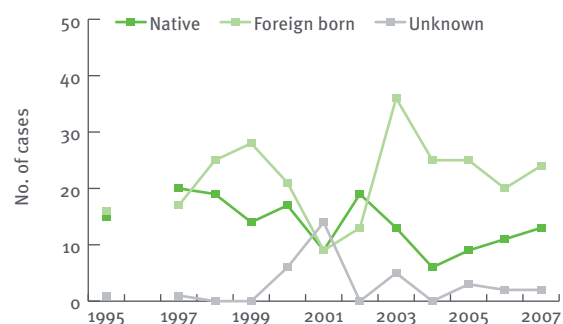
## Tuberculosis notification rates by sex, 1995–2007



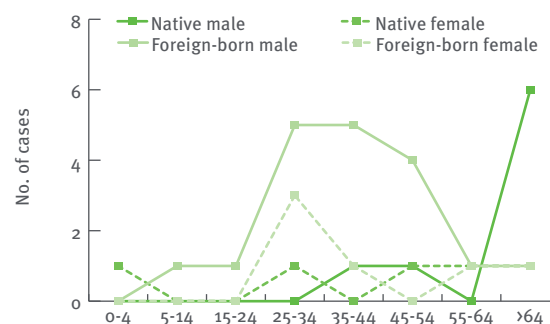
## Tuberculosis notification rates by age group, 1995–2007



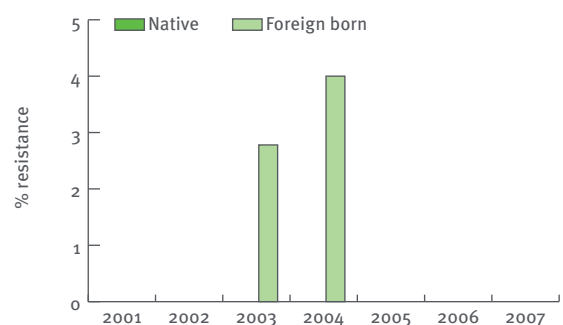
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available

# Malta

## Tuberculosis case notifications, 2007

Total number of cases	38
Notification rate per 100 000	9.3
Sex ratio (M:F)	6.6
Median age group, nationals	>64 years
Median age group, non-nationals	15-24 years
Foreign citizens	23 (60.5%)
New (never-treated)	36 (94.7%)
Culture positive	19 (50.0%)
Pulmonary	27 (71.1%)
of which sputum smear positive	9 (33.3%)
HIV-positive TB cases	2 (5.3%)
TB deaths per 100 000 (2006)	0.25

## Drug resistance surveillance, 2007

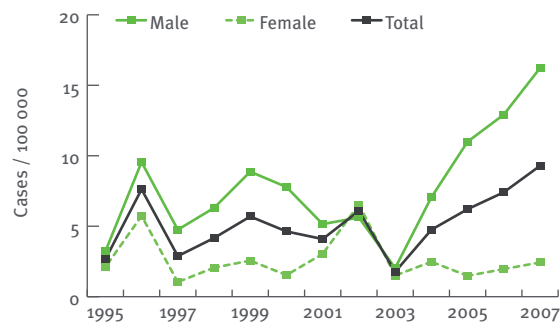
Geographical coverage	National
International proficiency testing	.*
Case-linked data reporting	Yes
Cases with DST results	19
Cases resistant to isoniazid	2 (10.5%)
Cases resistant to rifampicin	1 (5.3%)
MDR cases	1 (5.3%)
Cases resistant to ethambutol	1 (5.3%)
Cases resistant to streptomycin	4 (21.1%)

\* DST done abroad

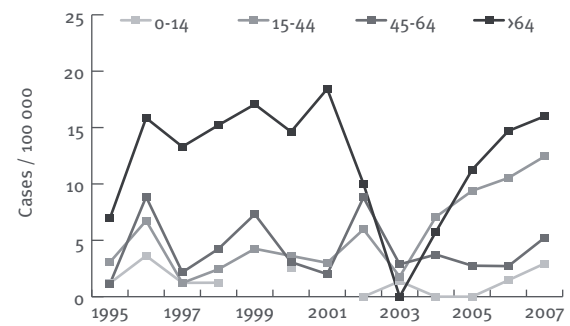
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	11
Success	11 (100%)
Died	0 (0%)
Failed	0 (0%)
Still on treatment	0 (0%)
Lost to follow-up	0 (0%)

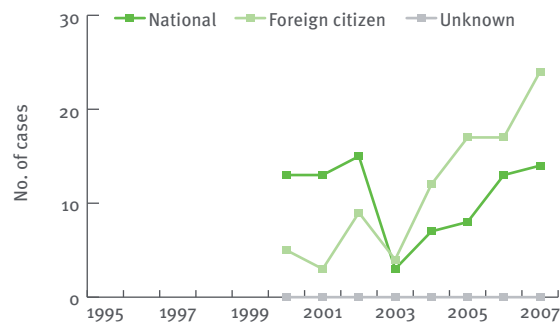
## Tuberculosis notification rates by sex, 1995–2007



## Tuberculosis notification rates by age group, 1995–2007



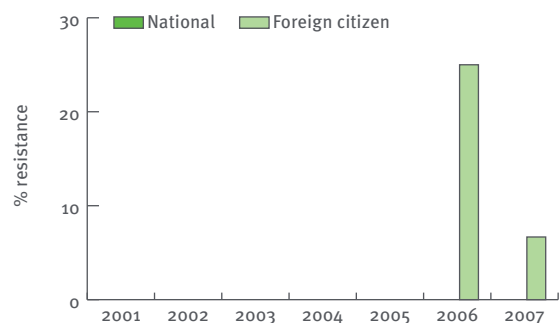
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007

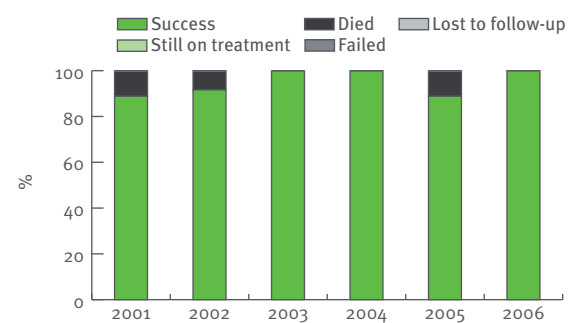
Insufficient number of cases for graphic presentation

## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown in 2003-2005; one out of 14 cases in foreign citizens with DST results in 2006 had MDR

## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Monaco

### Tuberculosis case notifications, 2007

Not available

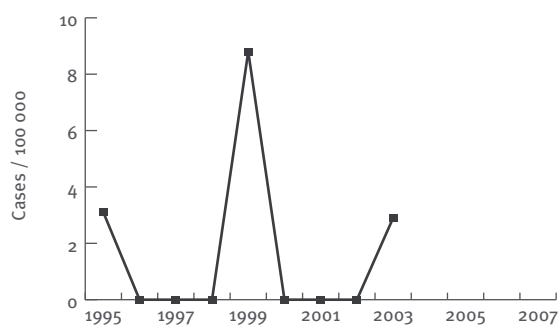
### Drug resistance surveillance, 2007

Not available

### Treatment outcome monitoring, 2006

Not available

### Tuberculosis notification rates by sex, 1995–2007\*



\* No data reported in 2004-2007

### Tuberculosis notification rates by age group, 1995–2007

Not available

### Tuberculosis cases by geographical origin, 1995–2007

Not available

### Tuberculosis cases by origin, age group and sex, 2007

Not available

### Combined multidrug resistance, by origin, 2001–2007

Not available

### Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available



# Montenegro

## Tuberculosis case notifications, 2007

Total number of cases	159
Notification rate per 100 000	25.4
Sex ratio (M:F)	2.1
Median age group, nationals	45-54 years
Median age group, non-nationals	-
Foreign citizens	-
New (never-treated)	136 (85.5%)
Culture positive	89 (56.0%)
Pulmonary	139 (87.4%)
of which sputum smear positive	46 (33.1%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2006)	0.25

## Drug resistance surveillance, 2007

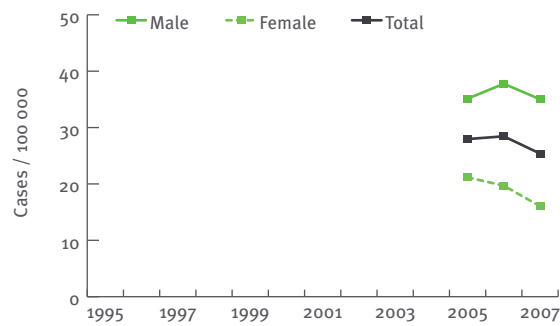
Geographical coverage	National*
International proficiency testing	No
Case-linked data reporting	No
Cases with DST results	87
Cases resistant to isoniazid	2 (2.3%)
Cases resistant to rifampicin	2 (2.3%)
MDR cases	2 (2.3%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	4 (4.6%)

\* Data from NRL

## Treatment outcome monitoring, 2006

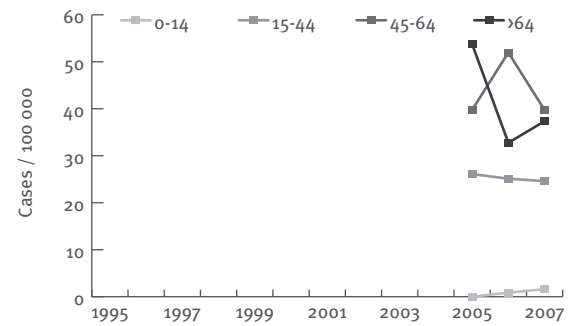
Geographical coverage	
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	126
Success	24 (19%)
Died	5 (4%)
Failed	0 (0%)
Still on treatment	0 (0%)
Lost to follow-up	39 (31%)

## Tuberculosis notification rates by sex, 1995-2007\*



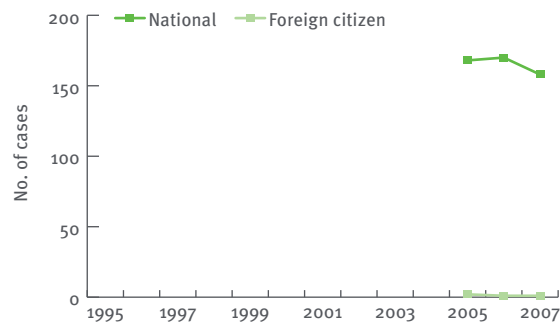
\* Established in 2006 following the split of Serbia & Montenegro; data starting from 2005

## Tuberculosis notification rates by age group, 1995-2007\*



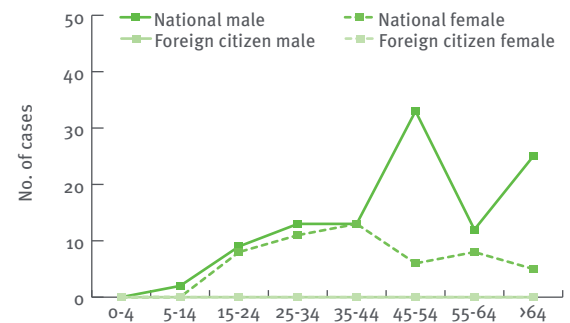
\* Established in 2006 following the split of Serbia & Montenegro; data starting from 2005

## Tuberculosis cases by geographical origin, 1995-2007\*

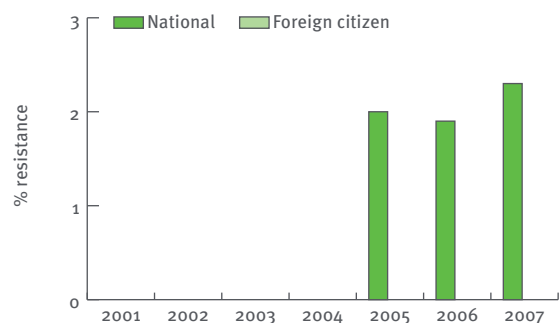


\* Established in 2006 following the split of Serbia & Montenegro; data starting from 2005

## Tuberculosis cases by origin, age group and sex, 2007

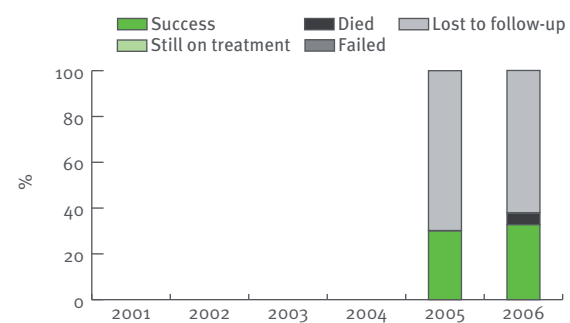


## Combined multidrug resistance, by origin, 2001-2007\*



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

## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* Pilot project, results incomplete

# Netherlands

## Tuberculosis case notifications, 2007

Total number of cases	960
Notification rate per 100 000	5.9
Sex ratio (M:F)	1.3
Median age group, nationals	45-54 years
Median age group, non-nationals	35-44 years
Foreign born	597 (62.2%)
New (never-treated)	916 (95.4%)
Culture positive	573 (59.7%)
Pulmonary	577 (60.1%)
of which sputum smear positive	202 (35.0%)
HIV-positive TB cases	32 (3.3%)
TB deaths per 100 000 (2006)	0.46

## Drug resistance surveillance, 2007\*

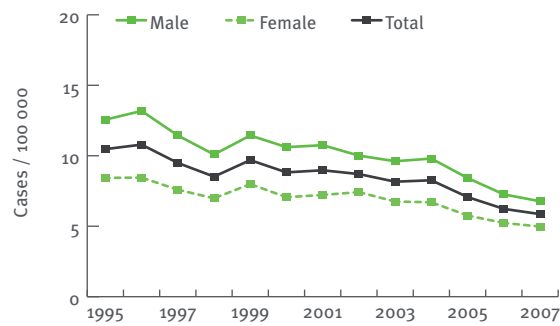
Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	729
Cases resistant to isoniazid	31 (4.3%)
Cases resistant to rifampicin	5 (0.7%)
MDR cases	3 (0.4%)
Cases resistant to ethambutol	4 (0.5%)
Cases resistant to streptomycin	0 (0.0%)

\* Based on case-based data reported in December 2008

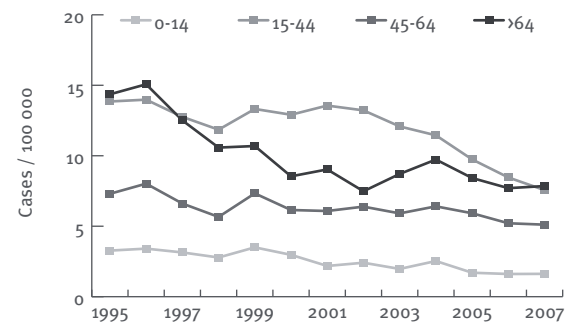
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	500
Success	421 (84%)
Died	53 (11%)
Failed	1 (0%)
Still on treatment	0 (0%)
Lost to follow-up	25 (5%)

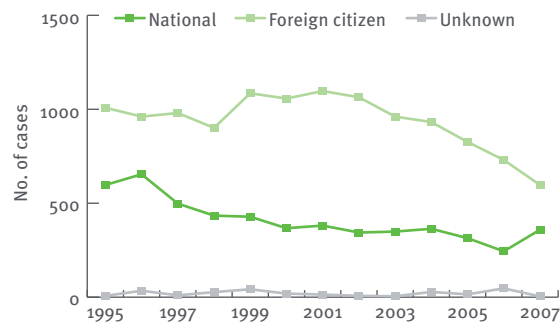
## Tuberculosis notification rates by sex, 1995–2007



## Tuberculosis notification rates by age group, 1995–2007

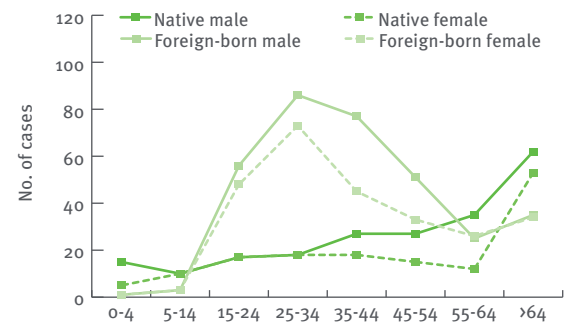


## Tuberculosis cases by geographical origin, 1995–2007\*

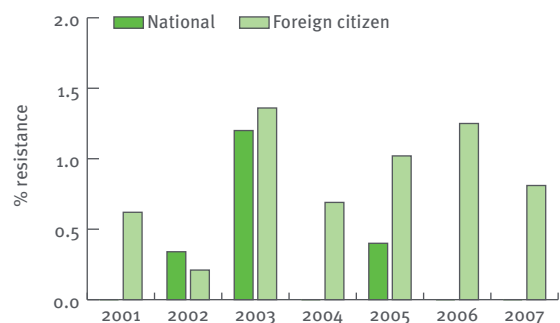


\* By birthplace of case and parents

## Tuberculosis cases by origin, age group and sex, 2007

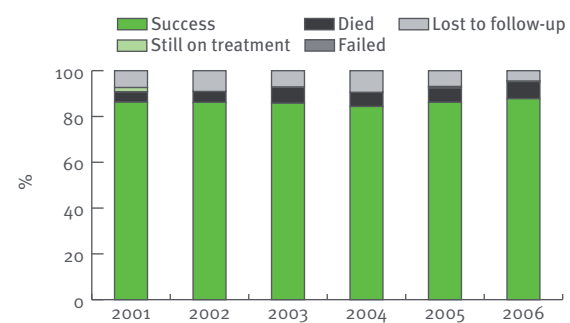


## Combined multidrug resistance, by origin, 2001–2007\*



\* By birthplace from 2005

## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Norway

## Tuberculosis case notifications, 2007

Total number of cases	307
Notification rate per 100 000	6.3
Sex ratio (M:F)	1.0
Median age group, nationals	>65 years
Median age group, non-nationals	25-34 years
Foreign born	243 (79.2%)
New (never-treated)*	199 (64.8%)
Culture positive	245 (79.8%)
Pulmonary	181 (59.0%)
of which sputum smear positive	44 (24.3%)
HIV-positive TB cases	-
TB deaths per 100 000 (2005)	0.91

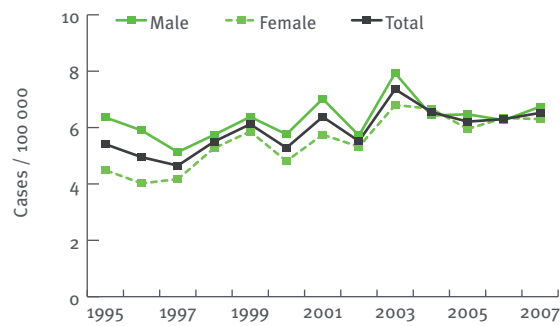
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	242
Cases resistant to isoniazid	25 (10.3%)
Cases resistant to rifampicin	4 (1.7%)
MDR cases	3 (1.2%)
Cases resistant to ethambutol	24 (9.9%)
Cases resistant to streptomycin	13 (5.4%)

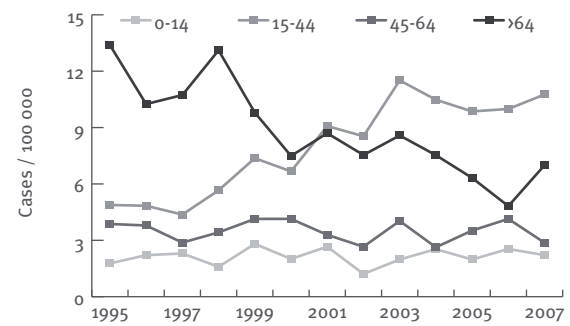
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	144
Success	121 (84%)
Died	6 (4%)
Failed	0 (0%)
Still on treatment	3 (2%)
Lost to follow-up	14 (10%)

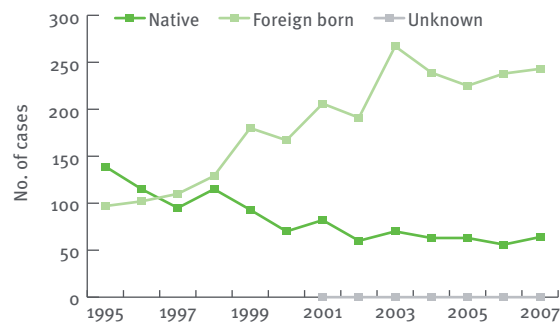
## Tuberculosis notification rates by sex, 1995-2007



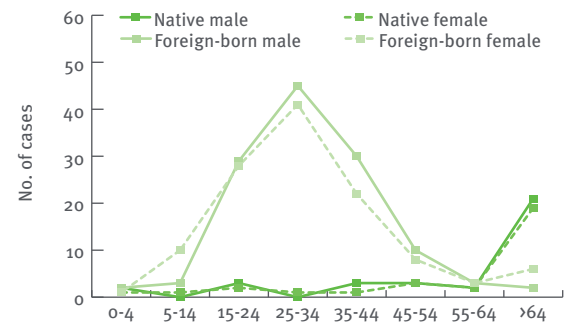
## Tuberculosis notification rates by age group, 1995-2007



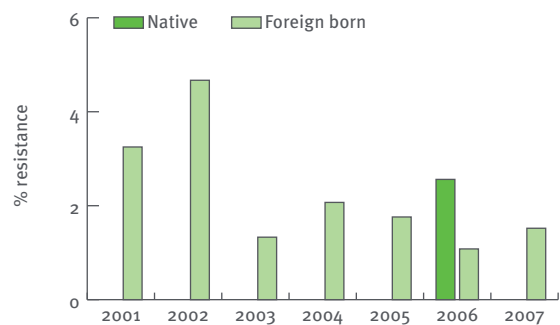
## Tuberculosis cases by geographical origin, 1995-2007



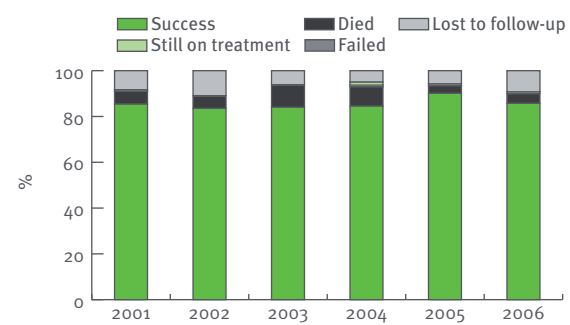
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Poland

## Tuberculosis case notifications, 2007

Total number of cases	8616
Notification rate per 100 000	22.6
Sex ratio (M:F)	2.0
Median age group (all cases)	45-54 years
Median age group, non-nationals	25-34 years
Foreign citizens	55 (0.6%)
New (not previously diagnosed)	7569 (87.8%)
Culture positive	5412 (62.8%)
Pulmonary	7988 (92.7%)
of which sputum smear positive	3314 (41.5%)
HIV-positive TB cases (2003)	15 (0.1%)
TB deaths per 100 000 (2006)	1.99

## Drug resistance surveillance, 2004

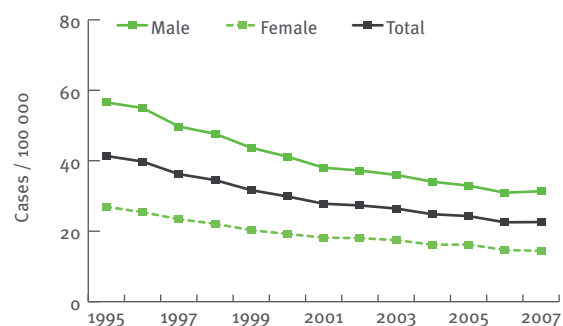
Geographical coverage	National
International proficiency testing	Yes (2004)
Case-linked data reporting	No*
Cases with DST results	3239
Cases resistant to isoniazid	162 (5.0%)
Cases resistant to rifampicin	66 (2.0%)
MDR cases	51 (1.6%)
Cases resistant to ethambutol	16 (0.5%)
Cases resistant to streptomycin	131 (4.0%)

\* Survey of all DST laboratories

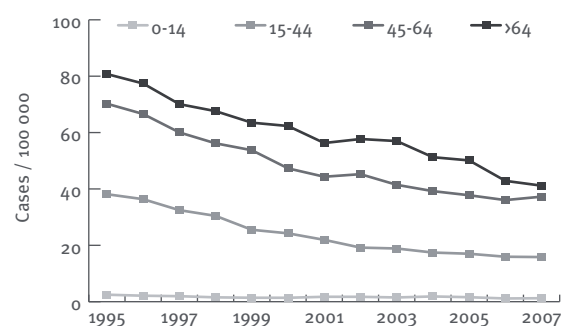
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	4989
Success	3602 (72%)
Died	312 (6%)
Failed	45 (1%)
Still on treatment	17 (0%)
Lost to follow-up	1013 (20%)

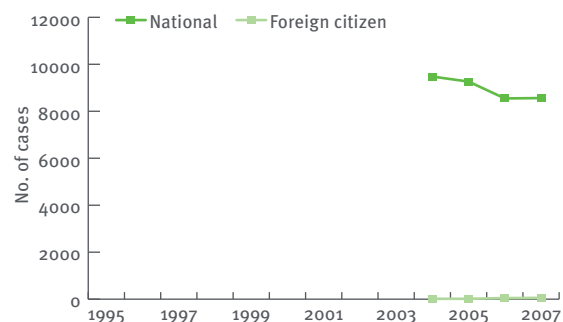
## Tuberculosis notification rates by sex, 1995-2007



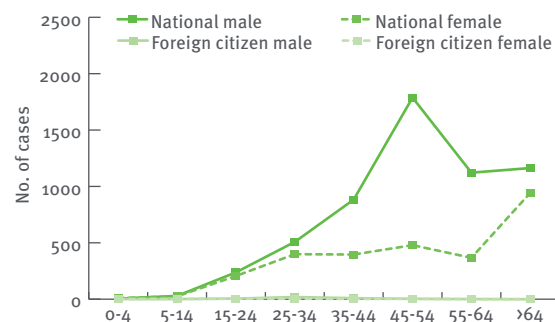
## Tuberculosis notification rates by age group, 1995-2007



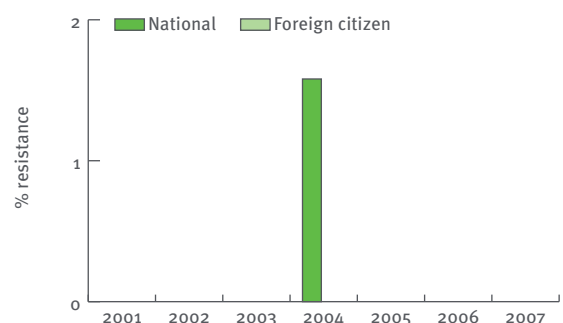
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

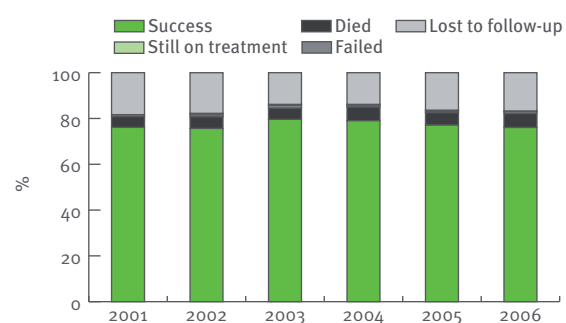


## Combined multidrug resistance, by origin, 2001-2007\*



\* No data by origin, except in 2004 survey

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Portugal

## Tuberculosis case notifications, 2007

Total number of cases	3127
Notification rate per 100 000	32.4
Sex ratio (M:F)	2.1
Median age group, nationals	35-44 years
Median age group, non-nationals	35-44 years
Foreign born	424 (13.6%)
New (never treated)	3127 (100.0%)
Culture positive	1986 (63.5%)
Pulmonary	2334 (74.6%)
of which sputum smear positive	1308 (56.0%)
HIV-positive TB cases	456 (14.6%)
TB deaths per 100 000 (2006)	0.21

## Drug resistance surveillance, 2007

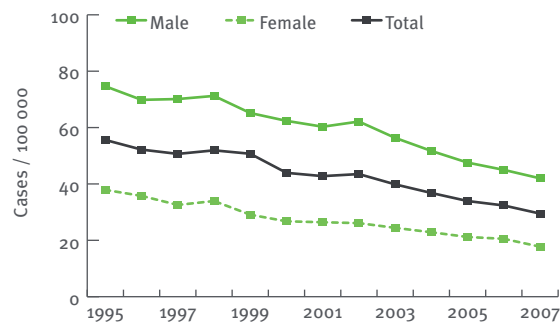
Geographical coverage	National*
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	1662
Cases resistant to isoniazid	110 (6.6%)
Cases resistant to rifampicin	38 (2.3%)
MDR cases	34 (2.0%)
Cases resistant to ethambutol	23 (1.4%)
Cases resistant to streptomycin	131 (7.9%)

\* Data representativeness unknown

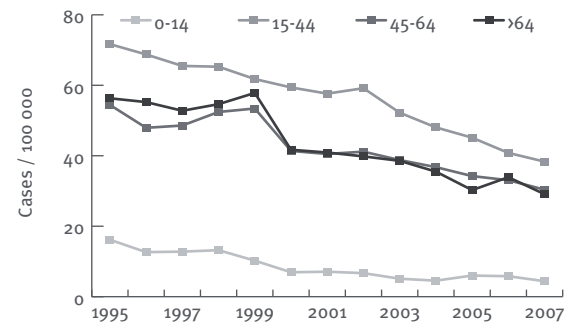
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	2048
Success	1766 (86%)
Died	107 (5%)
Failed	3 (0%)
Still on treatment	64 (3%)
Lost to follow-up	108 (5%)

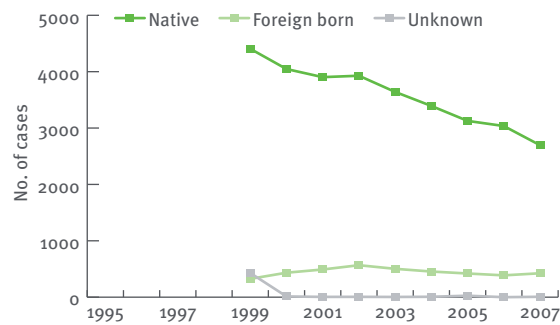
## Tuberculosis notification rates by sex, 1995-2007



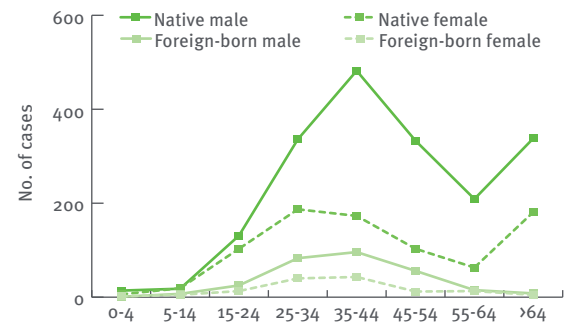
## Tuberculosis notification rates by age group, 1995-2007



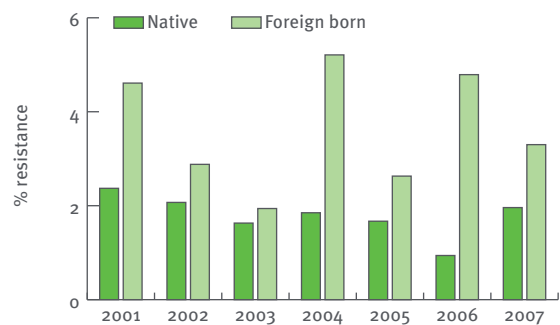
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

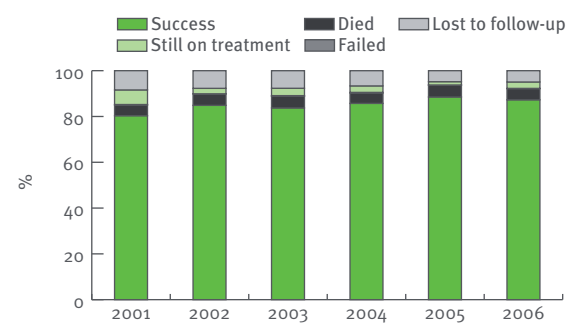


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Republic of Moldova (the)

## Tuberculosis case notifications, 2007

Total number of cases	6367
Notification rate per 100 000	178.0
Sex ratio (M:F)	3.0
Median age group, nationals	35-44 years
Median age group, non-nationals	25-34 years
Foreign citizens	20 (0.3%)
New (never-treated)	4166 (65.4%)
Culture positive	2297 (36.1%)
Pulmonary	5798 (91.1%)
of which sputum smear positive	3028 (52.2%)
HIV-positive TB cases	212 (3.3%)
TB deaths per 100 000	-

## Drug resistance surveillance, 2007

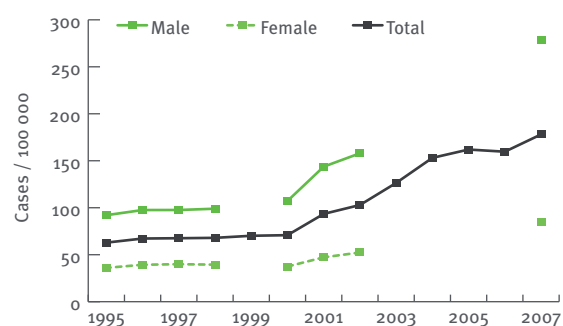
Geographical coverage	National*
International proficiency testing	Yes
Case-linked data reporting	No
Cases with DST results	1495
Cases resistant to isoniazid	679 (45.4%)
Cases resistant to rifampicin	557 (37.3%)
MDR cases	530 (35.5%)
Cases resistant to ethambutol	434 (29.0%)
Cases resistant to streptomycin	707 (47.3%)

\* All DST labs (representativeness unknown)

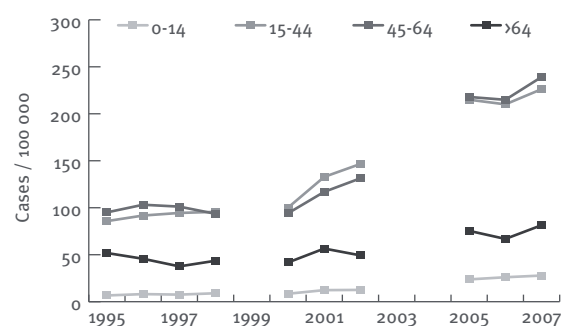
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	2776
Success	1427 (51%)
Died	359 (13%)
Failed	404 (15%)
Still on treatment	75 (3%)
Lost to follow-up	511 (18%)

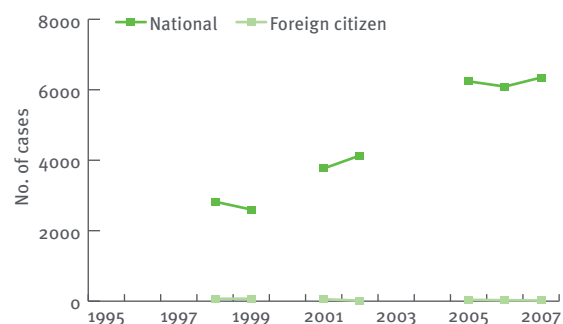
## Tuberculosis notification rates by sex, 1995-2007



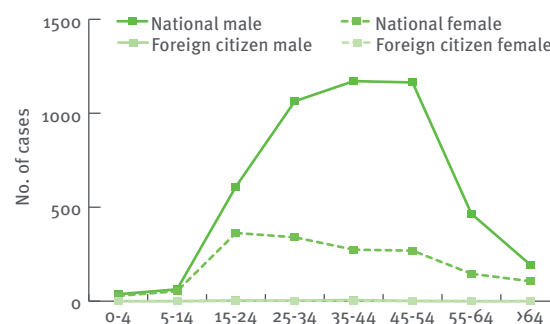
## Tuberculosis notification rates by age group, 1995-2007



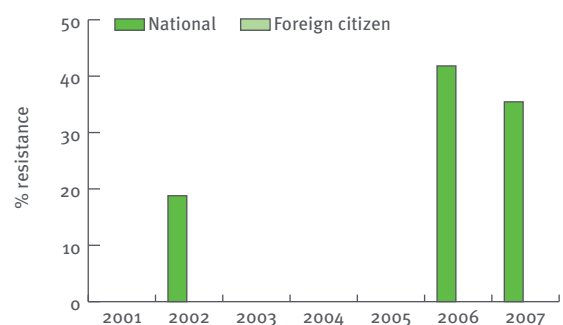
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

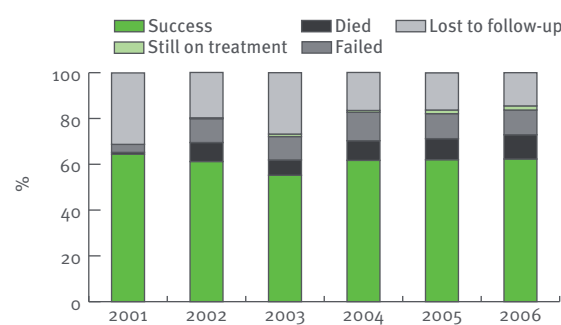


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown; no data in 2001, 2003-2005

## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* Data representativeness unknown 2001-2002

# Romania

## Tuberculosis case notifications, 2007

Total number of cases	25 491
Notification rate per 100 000	118.3
Sex ratio (M:F)	2.2
Median age group, nationals	35-44 years
Median age group, non-nationals	-
Foreign-born	0 (0.0%)
New (never-treated)	19 252 (75.5%)
Culture positive	4 147 (16.3%)
Pulmonary	22 015 (86.4%)
of which sputum smear positive	13 906 (63.2%)
HIV-positive TB cases	187 (0.7%)
TB deaths per 100 000 (2006)	7.89

## Drug resistance surveillance, 2007\*

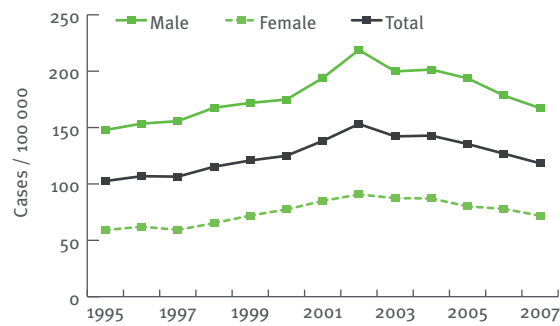
Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Yes
Cases with DST results	551
Cases resistant to isoniazid	392 (70.1%)
Cases resistant to rifampicin	339 (61.5%)
MDR cases	321 (58.3%)
Cases resistant to ethambutol	75 (13.6%)
Cases resistant to streptomycin	117 (21.2%)

\* Incomplete data at time of data collection

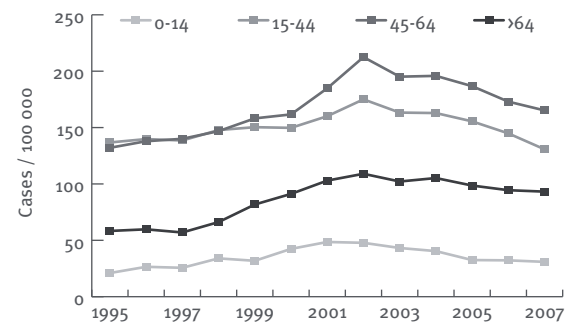
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	17 048
Success	12 933 (76%)
Died	1 051 (6%)
Failed	916 (5%)
Still on treatment	492 (3%)
Lost to follow-up	1 656 (10%)

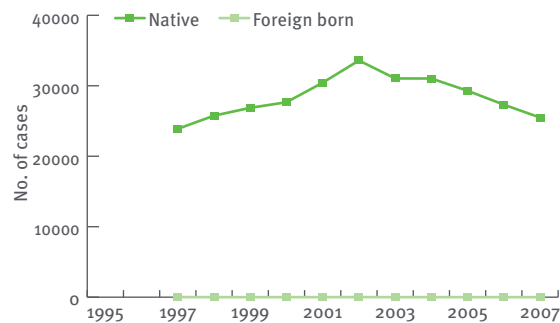
## Tuberculosis notification rates by sex, 1995-2007



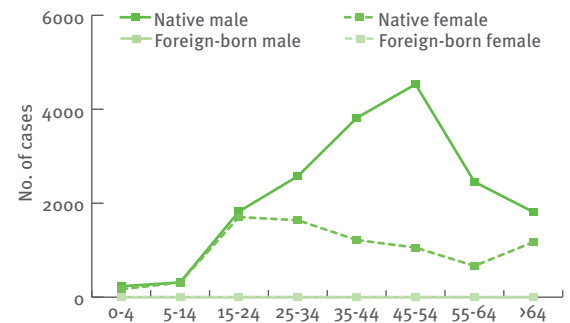
## Tuberculosis notification rates by age group, 1995-2007



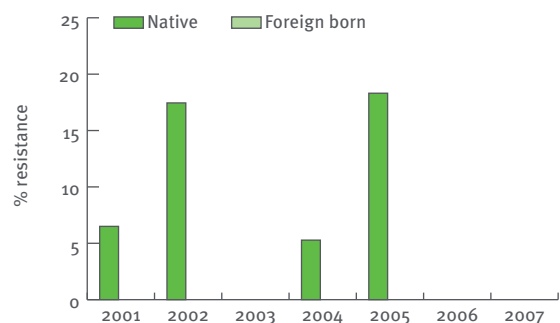
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

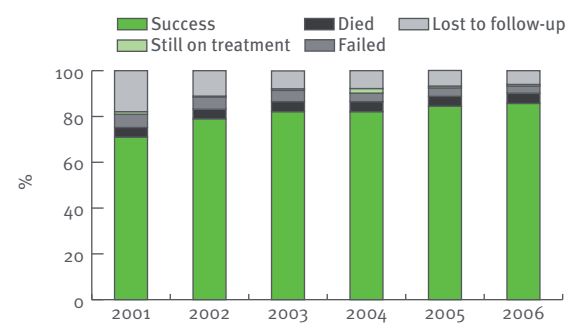


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown (data for 2004 from representative survey in 2003-2004)

## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Russian Federation (the)

## Tuberculosis case notifications, 2007

Total number of cases	214 924
Notification rate per 100 000	151.2
Sex ratio (M:F)	2.4
Median age group	35-44 years
Median age group, non-nationals *	35-44 years
Foreign citizens	2 123 (1.8%)
New (never-treated)	118 367 (55.1%)
Culture positive	94 878 (44.1%)
Pulmonary	202 494 (94.2%)
of which sputum smear positive	79 864 (39.4%)
HIV-positive new TB cases	5 985 (5.1%)
TB deaths per 100 000 (2006)	19.98

## Drug resistance surveillance, 2005-2006\*

Geographical coverage	Mary El	Orel	Tomsk
International proficiency testing	2006	2006	2005
Case-linked data reporting	Yes	Yes	Yes
Cases with DST results	304	317	515
Cases resistant to isoniazid	79 (26%)	64 (20%)	136 (26%)
Cases resistant to rifampicin	38 (13%)	30 (9%)	86 (17%)
MDR cases	38 (13%)	28 (9%)	77 (15%)
Cases resistant to ethambutol	39 (13%)	14 (4%)	33 (6%)
Cases resistant to streptomycin	78 (26%)	76 (24%)	167 (32%)

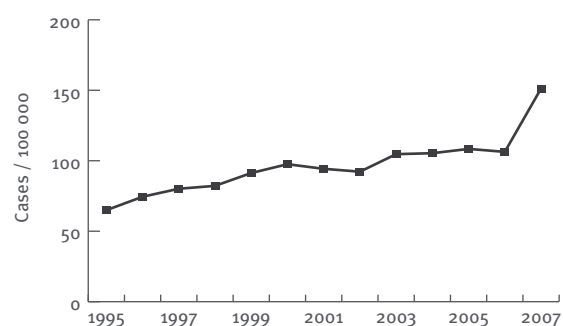
\* New cases only; data representative for the three regions only  
Source: WHO/HTM/TB/2008.394

## Treatment outcome monitoring, 2006

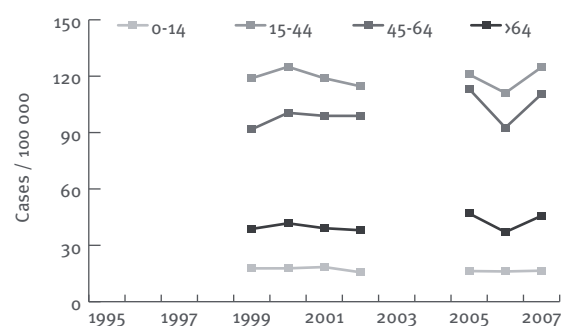
Geographical coverage	DOTS areas*
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	47 854
Success	24 437 (51%)
Died	6 205 (13%)
Failed	9 046 (19%)
Still on treatment	0 (0%)
Lost to follow-up	8 166 (17%)

\* Data representativeness unknown

## Tuberculosis notification rates, 1995-2007

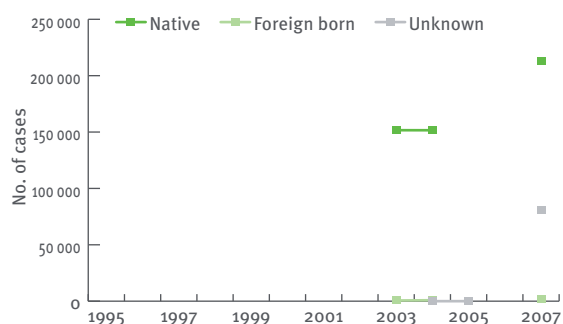


## Tuberculosis notification rates by age group, 1995-2007\*

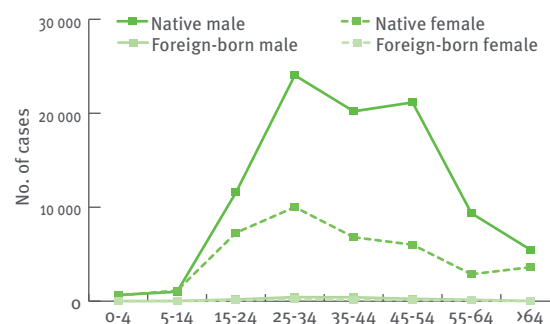


\* New cases only (including also relapses in 2005)

## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007\*

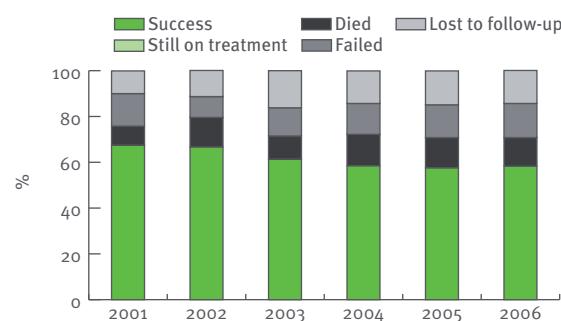


\* New cases only

## Combined multidrug resistance, by origin, 2001-2007

Not available

## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* DOTS areas, data representativeness unknown



# San Marino

**Tuberculosis case notifications, 2007**

Not available

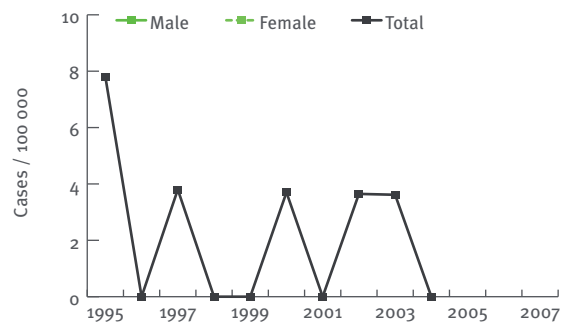
**Drug resistance surveillance, 2007**

Not available

**Treatment outcome monitoring, 2006**

Not available

**Tuberculosis notification rates by sex, 1995–2007\***



\* No data reported in 2005-2006

**Tuberculosis notification rates by age group, 1995–2007**

Insufficient number of cases for graphic presentation

**Tuberculosis cases by geographical origin, 1995–2007**

Insufficient number of cases for graphic presentation

**Tuberculosis cases by origin, age group and sex, 2007**

Not available

**Combined multidrug resistance, by origin, 2001–2007**

No MDR cases reported

**Outcomes, new pulmonary culture-positive cases, 2001–2006**

Insufficient number of cases for graphic presentation

# Serbia

## Tuberculosis case notifications, 2007

Total number of cases*	2051	
Notification rate per 100 000	27.8	
Sex ratio (M:F)	1.5	
Median age group, nationals	45-54 years	
Median age group, non-nationals	55-64 years	
Foreign citizens	13	(0.6%)
New (not previously diagnosed)	1767	(86.2%)
Culture positive	1397	(68.1%)
Pulmonary	1809	(88.2%)
of which sputum smear positive	1061	(58.7%)
HIV-positive TB cases	9	(0.4%)
TB deaths per 100 000 (2006)	2.74	

\* Excluding the UN Administered Province of Kosovo (930 cases in 2007)

## Drug resistance surveillance, 2007

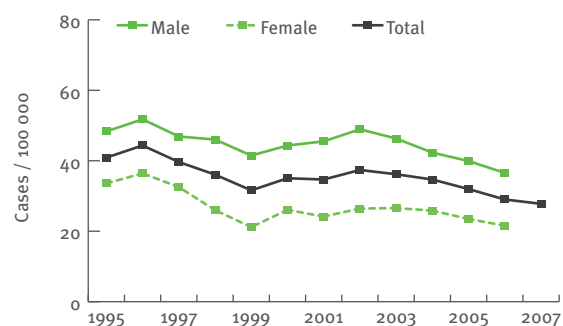
Geographical coverage	Partial*	
International proficiency testing	Yes	
Case-linked data reporting	Case-linked	
Cases with DST results	1292	
Cases resistant to isoniazid	48	(3.7%)
Cases resistant to rifampicin	34	(2.6%)
MDR cases	24	(1.9%)
Cases resistant to ethambutol	18	(1.4%)
Cases resistant to streptomycin	64	(5.0%)

\* Data representativeness unknown

## Treatment outcome monitoring, 2006

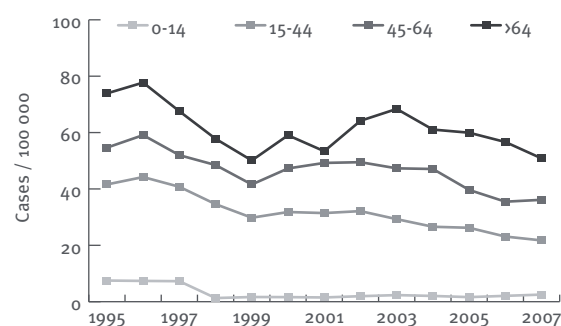
Geographical coverage	National	
Outcome cohort	All pulmonary culture positive	
Case-linked data reporting	Yes	
Included in TOM cohort	1002	
Success	805	(80%)
Died	75	(7%)
Failed	19	(2%)
Still on treatment	2	(0%)
Lost to follow-up	101	(10%)

## Tuberculosis notification rates by sex, 1995-2007\*



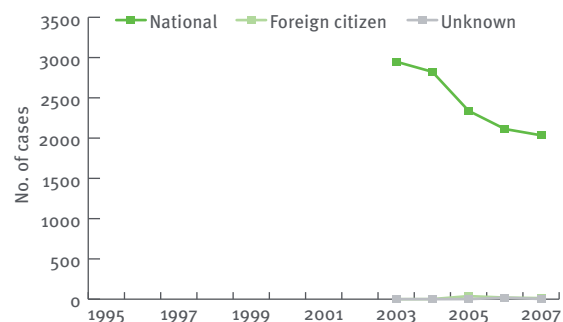
\* Established in 2006 following the split of Serbia & Montenegro; notifications for the UN Administered Province of Kosovo included until 1997 and for Montenegro until 2004

## Tuberculosis notification rates by age group, 1995-2007\*



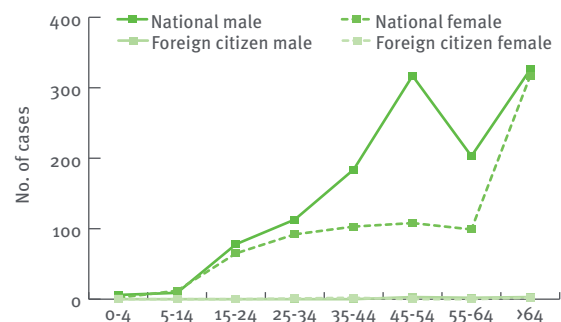
\* Established in 2006 following the split of Serbia & Montenegro; notifications for the UN Administered Province of Kosovo included until 1997 and for Montenegro until 2004

## Tuberculosis cases by geographical origin, 1995-2007\*

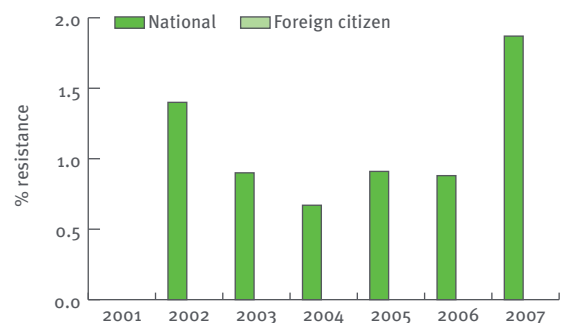


\* Established in 2006 following the split of Serbia & Montenegro; notifications for the UN Administered Province of Kosovo included until 1997 and for Montenegro until 2004

## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown; no data for 2001; origin unknown in 2002

## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Belgrade region 2001-2004; nationwide pulmonary culture-positive cases from 2005

# Slovakia

## Tuberculosis case notifications, 2007

Total number of cases	682
Notification rate per 100 000	12.6
Sex ratio (M:F)	1.8
Median age group, nationals	45-54 years
Median age group, non-nationals	25-34 years
Foreign born	12 (1.8%)
New (never-treated)	585 (85.8%)
Culture positive	396 (58.1%)
Pulmonary	548 (80.4%)
of which sputum smear positive	196 (35.8%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2005)	0.87

## Drug resistance surveillance, 2007

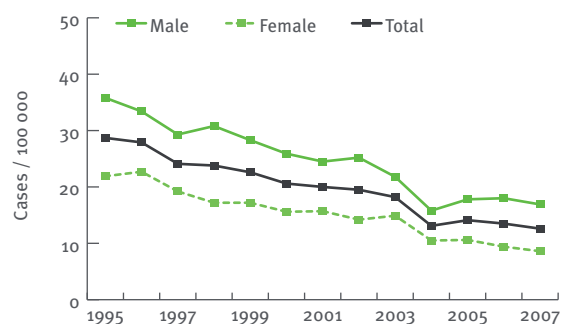
Geographical coverage	National*
International proficiency testing	Yes
Case-linked data reporting	Case-linked
Cases with DST results	386
Cases resistant to isoniazid	16 (4.0%)
Cases resistant to rifampicin	8 (2.0%)
MDR cases	7 (1.8%)
Cases resistant to ethambutol	3 (0.8%)
Cases resistant to streptomycin	3 (0.8%)

\* Data representativeness unknown

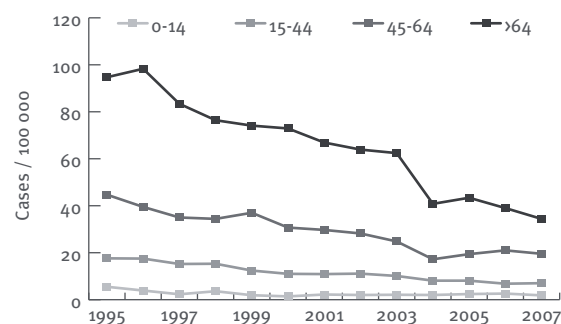
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	362
Success	289 (80%)
Died	48 (13%)
Failed	10 (3%)
Still on treatment	7 (2%)
Lost to follow-up	8 (2%)

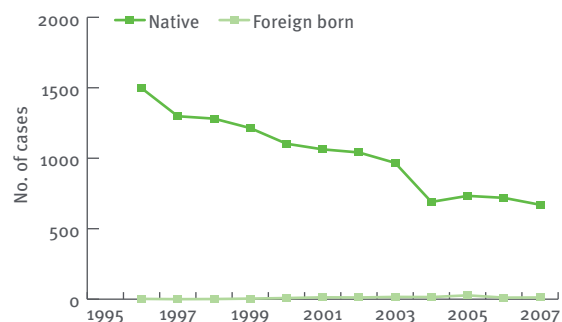
## Tuberculosis notification rates by sex, 1995-2007



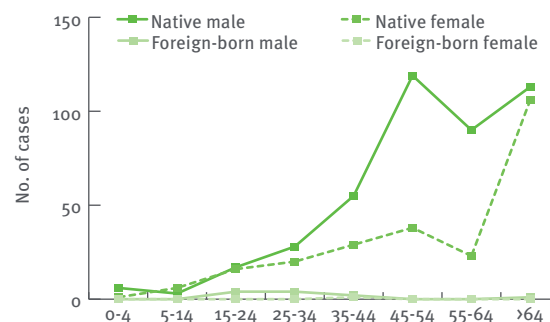
## Tuberculosis notification rates by age group, 1995-2007



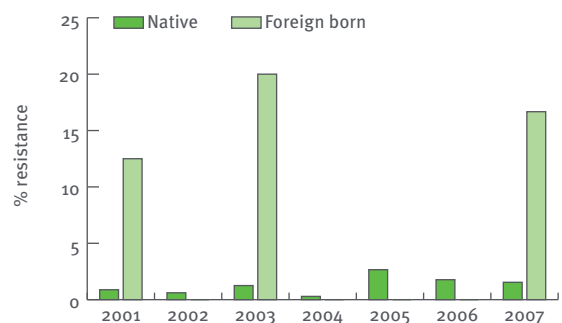
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

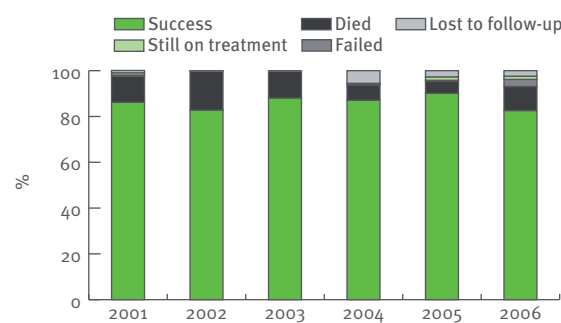


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown in 2003 & 2005

## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Data representativeness unknown in 2002

# Slovenia

## Tuberculosis case notifications, 2007

Total number of cases	218
Notification rate per 100 000	10.8
Sex ratio (M:F)	1.5
Median age group, nationals	55-64 years
Median age group, non-nationals	45-54 years
Foreign born	38 (17.4%)
New (never-treated)	202 (92.7%)
Culture positive	189 (86.7%)
Pulmonary	178 (81.7%)
of which sputum smear positive	96 (53.9%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2006)	0.9

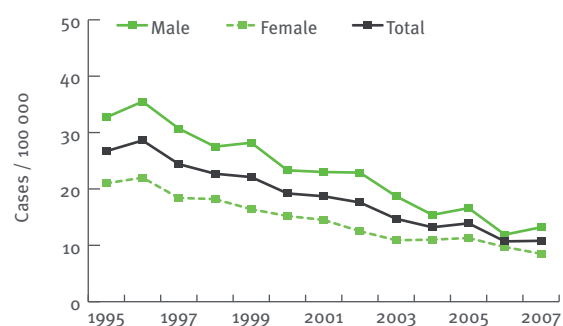
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes (2006)
Case-linked data reporting	Case-linked
Cases with DST results	189
Cases resistant to isoniazid	3 (1.6%)
Cases resistant to rifampicin	0 (0.0%)
MDR cases	0 (0.0%)
Cases resistant to ethambutol	0 (0.0%)
Cases resistant to streptomycin	8 (4.2%)

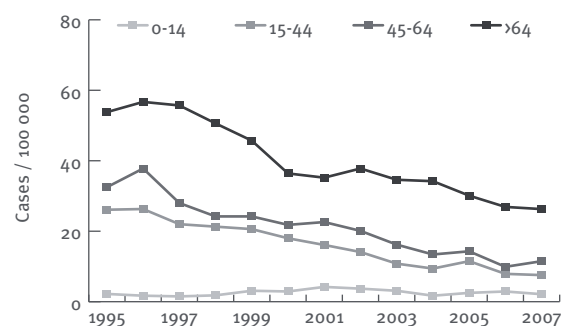
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	152
Success	129 (85%)
Died	16 (11%)
Failed	1 (1%)
Still on treatment	0 (0%)
Lost to follow-up	6 (4%)

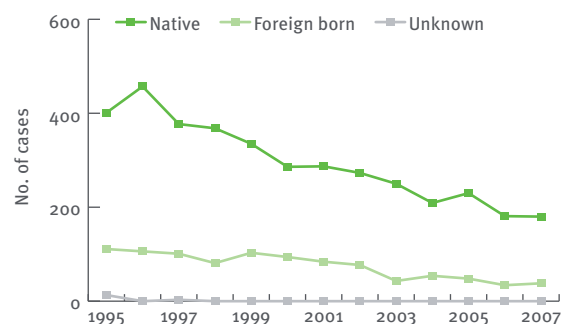
## Tuberculosis notification rates by sex, 1995–2007



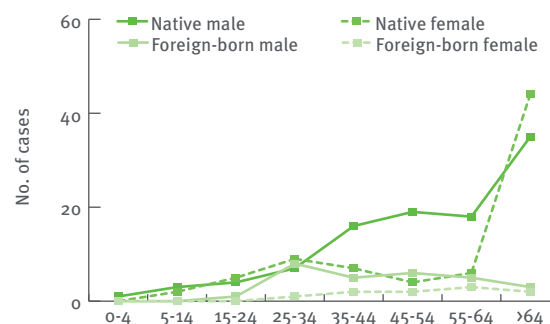
## Tuberculosis notification rates by age group, 1995–2007



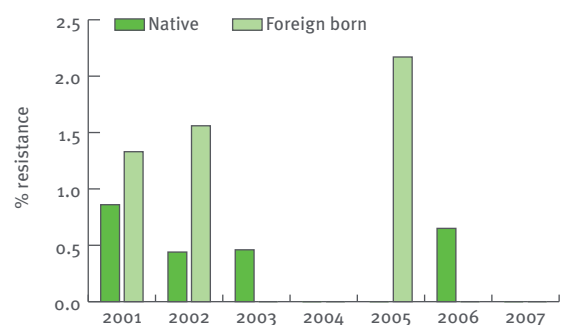
## Tuberculosis cases by geographical origin, 1995–2007



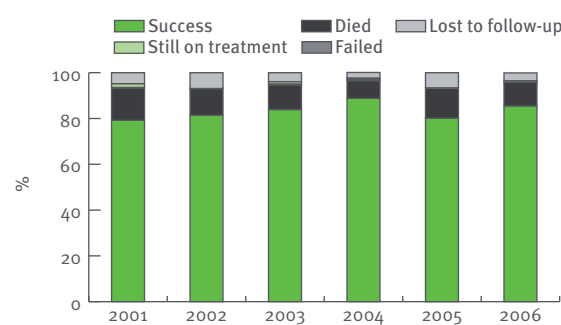
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006



# Spain

## Tuberculosis case notifications, 2007

Total number of cases	7767
Notification rate per 100 000	17.3
Sex ratio (M:F)	1.7
Median age group, nationals	35-44 years
Median age group, non-nationals	25-34 years
Foreign born*	2029 (26.1%)
New (never-treated)	6154 (79.2%)
Culture positive	3949 (50.8%)
Pulmonary	6266 (80.7%)
of which sputum smear positive	2482 (39.6%)
HIV-positive TB cases (2006)	446 (5.7%)
TB deaths per 100 000 (2005)	1.09

\* 24% of cases missing information on origin

## Drug resistance surveillance, 2007

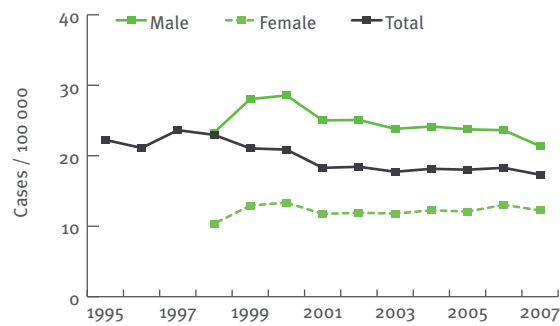
Geographical coverage	Partial*
International proficiency testing	Yes
Case-linked data reporting	Aggregated
Cases with DST results	1375
Cases resistant to isoniazid	107 (7.8%)
Cases resistant to rifampicin	65 (4.7%)
MDR cases	59 (4.3%)
Cases resistant to ethambutol	26 (1.9%)
Cases resistant to streptomycin	57 (4.1%)

\* Data from NRL (representativeness unknown)

## Treatment outcome monitoring, 2006

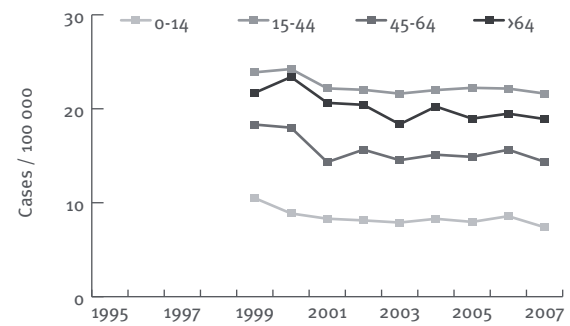
Not available

## Tuberculosis notification rates by sex, 1995–2007\*



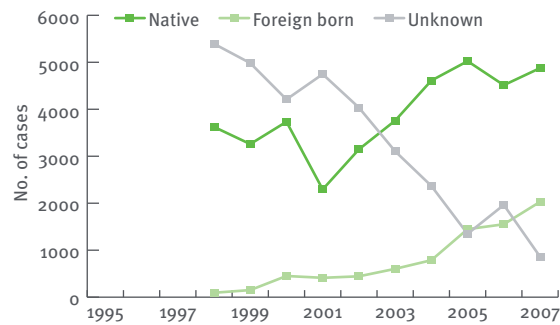
\* 1995-96 new respiratory cases only; 1997-2003 new and recurrent respiratory and meningial cases

## Tuberculosis notification rates by age group, 1995–2007\*



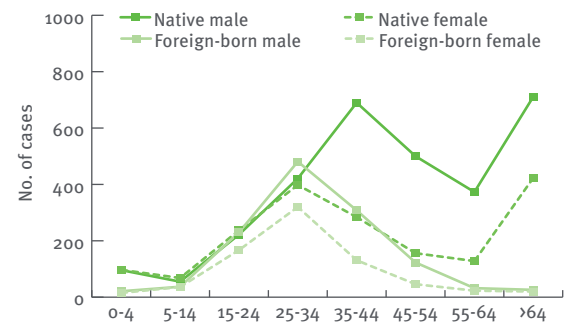
\* 1995-96 new respiratory cases only; 1997-2003 new and recurrent respiratory and meningial cases

## Tuberculosis cases by geographical origin, 1995–2007\*

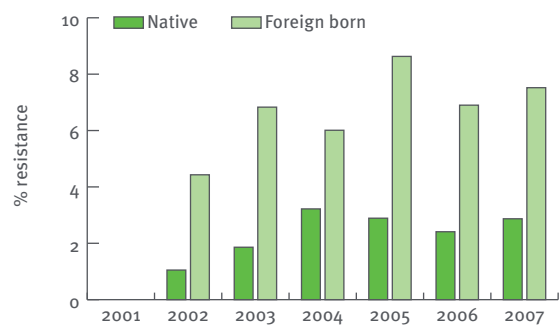


\* 1995-96 new respiratory cases only; 1997-2003 new and recurrent respiratory and meningial cases

## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007\*



\* Data representativeness unknown; no data by origin in 2001

## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available

# Sweden

## Tuberculosis case notifications, 2007

Total number of cases	491
Notification rate per 100 000	5.4
Sex ratio (M:F)	1.0
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born	381 (77.6%)
New (never-treated)	459 (93.5%)
Culture positive	365 (74.3%)
Pulmonary	310 (63.1%)
of which sputum smear positive	102 (32.9%)
HIV-positive TB cases	-
TB deaths per 100 000 (2005)	0.64

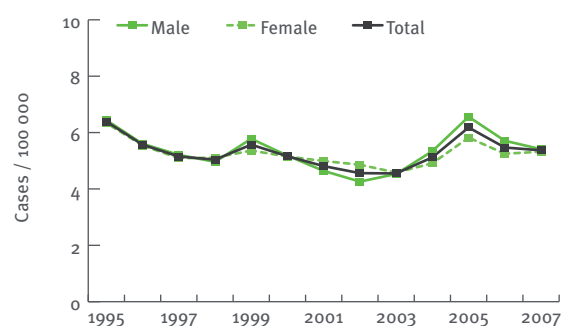
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes (2006)
Case-linked data reporting	Case-linked
Cases with DST results	365
Cases resistant to isoniazid	46 (12.6%)
Cases resistant to rifampicin	15 (4.1%)
MDR cases	15 (4.1%)
Cases resistant to ethambutol	6 (1.6%)
Cases resistant to streptomycin	0 (0.0%)

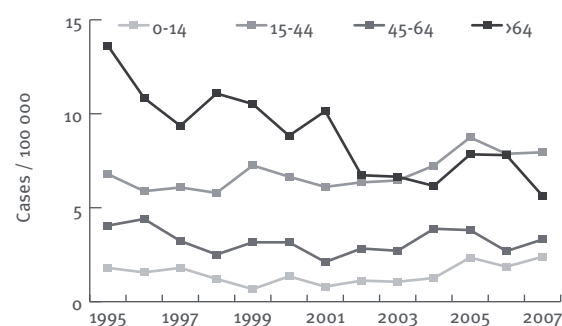
## Treatment outcome monitoring, 2006

Not available

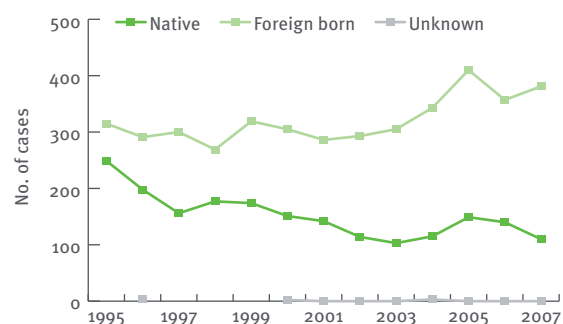
## Tuberculosis notification rates by sex, 1995-2007



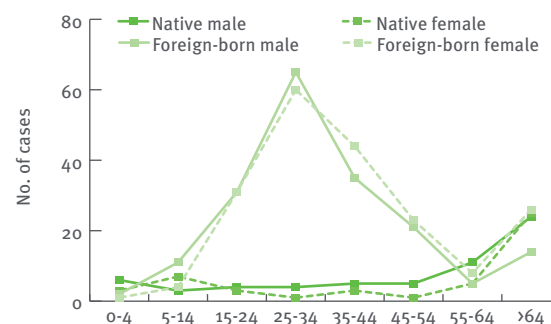
## Tuberculosis notification rates by age group, 1995-2007



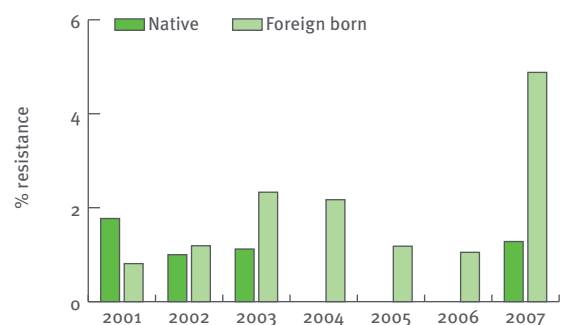
## Tuberculosis cases by geographical origin, 1995-2007



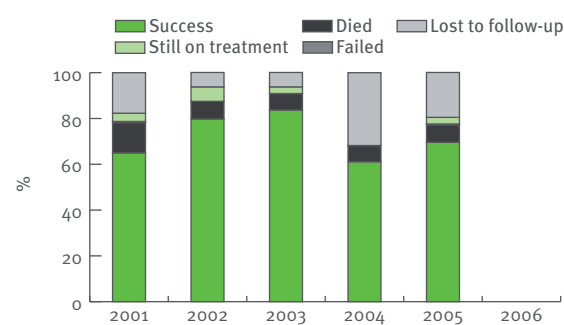
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary culture-positive cases, 2001-2006



# Switzerland

## Tuberculosis case notifications, 2007

Total number of cases	478
Notification rate per 100 000	6.3
Sex ratio (M:F)	1.1
Median age group, nationals	55-64 years
Median age group, non-nationals	25-34 years
Foreign born*	263 (55.0%)
New (never-treated)*	318 (66.5%)
Culture positive	393 (82.2%)
Pulmonary	420 (87.9%)
of which sputum smear positive	111 (26.4%)
HIV-positive TB cases	17 (3.6%)
TB deaths per 100 000 (2005)	0.39

\* >20% of cases missing data on previous history and origin

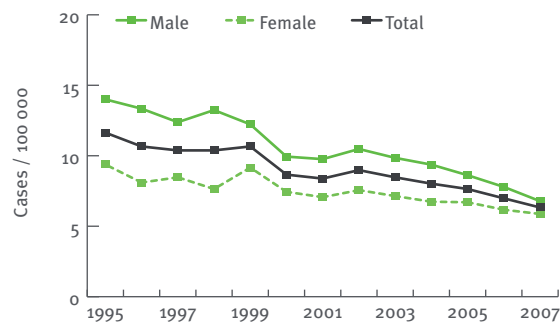
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Aggregated
Cases with DST results	389
Cases resistant to isoniazid	28 (7.2%)
Cases resistant to rifampicin	11 (2.8%)
MDR cases	9 (2.3%)
Cases resistant to ethambutol	9 (2.3%)
Cases resistant to streptomycin	10 (2.6%)

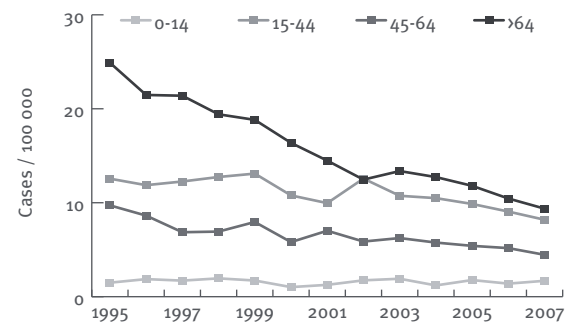
## Treatment outcome monitoring, 2006

Not available

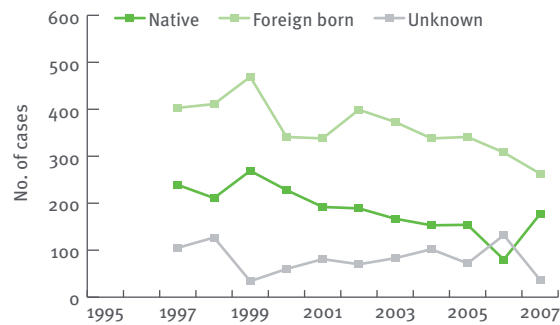
## Tuberculosis notification rates by sex, 1995–2007



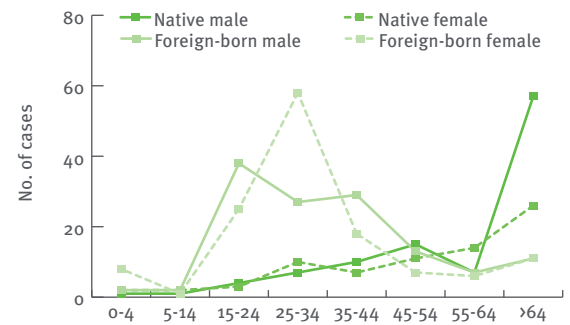
## Tuberculosis notification rates by age group, 1995–2007



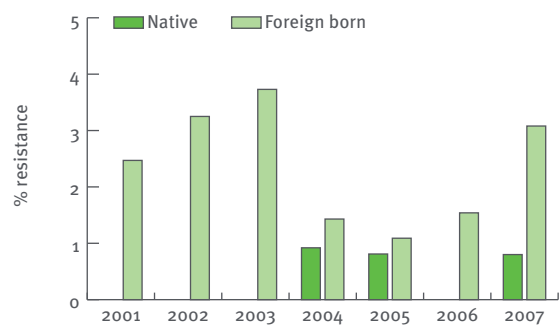
## Tuberculosis cases by geographical origin, 1995–2007



## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007



## Outcomes, new pulmonary culture-positive cases, 2001–2006

Not available

# Tajikistan

## Tuberculosis case notifications, 2007

Total number of cases	8081
Notification rate per 100 000	119.2
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)	6078 (75%)
Culture positive	4231 (52%)
Pulmonary	6348 (79%)
of which sputum smear positive	3332 (52%)
HIV-positive TB cases**	371 (5.0%)
TB deaths per 100 000 (2005)	9.44

\* For new cases only  
\*\* Selected cases (Dushanbe city)

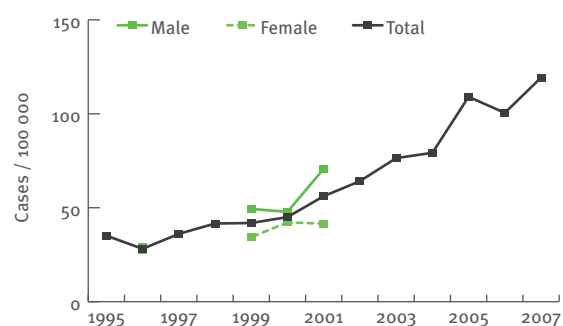
## Drug resistance surveillance, 2007

Not available

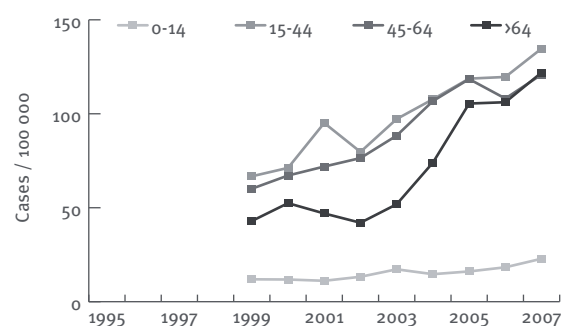
## Treatment outcome monitoring, 2006

Geographical coverage	National	
Outcome cohort	All pulmonary smear positive	
Case-linked data reporting	No	
Included in TOM cohort	3187	
Success	2354	(74%)
Died	195	(6%)
Failed	235	(7%)
Still on treatment	0	(0%)
Lost to follow-up	224	(7%)

## Tuberculosis notification rates by sex, 1995-2007



## Tuberculosis notification rates by age group, 1995-2007\*

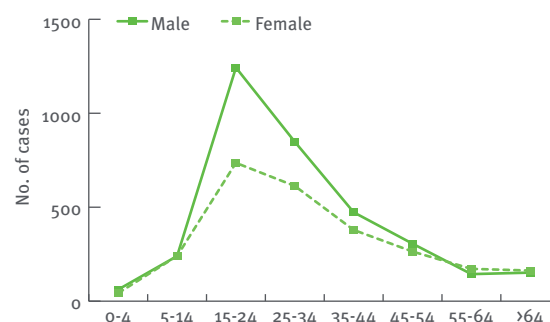


\* New cases only in 2004-2006

## Tuberculosis cases by geographical origin, 1995-2007

Foreign citizens not reported

## Tuberculosis cases by origin, age group and sex, 2007\*

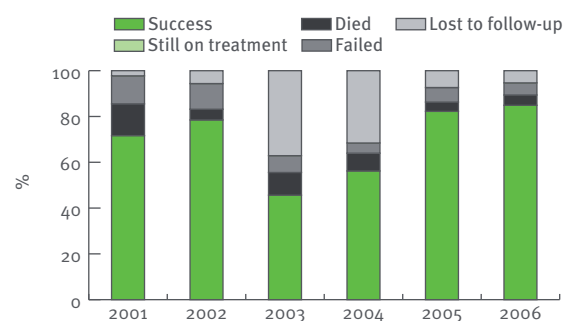


\* New cases only

## Combined multidrug resistance, by origin, 2001-2007

Not available

## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* Data representativeness unknown in 2002-2003



# The former Yugoslav Republic of Macedonia

## Tuberculosis case notifications, 2007

Total number of cases	563
Notification rate per 100 000	27.5
Sex ratio (M:F)	2.4
Median age group, nationals	35-44 years
Median age group, non-nationals	55-64 years
Foreign born	27 (4.8%)
New (never-treated)	494 (87.7%)
Culture positive	225 (40.0%)
Pulmonary	483 (85.8%)
of which sputum smear positive	216 (44.7%)
HIV-positive TB cases	1 (0.2%)
TB deaths per 100 000 (2006)	1.52

## Drug resistance surveillance, 2007

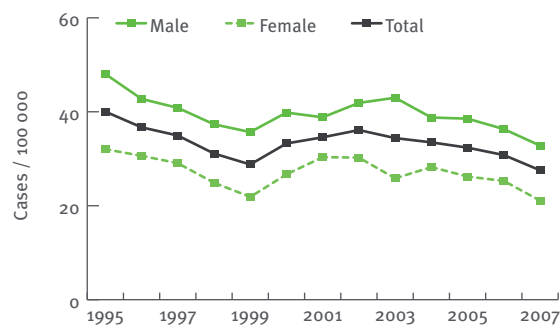
Geographical coverage	National*
International proficiency testing	No
Case-linked data reporting	Yes
Cases with DST results	193
Cases resistant to isoniazid	17 (8.8%)
Cases resistant to rifampicin	9 (4.7%)
MDR cases	9 (4.7%)
Cases resistant to ethambutol	14 (7.3%)
Cases resistant to streptomycin	19 (9.8%)

\* Data representativeness unknown

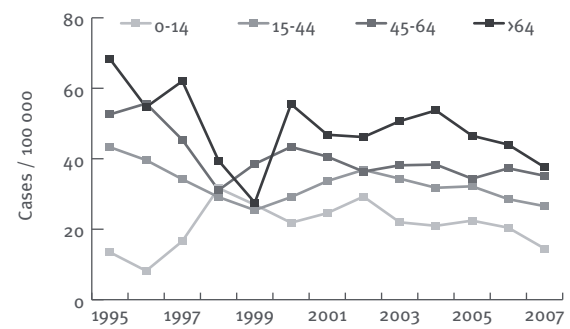
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	Yes
Included in TOM cohort	215
Success	180 (84%)
Died	14 (7%)
Failed	3 (1%)
Still on treatment	2 (1%)
Lost to follow-up	16 (7%)

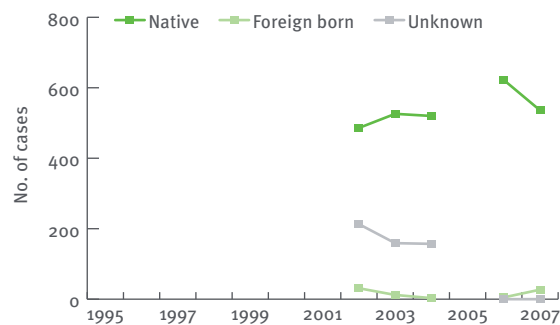
## Tuberculosis notification rates by sex, 1995–2007



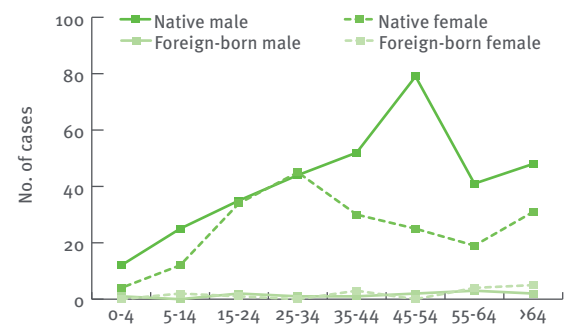
## Tuberculosis notification rates by age group, 1995–2007



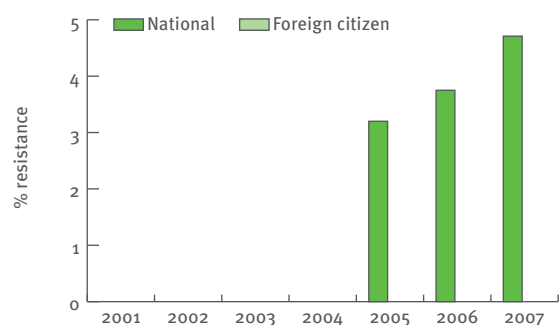
## Tuberculosis cases by geographical origin, 1995–2007



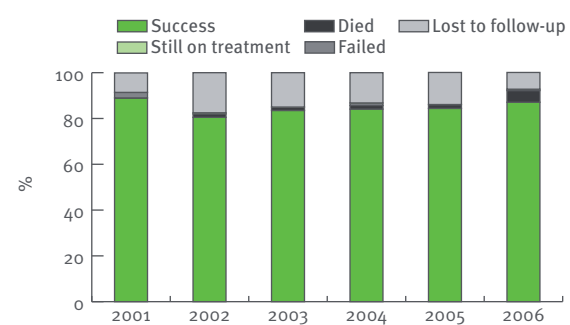
## Tuberculosis cases by origin, age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007\*



## Outcomes, new pulmonary smear-positive cases, 2001–2006



\* Data representativeness unknown; no data by geographical origin 2001-2004; by citizenship in 2005, by birth from 2006

# Turkey

## Tuberculosis case notifications, 2007

Total number of cases	19 694
Notification rate per 100 000	28.1
Sex ratio (M:F)	1.7
Median age group, all cases	35-44 years
Median age group, non-nationals	25-34 years
Foreign citizens	139 (0.7%)
New (never-treated)	17 781 (90.3%)
Culture positive	6 988 (35.5%)
Pulmonary	13 690 (69.5%)
of which sputum smear positive	8 797 (64.3%)
HIV-positive TB cases	-
TB deaths per 100 000	-

## Drug resistance surveillance, 2007\*

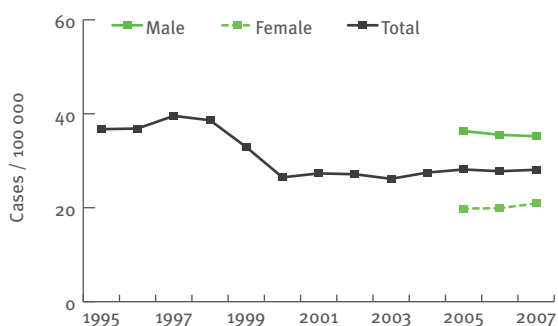
Geographical coverage	National
International proficiency testing	Yes
Case-linked data reporting	Aggregated
Cases with DST results	4 908
Cases resistant to isoniazid	706 (14.4%)
Cases resistant to rifampicin	347 (7.1%)
MDR cases	240 (4.9%)
Cases resistant to ethambutol	179 (3.6%)
Cases resistant to streptomycin	403 (8.2%)

\* Due to late reporting DRS data are not published anywhere else in this report

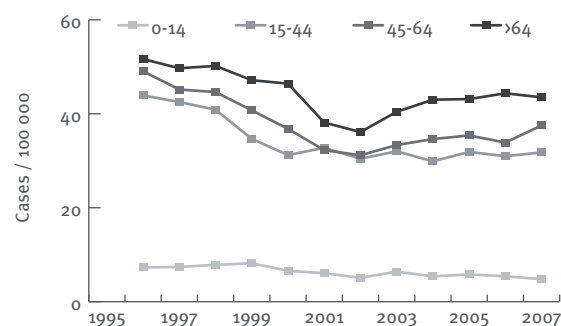
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	yes
Included in TOM cohort	9 127
Success	8 060 (88%)
Died	272 (3%)
Failed	81 (1%)
Still on treatment	252 (3%)
Lost to follow-up	462 (5%)

## Tuberculosis notification rates, 1995-2007

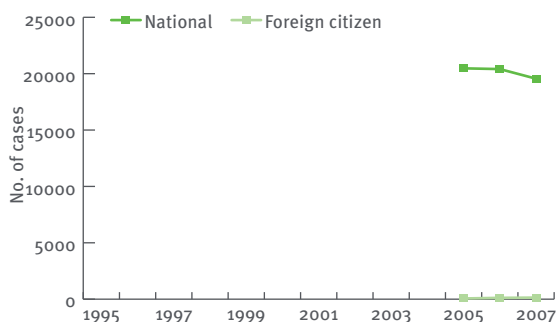


## Tuberculosis notification rates by age group, 1995-2007\*

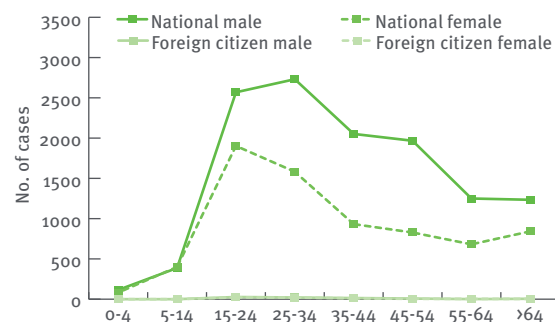


\* New cases only

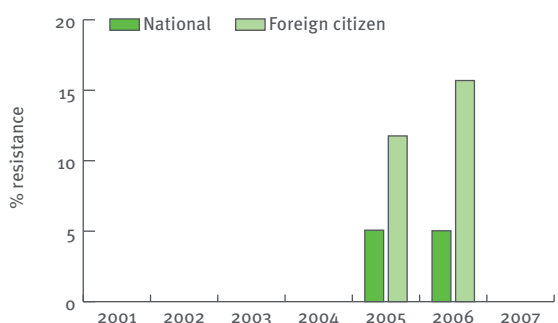
## Tuberculosis cases by geographical origin, 1995-2007



## Tuberculosis cases by origin, age group and sex, 2007

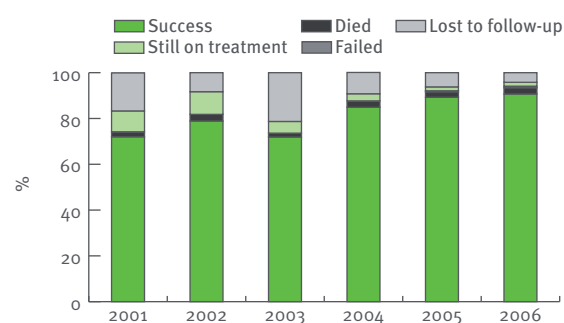


## Combined multidrug resistance, by origin, 2001-2007\*



\* Data representativeness unknown; no data for 2001-2004

## Outcomes, new pulmonary smear- and/or culture-positive cases, 2001-2006\*



\* Data representativeness unknown in 2002; smear cohort in 2005

# Turkmenistan

## Tuberculosis case notifications, 2007

Total number of cases	3698
Notification rate per 100 000	74.0
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)	3347 (90.5%)
Culture positive	3698 (100.0%)
Pulmonary	3013 (81.5%)
of which sputum smear positive	1637 (54.3%)
HIV-positive TB cases	-
TB deaths per 100 000	-

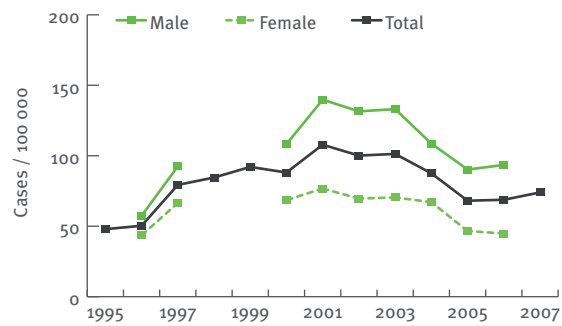
## Drug resistance surveillance, 2007

Not available

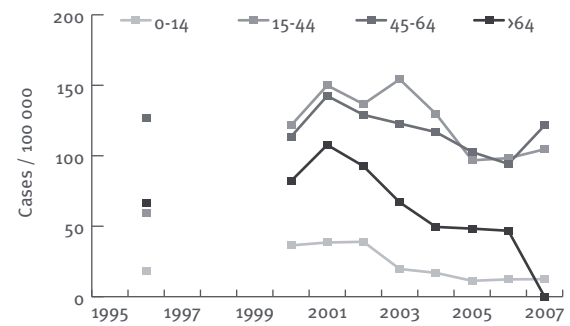
## Treatment outcome monitoring, 2006

Geographical coverage	National
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	1659
Success	1119 (67%)
Died	88 (5%)
Failed	64 (4%)
Still on treatment	0 (0%)
Lost to follow-up	63 (4%)

## Tuberculosis notification rates by sex, 1995-2007



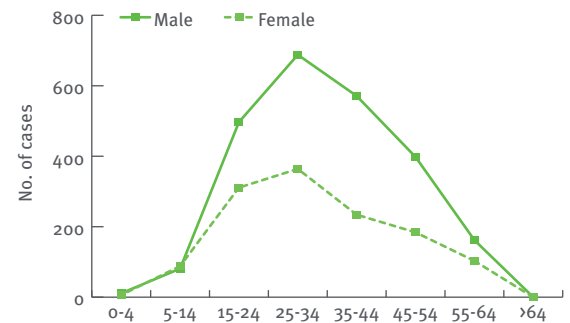
## Tuberculosis notification rates by age group, 1995-2007



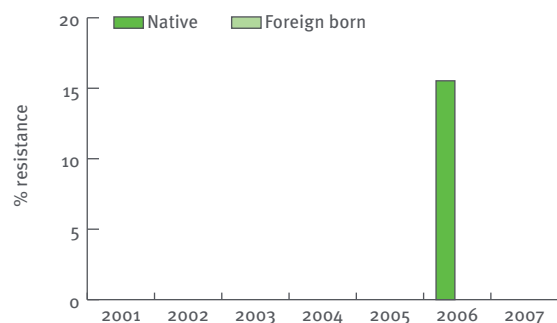
## Tuberculosis cases by geographical origin, 1995-2007

Foreign-born cases not reported

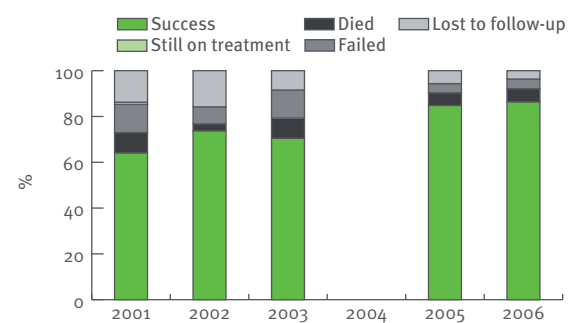
## Tuberculosis cases by age group and sex, 2007



## Combined multidrug resistance, by origin, 2001-2007



## Outcomes, new pulmonary smear-positive cases, 2001-2006\*



\* Data representativeness unknown (re-treated cases in Ashgabat city; no data by geographical origin before 2006)

\* No data in 2004

# Ukraine

## Tuberculosis case notifications, 2007

Total number of cases	40 643
Notification rate per 100 000	87.4
Sex ratio (M:F)*	-
Median age group, nationals*	-
Median age group, non-nationals	-
Foreign citizens	0 (0.0%)
New (never-treated)	34 891 (85.8%)
Culture positive	524 (1.3%)
Pulmonary	37 035 (91.1%)
of which sputum smear positive	13 654 (36.9%)
HIV-positive TB cases*	0 (0.0%)
TB deaths per 100 000 (2006)	22.31

\* For new cases only

## Drug resistance surveillance, 2007

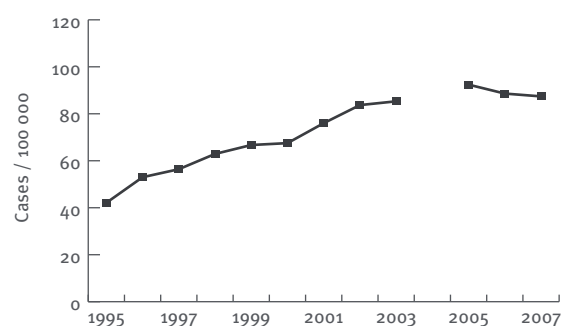
Not available

## Treatment outcome monitoring, 2006

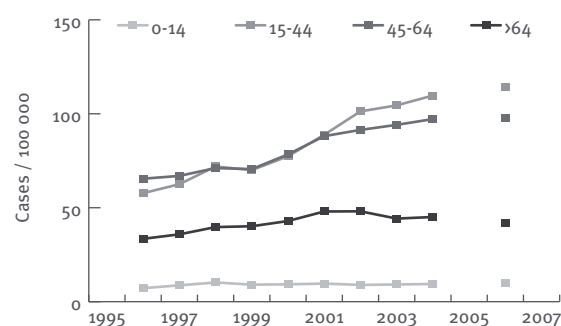
Geographical coverage	DOTS areas*	
Outcome cohort	All pulmonary smear positive	
Case-linked data reporting	No	
Included in TOM cohort	15 177	
Success	8 198	(54%)
Died	1 925	(13%)
Failed	2 266	(15%)
Still on treatment	0	(0%)
Lost to follow-up	2 788	(18%)

\* Data representativeness unknown

## Tuberculosis notification rates, 1995–2007



## Tuberculosis notification rates by age group, 1995–2007\*

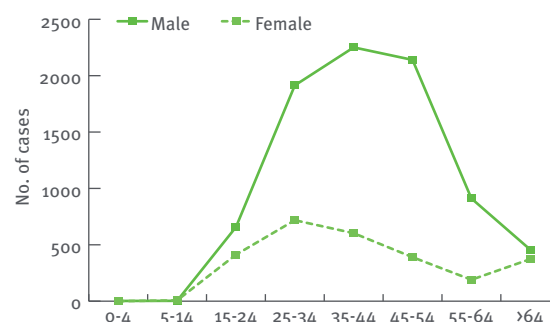


\* New cases only

## Tuberculosis cases by geographical origin, 1995–2007

Foreign citizen cases not reported

## Tuberculosis cases by origin, age group and sex, 2007\*

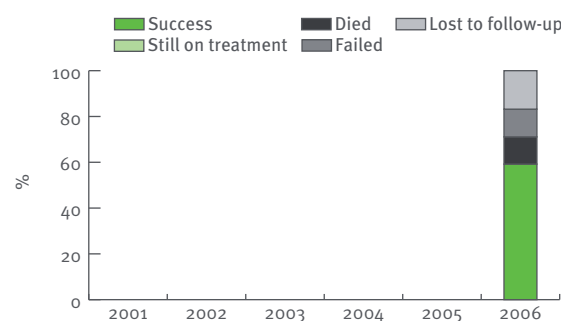


\* Only smear-positive pulmonary cases

## Combined multidrug resistance, by origin, 2001–2007

Not available

## Outcomes, new pulmonary smear-positive cases, 2001–2006



# United Kingdom

## Tuberculosis case notifications, 2007

Total number of cases	8417
Notification rate per 100 000	13.8
Sex ratio (M:F)	1.2
Median age group, all cases	35-44 years
Median age group, non-nationals	25-34 years
Foreign born*	5454 (64.8%)
New (not previously diagnosed)**	6121 (72.7%)
Culture positive	5075 (60.3%)
Pulmonary	4633 (55.0%)
of which sputum smear positive	1763 (38.1%)
HIV-positive TB cases (2003)	-
TB deaths per 100 000 (2006)	0.79

\* 11% of cases missing information on origin

\*\* 19% of cases missing data on previous TB diagnosis

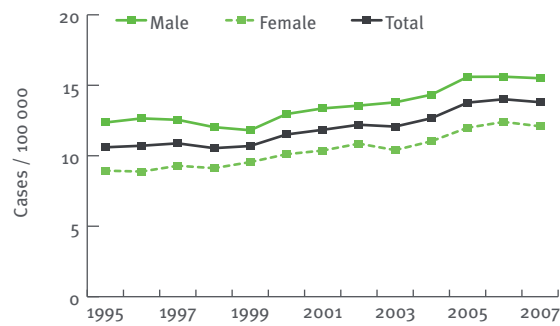
## Drug resistance surveillance, 2007

Geographical coverage	National
International proficiency testing	Yes (2006)
Case-linked data reporting	Case-linked
Cases with DST results	4731
Cases resistant to isoniazid	321 (6.8%)
Cases resistant to rifampicin	68 (1.4%)
MDR cases	55 (1.2%)
Cases resistant to ethambutol	28 (0.6%)
Cases resistant to streptomycin	-

## Treatment outcome monitoring, 2006

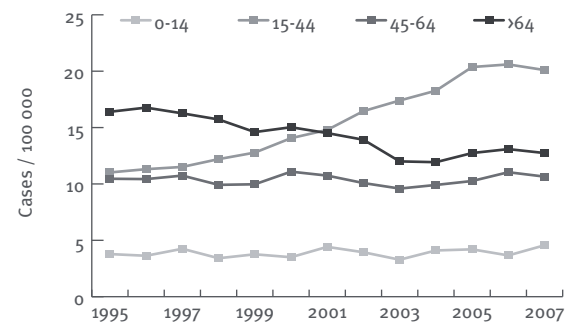
Geographical coverage	National
Outcome cohort	All pulmonary culture positive
Case-linked data reporting	Yes
Included in TOM cohort	3319
Success	2396 (72%)
Died	241 (7%)
Failed	0 (0%)
Still on treatment	191 (6%)
Lost to follow-up	491 (15%)

## Tuberculosis notification rates by sex, 1995-2007\*



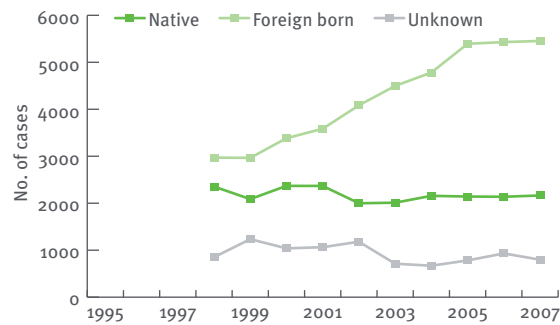
\* Source of surveillance data changed in 1998

## Tuberculosis notification rates by age group, 1995-2007\*



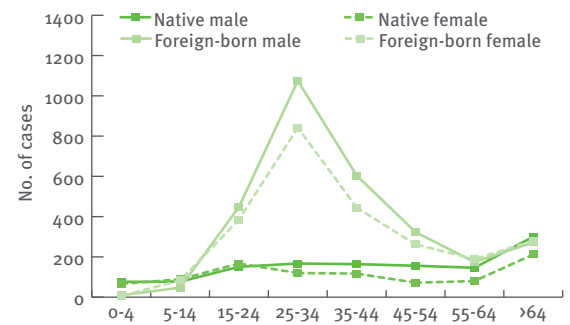
\* Source of surveillance data changed in 1998

## Tuberculosis cases by geographical origin, 1995-2007\*

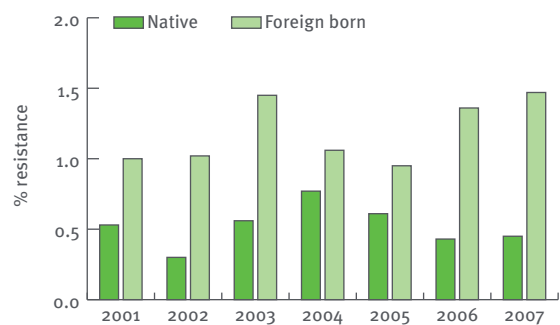


\* Source of surveillance data changed in 1998

## Tuberculosis cases by origin, age group and sex, 2007

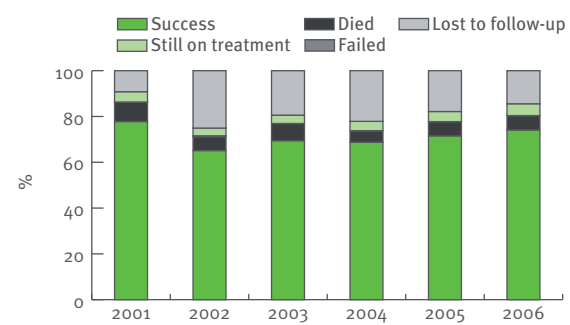


## Combined multidrug resistance, by origin, 2001-2007\*



\* Excluding Scotland in 2001-2002

## Outcomes, new pulmonary culture-positive cases, 2001-2006\*



\* Excluding Scotland in 2001-2002

# Uzbekistan

## Tuberculosis case notifications, 2007

Total number of cases	23 390
Notification rate per 100 000	84.8
Sex ratio (M:F)	1.5
Median age group, all cases	35-44 years
Median age group, non-nationals	35-44 years
Foreign citizens	5 (0.0%)
New (never-treated)	17 911 (76.6%)
Culture positive	-
Pulmonary	17 899 (76.5%)
of which sputum smear positive	7 816 (43.7%)
HIV-positive TB cases	0 (0.0%)
TB deaths per 100 000 (2006)	8.26

## Drug resistance surveillance, 2007

Geographical coverage	Partial*
International proficiency testing	Yes
Case-linked data reporting	Aggregated
Cases with DST results	848
Cases resistant to isoniazid	579 (68.3%)
Cases resistant to rifampicin	500 (59.0%)
MDR cases	484 (57.1%)
Cases resistant to ethambutol	379 (44.7%)
Cases resistant to streptomycin	598 (70.5%)

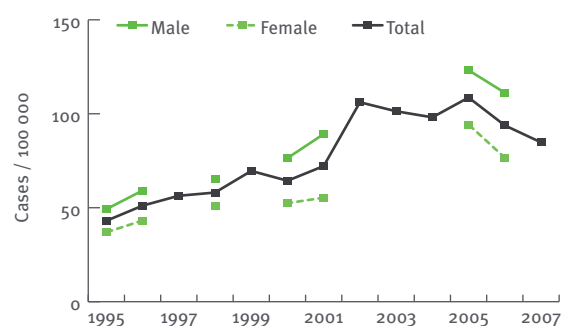
\* Representative sample of sputum smear-positive cases detected in city labs participating in microscopy QA

## Treatment outcome monitoring, 2006

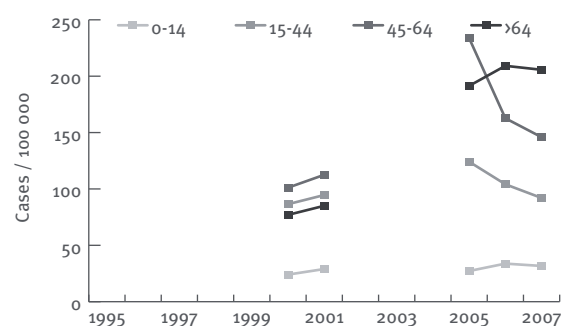
Geographical coverage	DOTS areas*
Outcome cohort	All pulmonary smear positive
Case-linked data reporting	No
Included in TOM cohort	8 563
Success	6 164 (72%)
Died	719 (8%)
Failed	605 (7%)
Still on treatment	0 (0%)
Lost to follow-up	961 (11%)

\* Data representativeness unknown

## Tuberculosis notification rates by sex, 1995–2007



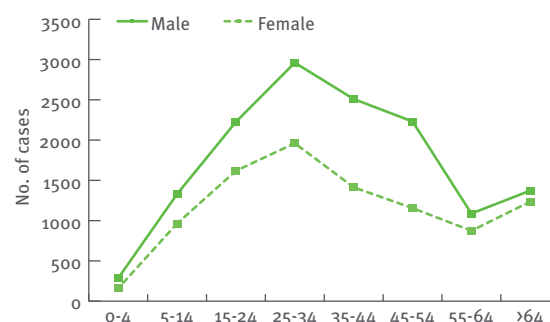
## Tuberculosis notification rates by age group, 1995–2007



## Tuberculosis cases by geographical origin, 1995–2007

Foreign citizens not reported

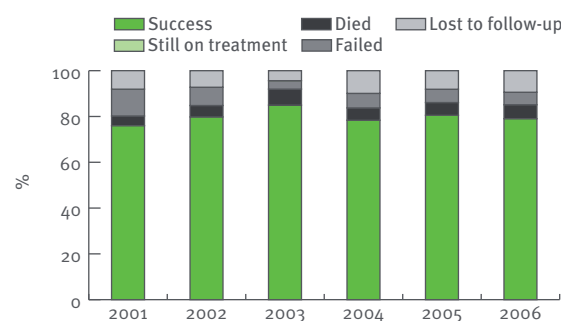
## Tuberculosis cases by age group and sex, 2007



## Combined multidrug resistance, by origin, 2001–2007

Not available

## Outcomes, new pulmonary smear-positive cases, 2001–2006\*



\* Data representativeness unknown

## 6. Technical note





## 6. Technical note

The TB surveillance activities in Europe were launched as a project in 1996 (reporting year 1995) under the name 'EuroTB'. Since then data on TB notification for the previous calendar year have been collected annually. The project was based at the Institut de Veille Sanitaire in France (InVS), France, and financially supported by the European Commission (DG SANCO) – most recently under a three-year project that expired on December 31st 2007.

Since 1st January 2008, ECDC and the WHO Regional Office for Europe jointly coordinate the TB surveillance in Europe. Their aim is to ensure a high quality of TB standardised data covering all 53 countries in the WHO European Region<sup>10</sup>. Designated national surveillance institutions are responsible for providing the data, which is reported to a joint database. The data from the EU and EEA/EFTA countries are validated and processed in the platform of The European Surveillance System (TESSy), while data from the other countries are validated and processed in the Centralized Information System for Infectious Diseases (CISID) platform. The procedures and methods guiding these European TB Surveillance activities are those recommended by European experts nominated by ECDC, WHO and International Union Against Tuberculosis and Lung Disease (IUATLD) [1, 2, 3, 4].

The data presented in this report was reported by all the 53 countries in the WHO European Region as well as Liechtenstein, and is collectively referred to as 'Europe'.

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

#### TB case reporting and mortality

Case-based data for the last three years have been uploaded to the joint database to allow for the delayed exclusion of duplicate cases or those later found not to have TB, as well as for updates of certain variables, including culture and treatment outcome. In this report we analyse the data for outcome 12 months after the start of treatment. The EU and EEA/EFTA countries were asked to update outcomes at 24 months as well, but their response was modest and these data will be published later for MDR TB cases. The case-based data were validated by ECDC Surveillance Unit.<sup>11</sup>

<sup>10</sup> Liechtenstein is not a member of the WHO European Region, but is one of the EEA/EFTA countries that report to ECDC. In this report, totals and rates for the whole WHO European Region will include data from Liechtenstein.

<sup>11</sup> By 2008, all EU, EEA/EFTA countries were reporting individual clinical and demographic data on TB cases to TESSy (Table 1). Of these, 29 countries included data on anti-TB drug susceptibility testing and 21 on outcome for 2006.

Non-EU countries reported their data in aggregated form for the past three years. These data were validated by WHO Regional Office for Europe.

#### Harmonisation of variables

In 2008 the transfer of the TB database from InVS to ECDC required some adjustments of variables to be compatible with the TESSy format. These changes were discussed in detail during a TB surveillance training session held in Stockholm (April 2008) and the Annual TB Surveillance Meeting (June 2008). In order to improve the comparability across case reporting systems, some variables were reviewed. Certain variables that have the same meaning across several diseases were grouped, and were recoded to ensure conformity with the similar variables collected by other networks. For case-based data, several different dates are included in the dataset, e.g. date of onset of disease, date of TB diagnosis, date of notification, date used for statistics. These dates replaced the previous dates of 'years' and 'date of registration'. In the process of improving the comparability of reporting and coding of variables, the exact dates (YYYY-MM-DD) are now the preferred format for dates. Exact dates provide more accurate information and allow better comparison and grouping across diseases. For the time being, where the exact date is not available, the database allows incomplete dates to be entered as well (quarter-year, months, years).

Regarding the geographical information, the country (using the ISO list) is the preferred format. Information at country level (rather than region/sub-region or continent) provides more accurate information and allows better comparison and grouping across diseases. For TB, country of birth is preferred to country of nationality, although one of the two categories for defining foreign or national origin should be provided.

Data on tuberculosis as the underlying cause of death were retrieved from the WHO Statistical Information System (WHOSIS) [5]. These data are coded and reported via national vital registration authorities. Population data for calculation of these mortality rates were downloaded from the same source.

#### TB/HIV surveillance

Information on the HIV serostatus of notified TB cases is collected by the Joint ECDC/WHO system in aggregate format only. Information on TB morbidity at AIDS diagnosis is obtained from case-based information on initial AIDS-indicative disease reported to the Joint ECDC/WHO database. These data were published on 1st December 2008 [6]. The number of cases with HIV-associated TB obtained from both TB and AIDS notification is known to be an underestimation. Testing and reporting of HIV serostatus of TB cases is known to be incomplete. Moreover, TB

episodes occurring after initial AIDS diagnosis are not necessarily 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, information on DST is collected as part of the individual data. When DRS data are not matched with TB case notifications, or no individual data is available, data are collected as aggregate in the DRS questionnaire by previous history of anti-TB treatment and by geographical origin. Information on the organisation of anti-TB drug susceptibility testing (DST) in the country and on laboratory practices for DST is also collected using a standard DRS questionnaire.

### Treatment outcome monitoring

Since the reporting year 2002, outcome data are collected for all individual cases by resubmission of an updated individual dataset for the year before the last (thus for data related to 2007 cases, outcome data were collected for TB cases notified in 2006). Alternatively, treatment outcome aggregated data are reported separately in tabular format.

## 6.2 Data analysis and presentation

### TB case reporting and mortality

While some countries reported data by October 2007, changes to the national totals of TB notifications shown in this report were allowed until the end of November 2008. Notification data were not adjusted for under- or over-reporting. Where relevant, particularly for countries in the EU & EEA/EFTA, tables have been stratified by origin of the case (national/foreign). Rates of sputum smear-positive TB and TB meningitis in children are matched with the standard recommendations for use of BCG in low prevalence countries [10]. The incomplete geographical coverage of notification data from certain countries has been noted in the report (Table 1). For calculation of overall notification rates, country population denominators by age group and gender were derived from Eurostat (mainly for the EU and EEA/EFTA countries) and United Nations statistics (for the rest) [5]. Mortality data collected from WHOSIS, updated by August 2008, were provided by WHO Regional Office for Europe, analysed and interpreted by ECDC. Only deaths coded as ICD-9 010-018 (BTL 020-02S, 029) or ICDIOA IS-19 were considered for inter-country comparison. Deaths attributed to late effects of TB or pneumoconiosis associated with TB were updated until October 2007. Codes ICD-9 137 (BTL 077) and ICD-10 B90, J6S, P37.0 are not included in totals but are shown in Table 33. Data for countries in which reporting completeness or estimated coverage was < 80% in the latest available year (as reported by WHOSIS) are not included in Map 3 but are shown in the Tables (identified in italics) and in Country Profiles.

### TB/HIV surveillance

Information on HIV serostatus of TB cases is expressed as the percentage of all reported TB cases known to have a positive test, and may thus underestimate the HIV prevalence in TB patients. 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. The trend in AIDS-defining TB cases over time is presented by year of diagnosis adjusted for reporting delays [6].

### 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 those cases with DST results available for at least isoniazid and rifampicin. If 90% or more of these cases had results for ethambutol and streptomycin, DST results for these 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. Geographical 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 geographical 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 2007), and DST results for isoniazid and rifampicin are available for the majority of culture positive cases (80%+ in 2007)

or

- data from laboratory networks or surveys using sampling methods considered to be 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.

### Treatment outcome monitoring

The cases eligible for outcome analysis (cohorts) are expected to include all the laboratory-confirmed (confirmation level varies, especially between the non-EU/EFTA countries) 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 treatment outcome monitoring cohorts with those initially notified as pulmonary culture or smear positive, depending on the type of cohort.

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

#### Group A:

- cohorts including at least 90% of laboratory-confirmed pulmonary TB cases notified, considered to be nationally 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. If the total of 'defaulted, transferred and unknown' exceeds 35% of cases included in the cohort, data are also included under Group B.

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

### Geographical areas

The 53 countries of the WHO European Region have been grouped into geographical areas, based on epidemiological and geopolitical features. Liechtenstein is not a member state of the WHO European Region, however, the country is listed in the report as an EEA/EFTA member that reports data to ECDC.

- European Union: the 27 Member States of the EU in 2008.
- EEA/EFTA countries participating in the ECDC: Iceland, Liechtenstein and Norway
- Other West: Andorra, Israel, Monaco, San Marino and Switzerland.
- Balkans: Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey.

- East: 12 non-EU eastern European and central Asian countries<sup>12</sup> – Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
- The respective total populations of four areas in 2007 were: 505 million (EU, EEA/EFTA), 15 million (West non-EU), 92 million (Balkans) and 278 million (East).

TB notifications from Greenland and the UN Administered Province of Kosovo are footnoted in Table 2, but are not included in the totals of the WHO European Region. Data for the part of Cyprus outside the government-controlled area, for Abkhazia and for Southern Ossetia regions of Georgia were not available.

## 6.3 Definitions

### TB case definition for surveillance

In the 2007 data collection, information was collected to enable the classification of cases according to the 2008 case-definition approved by the European Commission's Network Committee. By this definition, cases are divided into possible (based on clinical criteria only), probable (having in addition a positive AFB or detection of *M. tuberculosis* in nucleic acid or granulomata in histology) and confirmed (by culture or by detection of both positive AFB and *M. tuberculosis* nucleic acid). A case discovered post-mortem, with gross pathological findings indicative of active TB and that would have indicated anti-TB treatment had the patient been diagnosed before dying, would also fit the clinical criteria (Table 16).

For all other sections of the report, the WHO case definitions were applied:

#### 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* complex;
- 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 cases meet the following two 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.

<sup>12</sup> The Baltic States (Estonia, Latvia and Lithuania) are included with EU and EFTA since 2004.

## 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 (re-treated case)

A case diagnosed with TB in the past and who 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.

### Extrapulmonary 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 extrapulmonary.

## Note on the definition

- The above definitions are in accordance with the European Commission's definitions for tuberculosis surveillance [4]. Cases with laryngeal TB are included with pulmonary for surveillance purposes.
- All possible, probable and confirmed cases are reported to the joint European surveillance database. For countries with laboratory-based reporting where no clinical information is available, laboratory-confirmed cases should be reported.
- Cases are to be notified only once in a given 12-month period. A case, however, should be reported again if the diagnosis of confirmed tuberculosis is made following completion of anti-tuberculosis treatment (relapse case), even if this occurs within the 12 months since reporting of the initial episode of disease.
- 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 re-treated cases, relapses are included in notifications in all countries whereas cases re-treated after failure or after default or chronic cases are variably included. 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 13).
- 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 tracheo-bronchial tree or the larynx are involved, or extrapulmonary otherwise. Miliary tuberculosis is included under pulmonary (shown separately from respiratory in analysis of mortality, see Table 33). 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 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'.

## Geographical origin

Geographical 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 7 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: indicates primary drug resistance due to infection with resistant bacilli.

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

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

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

**Extensive drug resistance (XDR):** resistance to (1) 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 [11].

## 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 the 2002 cohort: individual outcome data have been collected for all TB cases.
2. Up to the 2003 cohort: aggregate outcome data were only collected for definite (laboratory-confirmed) pulmonary cases. Since the 2004 cohort, aggregate data collection has been extended to all pulmonary cases as well as new extrapulmonary cases.

### Period of observation

Cases are observed until the first outcome is encountered, for a maximum of 12 months after the start of treatment. For monitoring the multidrug resistant cases in EU and EEA/EFTA countries for treatment outcome purposes, two variables were included on the list: Outcome<sub>24Months</sub> and Outcome<sub>36Months</sub>. In these variables, the first outcome for the cases should be reported according to the month, only for cases reported in the previous outcome field 'still on treatment'<sup>13</sup>. Non-EU countries evaluate treatment outcomes according to the method recommended by the WHO definition.

### Outcome categories

Since the 2001 cohort, outcome categories are those internationally recommended – with two additional categories: 'still on treatment at 12 months', and 'unknown' [3, 12].

**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 (laboratory-confirmed) cases, sputum microscopy becoming negative for AFB at the end of treatment and on at least one previous occasion.

**Completed:** treatment completed but does not meet the criteria to be classified as cure or treatment failure.

**Failed:** culture or sputum smear remaining positive or becoming positive again five months or later into the course of treatment.

**Died:** death before cure or treatment completion, irrespective of cause.

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

**Transferred:** patient referred 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.

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<sup>13</sup> The degree of adherence to the 12-month limit is unknown, and a number of countries are known to exceed it.

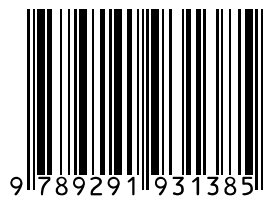


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