

Surveillance of **Tuberculosis** in Europe - **EuroTB**



Report on
tuberculosis cases
notified in 1999

**WHO Collaborating Centre
for the Surveillance of Tuberculosis in Europe**



Surveillance of tuberculosis in Europe: participating countries and national institutions

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Armenia	Ministry of Health	Tirana
Austria	Bundesministerium für soziale Sicherheit und Generationen	Yerevan
Azerbaijan	Ministry of Health	Vienna
Belarus	Scientific Research Institute of Pneumology and Pthisiology	Baku
Belgium	Belgium Lung & Tuberculosis Association (BELTA)	Minsk
Bosnia & Herzegovina	Clinic of Pulmonary Diseases and Tuberculosis "Podhrastovi" Public Health Institute	Brussels
Bulgaria	Ministry of Health	Sarajevo
Croatia	Croatian National Institute of Public Health	Banja Luka
Czech Republic	Clinic of Chest Diseases & Thoracic Surgery	Sofia
Denmark	Statens Serum Institut	Zagreb
Estonia	Tartu University Lung Hospital	Prague
Finland	National Public Health Institute	Copenhagen
France	Direction Générale de la Santé Institut de Veille Sanitaire	Tartu
Georgia	Institute of Phtisiology and Pulmonology	Helsinki
Germany	Robert Koch-Institut	Paris
Greece	National Centre for Surveillance and Intervention (NCSI)	Saint-Maurice
Hungary	"Koranyi" National Institute of Tuberculosis & Pulmonology	Tbilisi
Iceland	Reykjavik Health Care Centre	Berlin
Ireland	National Disease Surveillance Centre	Athens
Israel	Ministry of Health	Budapest
Italy	Ministero della Salute Istituto Superiore di Sanità	Reykjavik
Kazakhstan	Kazakh Tuberculosis Research Institute	Dublin
Kyrgyzstan	National Tuberculosis & Lung Diseases Institute	Jerusalem
Latvia	State Centre of Tuberculosis & Lung Diseases of Latvia	Roma
Lithuania	Lithuanian Centre of Pneumology & Tuberculosis	Roma
Luxembourg	Direction Générale de la Santé	Almaty
Macedonia, Former Yugoslav Republic	Institute for Lung Diseases and Tuberculosis	Bishkek
Malta	Department of Health	Riga
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EuroTB is a European surveillance network set up in 1996, managed jointly by the Institut de Veille Sanitaire (InVS), France and the Royal Netherlands Tuberculosis Association (KNCV), the Netherlands and financially supported by the European Commission (DG-SANCO). EuroTB aims at improving the contribution of surveillance to tuberculosis control in the WHO European region, through the provision of valid, comparable epidemiological information on tuberculosis. EuroTB is based on the voluntary participation of the national coordinators for tuberculosis surveillance in the 51 countries of the WHO European Region.

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SUMMARY

EuroTB is a European network for the surveillance of tuberculosis (TB) started in 1996 with the aim of improving the contribution of surveillance to TB control. Its main activities consist in the annual collection, validation, analysis and publication of standardised data on TB case notifications, including drug susceptibility at the start of treatment. Data are provided from national surveillance institutions in the 51 countries of the WHO European Region. In 1999, 381 975 cases of TB were notified in the Region, with large differences in notification rates between three areas:

- 13 cases per 100 000 population in the West (the 15 countries of the European Union, Andorra, Iceland, Israel, Malta, Monaco, Norway, San Marino and Switzerland);
- 44 per 100 000 in the Centre (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, FYR of Macedonia, Poland, Romania, Slovakia, Slovenia, Turkey and Yugoslavia)
- 86 per 100 000 in the East (the 15 Newly Independent States of the former Soviet Union).

Age specific rates were highest among the age groups over 64 years in the West, 45-54 years in the Centre and 25-34 years in the East. Rates were higher in men, with greater sex differences in countries with higher notification rates. In the West, 27% of the cases were of foreign origin (>50% in nine countries). Overall, 87% of the cases had never been treated with anti-TB drugs in the past. Pulmonary cases represented 68% of TB cases in the West and 87% in the Centre. Among pulmonary cases, 45% were sputum smear positive in the West and 50% in the Centre. In the East, respiratory cases represented 94% of TB cases and 34% of them were sputum smear positive. In the West, in the Centre and in the Baltic countries (Estonia, Latvia and Lithuania), around 50% of the cases notified in 1999 were confirmed by culture, which remains poorly available in the East.

Data on drug resistance at the start of treatment were provided from a total of 34 countries. In 21 countries where culture and drug susceptibility testing (DST) are performed routinely, the results of DST were routinely collected for TB cases notified and were provided by previous anti-TB treatment status. Among cases never treated, the proportion of multidrug resistant (MDR) cases was 0.5% in 18 countries in the West and Centre (range 0-2.1%) and was much higher in Estonia (17.5%), Latvia (10.4%) and Lithuania (7.8%). Among cases previously treated, 3.9% were MDR in the West and Centre and 37% in the Baltic countries. In the West, the global proportion of MDR cases was higher in cases of foreign origin (2.2%) than in nationals (0.2%).

In the West, notification rates in 1999 were 12% lower than in 1995 but were stable in Ireland and in the United Kingdom and higher in Denmark and Norway, due to increasing numbers of foreign-born cases. In 10 countries with available data, numbers of national cases decreased more markedly (-26%) than those of cases of foreign origin (-7%). In the Centre, rates decreased between 1995 and 1999 in nine countries but increased by 15-30% in Albania, Bosnia-Herzegovina, Bulgaria and Romania. In the East, rates in 1999 were 50% higher than in 1995, with increases ranging from 20% to 137% in 13 countries. In the same period, TB cases diagnosed in specific population groups such as prisoners or foreigners were increasingly included in TB notifications.

In most countries in the West and Centre of Europe, stable or decreasing TB notification rates and low levels of drug resistance indicate that TB control remains overall effective. In the West, cases of foreign origin represent a high and increasing proportion of TB cases. In the East, the 50% increase in TB notification rates between 1995 and 1999 indicates increasing TB incidence and, in some countries, improved completeness of notification. Increasing incidence and high levels of drug resistance indicate a reduced performance of TB control programmes in a time of socio-economic hardship. These trends and the possible impact of the spreading HIV epidemic, call for urgent action to readapt and strengthen TB control programmes in the East.

RÉSUMÉ

EuroTB est un réseau européen de surveillance de la tuberculose (TB) créée en 1996 pour améliorer la contribution de la surveillance au contrôle de la TB. Ses activités principales consistent au recueil, à la validation, l'analyse et la publication de données standardisées sur les cas déclarés de TB et sur la résistance aux médicaments anti-TB en début de traitement. Les données sont fournies par les institutions nationales de surveillance des 51 pays de la Région Europe de l'OMS. En 1999, 381 975 cas de TB ont été déclarés dans la Région, avec des différences importantes dans les taux de déclaration selon trois zones :

- 13 cas pour 100 000 habitants à l'Ouest (les 15 pays de l'Union Européenne Andorre, Islande, Israël, Malte, Monaco, Norvège, Saint Marin et la Suisse) ;
- 44 pour 100 000 au Centre (Albanie, Bosnie-Herzégovine, Bulgarie, Croatie, Rép. Tchèque, Hongrie, Macédoine, Pologne, Roumanie, Slovaquie, Slovénie, Turquie et Yougoslavie)
- 86 pour 100 000 à l'Est (les 15 pays de l'ex-URSS)

Les taux de déclaration par âge sont plus élevés dans les groupes d'âge de plus de 64 ans à l'Ouest, de 35 à 54 ans au Centre et de 25 à 34 ans à l'Est. Les taux sont plus élevés chez les hommes, avec des différences entre sexes plus importantes dans les pays où le taux de déclaration est plus élevé. A l'Ouest, 27 % des cas sont d'origine étrangère (>50 % dans neuf pays). Globalement, 87 % des cas n'ont aucun antécédent de traitement anti-tuberculeux. Les cas pulmonaires représentent 68 % des cas de TB à l'Ouest et 87 % au Centre. Parmi les cas pulmonaires, 45 % à l'Ouest et 50 % au Centre ont un frottis d'expectoration positif. A l'Est, les cas respiratoires représentent 94 % des cas déclarés, et 34 % des cas respiratoires ont un frottis positif. A l'Ouest, au Centre et dans les pays Baltes (Estonie, Lettonie et Lituanie), environ 50 % des cas déclarés en 1999 ont été confirmés par la culture, qui reste peu disponible dans les autres pays de l'Est.

Des données sur la résistance aux médicaments anti-tuberculeux en début de traitement ont été fournies par 34 pays. Dans 21 pays où la culture et l'antibiogramme (ATB) sont pratiqués en routine, les résultats de l'ATB ont été recueillis sur l'ensemble des cas déclarés et ont été fournies selon les antécédents de traitement anti-tuberculeux. Parmi les cas jamais traités, la proportion de cas multirésistants (MDR) est de 0.5 % dans 18 pays à l'Ouest et au Centre (0 à 2.1 %). Elle est beaucoup plus élevée en Estonie (17.5 %), Lettonie (10.4 %) et Lituanie (7.8 %). Parmi les cas déjà traités, 3.9 % sont MDR à l'Ouest et au Centre et 37 % dans les pays baltes. A l'Ouest, la proportion globale de cas MDR est plus élevée parmi les cas d'origine étrangère (2.2 %) que parmi les cas nationaux (0.2 %).

Entre 1995 et 1999, les taux de déclaration ont globalement diminué de 12 % à l'Ouest mais sont restés stables en Irlande et au Royaume-Uni et ont augmentés au Danemark et en Norvège, en raison d'une hausse du nombre de cas nés à l'étranger. La diminution du nombre de cas est plus importante chez les patients nationaux (-26 %) que chez ceux d'origine étrangère (-7 %) (données de 10 pays). Au Centre, les taux ont diminué de 9 % à 24 % dans neuf pays mais, par contre, ont augmenté de 15 % à 30 % en Roumanie, Albanie, Bulgarie et Bosnie-Herzégovine. A l'Est, les taux en 1999 étaient 50 % plus élevés qu'en 1995, avec des augmentations allant de 20 % à 137 % dans 13 pays. Pendant cette même période les cas de TB diagnostiqués dans des groupes de populations spécifiques, tels que les prisonniers ou les étrangers, ont été plus en plus inclus dans les déclarations de cas.

Dans la plupart des pays de l'Ouest et du Centre de l'Europe, la stabilité ou la baisse des taux de déclaration ainsi que le faible niveau de résistance aux antituberculeux indiquent que le contrôle de la TB reste globalement efficace. A l'Ouest les cas d'origine étrangère représentent une proportion élevée et en constante augmentation des cas déclarés. A l'Est, l'augmentation de 50 % des taux de déclaration entre 1995 et 1999 indique une hausse de l'incidence de la TB, et aussi une meilleure exhaustivité de la déclaration. L'augmentation de l'incidence et les niveaux élevés de résistance aux médicaments anti-tuberculeux témoignent d'une réduction de la performance des programmes de lutte, dans une période de difficultés socio-économiques. Ces tendances, qui pourraient être accentuées par l'épidémie d'infection à VIH, appellent à une réadaptation et à un renforcement urgents des programmes de lutte anti-tuberculeuse à l'Est.

РЕЗЮМЕ

Европейская сеть ЕвроТБ по эпиднадзору за туберкулезом начала работать в 1996 году с целью улучшить влияние эпиднадзора на контроль туберкулеза. Главные направления работы этой сети включают сбор, подтверждение, анализ и распространение стандартной информации о сообщениях случаев туберкулеза включая лекарственную устойчивость в начале лечения. Данные предоставлены национальными учреждениями по эпиднадзору за туберкулезом в 51 стране Европейского региона ВОЗ. В 1999 г. в регионе было зарегистрировано 381 975 случаев туберкулеза. Показатели зарегистрированных случаев значительно отличаются в трех географических регионах :

- 13 случаев на 100 000 в Западной Европе (15 стран Европейского Сообщества, Андорра, Исландия, Израиль, Мальта, Монако, Норвегия, Сан-Марино, Швейцария ;
- 44 случая на 100 000 в Центральной Европе (Албания, Босния и Герцеговина, Болгария, Хорватия, Чешская Республика, Венгрия, Бывшая Югославская Республика Македония, Польша, Румыния, Словакия, Словения, Турция, Югославия) ;
- 86 случаев на 100 000 в Восточной Европе (15 новых независимых республик бывшего Советского Союза).

В Западной Европе показатели зарегистрированных случаев были самыми высокими у пациентов в возрасте 64 лет, 45-54 лет в Центральной Европе и 25-34 лет в Восточной Европе. Показатели зарегистрированных случаев были выше у мужчин, с большей разницей по половому признаку в странах с более высокими показателями. Пациенты иностранного происхождения составляли 27 % от всех зарегистрированных случаев в Западной Европе (> 50 % в 9 странах). Вообще, 87 % случаев никогда не получали противотуберкулезное лечение в прошлом. Легочные случаи составляли 68 % случаев туберкулеза в Западной Европе и 87 % в Центральной Европе. Случаи с положительным мазком мокроты составляли 45 % от легочных случаев в Западной Европе и 50 % в Центральной Европе. В Восточной Европе респираторные случаи составляли 94 % случаев туберкулеза из которых 34 % были случаи с положительным мазком мокроты. На Западе, в Центре и в Балтийских странах (Эстония, Латвия и Литва) приблизительно 50 % случаев зарегистрированных в 1999 г. были подтверждены культуральным исследованием которое слабо доступно в Восточной Европе.

34 страны предоставили данные о лекарственной резистентности в начале лечения. В 21 стране использовавших рутинно культуральное исследование и пробы на лекарственную устойчивость (ПЛУ), сбор результатов ПЛУ рутинно производился у всех зарегистрированных случаев туберкулеза и данные были предоставлены по статусе противотуберкулезного лечения в прошлом. У никогда нелеченных случаев множественная резистентность (MDR) составляла 0.5 % в 18 странах Западной и Центральной Европы (в ряду 0-2.1 %) и была более высокая в Эстонии (17.5 %), в Латвии (10.4 %) и в Литве (7.8 %). Множественная резистентность у случаев получавших лечение в прошлом составляла 3.9 % случаев в Западной и Центральной Европе и 37 % случаев в Балтийских странах. В Западной Европе глобальная пропорция множественной лекарственной резистентности была выше у пациентов иностранного происхождения (2.2 %) в сравнении с местными жителями (0.2).

На Западе показатели всех зарегистрированных случаев в 1999 г. понизились на 12 % в сравнении с 1995 г. но остались стабильными в Ирландии и в Соединенном Королевстве и увеличились в Дании и Норвегии вследствие увеличения числа пациентов родившихся за границей. Более значительное снижение показателей наблюдалось в 10 странах у местных жителей (- 26 %) по сравнению с пациентами иностранного происхождения (- 7 %). На протяжении 1995 и 1999 гг. в Центре показатели снизились в 9 странах но увеличились на 15 – 30 % в Албании, Болгарии, Боснии и Герцеговине и Румынии. В Восточной Европе показатели увеличились в 1999 г. на 50 % в сравнении с 1995 г., с ростом от 20 % до 137 % в 13 странах. За тот же период случаи туберкулеза зарегистрированные у специфических групп населения, напр. заключенных или иностранцев, в возрастающей мере включались в регистрацию туберкулеза.

В большинстве стран Западной и Центральной Европы стабилизация или снижение показателей регистрации туберкулеза, и низкий уровень резистентности к противотуберкулезным препаратам свидетельствуют, что контроль туберкулеза эффективен. В западных странах, доля зарегистрированных случаев в группе населения иностранного происхождения составляет высокую и возрастающую пропорцию зарегистрированных случаев туберкулеза. В Восточной Европе показатель зарегистрированных случаев туберкулеза увеличился на 50 % с 1995 г. на 1999 г. и свидетельствует о росте заболевания туберкулезом и о более комплексной регистрации случаев в некоторых странах. Рост заболеваемости и высокий уровень лекарственной резистентности свидетельствуют о ухудшении работы программ по эпиднадзору за туберкулезом в периоде социально-экономических трудностей. Вышесказанное и возможное влияние распространения эпидемии ВИЧ, вынуждают принять срочных мер по приспособлению и усилению контроля туберкулеза в Восточной Европе.

TECHNICAL NOTE

All the 51 countries of the WHO European Region participate in the tuberculosis surveillance activities co-ordinated by EuroTB. Country participation is on a voluntary basis. National surveillance institutions are appointed for participation in EuroTB activities and are responsible for the quality of data provided. The principles, methods and definitions guiding EuroTB activities are those recommended by working groups including WHO and the International Union against Tuberculosis and Lung Disease (IUATLD) and approved by European country representatives [1, 2].

2.1 Data collection and management

Data are collected once per year. In order to allow for validation and consolidation at national level, data are collected several months after the end of the calendar year of interest. Data reported for previous years are not routinely updated.

Individual data

Individual, anonymous data, according to a standardised data file specification are collected yearly on TB cases notified at the national level and starting treatment (or diagnosed) in the previous calendar year. Individual data are validated by the EuroTB team and then collated in a European data set.

Aggregate data

When individual data cannot be provided, data on TB cases notified are provided as aggregate data through standard Tables including numbers of TB cases by age and sex, geographic origin, previous anti-TB treatment status (never treated / previously treated), site of disease and bacteriological confirmation (culture and sputum smear results). Since 1999, aggregate data are collected jointly with the WHO Regional Office for Europe, using a common form which also includes sections on characteristics of national surveillance and TB control policies and data on treatment outcome monitoring. The form may be completed through the Internet, via the Computerised Information System for Infectious Diseases (CISID), an application developed by the WHO Regional Office for Europe, or using electronic Tables or on paper. Data provided are validated

by both WHO and EuroTB teams. After validation, specific aggregate data sets are created (e.g. data by sex and age group) which also include data initially provided in individual form and constitute the basis for the analyses published in this report. Figures presented in this report may differ from those published by WHO [3, 4] mainly due to the use of individual data further validated.

Drug resistance surveillance (DRS)

Since 1998, data on the results of drug susceptibility testing (DST) at the start of treatment for isoniazid, rifampicin, ethambutol and streptomycin are collected, together with information on the organisation of DRS and on laboratory practices for DST. DST results are provided as "susceptible" or "resistant". If the proportion method is used, resistance is defined as growth of $\geq 1\%$ colony growth at the critical concentrations of the drug being tested.

In countries where DST results are linked to TB case notifications (i.e. are provided for culture positive cases *notified*), DST results are provided as individual data in the same data file containing other information on TB cases. In countries unable to do so, or where DST results are not linked to TB case notifications, DST results are provided in aggregate form as numbers of resistant cases for each drug or drug combination, by previous anti-TB treatment status and by geographic origin (national / foreigner).

2.2 Definitions

Case definition

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 case

A case meeting the two following conditions:

- a clinician's judgement that the patient's clinical and/or radiological signs and/or symptoms are compatible with tuberculosis,
- and
- a clinician's decision to treat the patient with a full course of anti-tuberculosis treatment.

All definite and other-than-definite TB cases starting treatment in the calendar year of interest are notifiable to EuroTB and are included in the figures presented in this report. Cases should be notified only once in a given calendar year, i.e. cases starting a second course of treatment (e.g. after interruption) in the same calendar year as the previous notified episode should not be notified again.

Previous anti-TB treatment status

Never treated case

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

Previously treated case

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

In countries providing individual data, information is collected on both previous TB diagnosis and previous anti-TB treatments. In countries where information is available only on previous TB diagnosis, cases with a previous TB diagnosis are classified as previously treated.

Note: Previously treated cases include relapses, failures, returns after default and chronic cases [5]. Relapses are included in notifications in all countries whereas the notification of other previously treated cases varies across countries [6].

Site of disease

Pulmonary case

A case with TB affecting the lung parenchyma and/or the tracheo-bronchial tree.

Extrapulmonary case

A case with TB affecting any site other than pulmonary as defined above. Pleural TB and intratho-

racic lymphatic TB without involvement of the lung parenchyma are classified as extrapulmonary.

In alternative to the recommended "pulmonary" classification above, cases can be classified according to the "respiratory" classification, in which pleural and intrathoracic lymphatic TB cases are classified as "respiratory" cases together with pulmonary cases (as defined above), and extrapulmonary cases include TB affecting any other site.

Cases with both pulmonary and extrapulmonary (or respiratory and extrapulmonary) localisation are classified as pulmonary (or respiratory) cases, including cases with disseminated TB (i.e. TB involving more than two organ systems, miliary TB or isolate of *M. tuberculosis* complex from blood). In individual data, detailed information is collected on the major site and one minor site of disease. The pulmonary localisation is always classified as the major site.

Geographic origin

The geographic origin of TB cases is provided according to place of birth (born in the country / foreign born) or, if place of birth is unavailable, to citizenship (national / foreign citizen). The specific country or continent of birth (or citizenship) is collected in individual data. When presenting individual data by continent of origin, Europe is defined as the WHO European Region and Asian countries within the WHO European Region are excluded from Asia.

Drug resistance

Mono-resistance

Resistance to a single first line anti-TB drug (isoniazid, rifampicin, ethambutol and streptomycin).

Multidrug resistance (MDR)

Concomitant resistance to at least isoniazid and rifampicin.

Polyresistance

Resistance to at least two first line anti-TB drugs, including multidrug resistance.

Resistance among cases never treated

It indicates primary drug resistance due to infection with resistant bacilli.

Resistance among cases previously treated

It usually indicates acquired drug resistance, i.e. emerging in a patient during treatment as a consequence of selection of drug-resistant mutant bacilli.

It can also result from exogenous re-infection with resistant bacilli.

2.3 Data presentation

Numbers of cases are shown by year of report and are not adjusted for under-notification or for over-notification, on which most recent country estimates were provided for 1997 [7].

Country population denominators for calculation of notification rates are taken from United Nations demographic estimates (1994 update until 1997 [8]; 1998 update since 1998 [9]), except for Andorra [10]. Population estimates by geographic origin and regional populations (for Yugoslavia in 1999) were provided by national correspondents.

Based on epidemiological and geographical considerations, the 51 countries of the WHO European Region have been grouped into three geographic areas:

- West: the 15 European Union countries plus Andorra, Iceland, Israel, Malta, Monaco, Norway, San Marino, Switzerland); within the West, subtotals are shown for the European Union;
- Centre: Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, the Former Yugoslav Republic (FYR) of Macedonia, Poland, Romania, Slovakia, Slovenia, Turkey, Yugoslavia.
- East: the 15 Newly Independent States of the former Soviet Union, including the Baltic countries (Estonia, Latvia, Lithuania);

The respective total populations of the three areas were 395, 187 and 292 million in 1999.

Drug resistance surveillance

Proportions of resistant cases are calculated using as a denominator cases with available DST results for at least rifampicin and isoniazid. The results for

ethambutol and streptomycin are presented if these two drugs were considered to be routinely tested in 1999 and, in countries providing individual data, if results were available for at least 95% of the cases tested for isoniazid and rifampicin.

In countries where culture or DST are not routinely performed for TB diagnosis, DST results from diagnostic testing (i.e. from testing done for routine diagnosis) may be unrepresentative. Drug resistance surveillance (DRS) data provided to EuroTB may be collected for culture positive TB cases notified or on selected samples of TB cases unlinked to TB notifications, e.g. selected laboratories or clinical Centres. Finally the geographic coverage can be national or partial. According to diagnostic practices, source of data and geographic coverage, countries are divided in two groups for the presentation of drug resistance data in Tables 16-21:

group A includes countries in which:

- culture and DST results are routinely performed for TB diagnosis and
- DST results were collected on all or large national samples of culture positive TB cases notified in 1999;

group B includes countries in which:

- culture and/or DST are not routinely performed at TB diagnosis or
- DST results were collected on TB cases diagnosed in selected laboratories / clinical Centres, not linked to TB notification, or
- data provided had a partial geographic coverage.

Data in group A are considered as representative, whereas data in group B should be interpreted cautiously. Particularly in countries where culture and DST are not routinely performed for TB diagnosis, DST data represent selected groups of TB cases and should not be used for international comparisons.

CHARACTERISTICS OF NATIONAL TB CASE NOTIFICATION SYSTEMS

3.1 Sources of case notification

In 1999, TB cases were notified by both clinicians and laboratories in a total of 26 countries (Table 1), whereas in the other countries TB cases were notified by clinicians only.

Laboratory reporting of TB cases is recommended in Europe in order to obtain a higher completeness of notification and a more complete information on bacteriological confirmation [1].

3.2 Bacteriological diagnosis

In 1999, culture for *Mycobacteria* was considered to be routinely performed for TB diagnosis in the whole country in 34 countries and in some areas in 14 countries, and was not routinely performed in Albania, Georgia and Turkey (Table 11). Sputum smear was considered to be routinely used for TB diagnosis in the whole country in 43 countries (Table 14). The differences in the availability and use of diagnostic facilities result in different criteria for the classification of "definite" TB cases (see below).

3.3 Case classification

Laboratory criteria

In 1999, both "definite" and "other than definite" TB cases were notified in all countries. Laboratory criteria for classifying a case as "definite" were "positive culture" in 28 countries (compared to 22 countries in 1998) and "positive culture and/or sputum smear" in 23 countries (Table 11).

Site of disease

The pulmonary classification was used in 20 countries in the West, eight countries in the Centre and four countries in the East (Table 9). The other 18 countries provided data based on the respiratory classification (see technical note). These differences limit the comparisons between proportions of pul-

monary cases and, among them, of sputum smear positive cases.

Geographic origin

Geographic origin was classified based on country of birth, recommended, in 25 countries and based on nationality in nine countries.

Previous anti-TB treatments

Information on previous anti-TB treatment was available for 43 countries, whereas five countries provided information on previous history of TB.

3.4 Completeness of TB notifications

Geographic coverage

In 49 countries, data were provided on TB cases notified in the whole country. In Yugoslavia cases in Kosovo and Metohija were not included and in Denmark cases from Greenland and the Faeroe islands were not included. The population of these areas was excluded for the calculation of notification rates.

Previously treated cases

In all countries, both new and previously treated TB cases were notified. However, according to a survey done in 1998, the criteria for notification of previously treated cases differ across countries [6]. In some countries, notification of previously treated cases is limited to cases with specific outcomes of the previous treatment (e.g. cure or treatment interruption) or to "definite" cases, which can result in different completeness of notification for these cases.

Extrapulmonary cases

In all countries except Spain, TB cases were notified with any disease localisation; in Spain, notification of extra-respiratory cases is limited to meningeal TB and total notification rates are therefore not comparable with those of other countries.

Cases diagnosed in specific population groups

As in previous years, information was collected on the notification of TB cases diagnosed in specific

population groups, such as foreigners or prisoners (Table 1). Due to the organisation of national health and surveillance systems, in some countries these cases may be excluded from TB notification statistics, resulting in lower completeness of TB notification.

In 1999, TB cases diagnosed in all the population groups listed in Table 1 (foreigners, prisoners, military personnel, homeless, persons with HIV infection and institutionalised persons) were included in notification in 32 countries (20 countries in the West, 8 in the Centre and 4 in the East) compared to 29 countries in 1998. In 19 countries cases diagnosed in one or more groups were not included in notifications.

Overall, the trend towards increasing inclusion in TB notifications of cases diagnosed in specific population groups, observed since the mid 1990s, continued through 1999. TB cases among prisoners, which may represent a non negligible proportion of TB cases in some countries [11], were included in 46 countries in 1999 compared to 39 countries in 1998.

As in 1998, cases of foreign origin were not included in eight countries in the Centre and East, while in eight further countries only foreign cases who were legal residents were included. Compared with 1998, in 1999, one or more groups of foreigners were included for the first time in notifications in four countries.

Even though inclusion in notifications does not necessarily mean that case notifications for a specific group are complete, this process results overall in increasing completeness of notification. On the other hand, changing completeness of notification makes the interpretation of trends for recent years difficult in the East [12] and in some countries in the Centre.

The differences in diagnostic practices, definitions used and characteristics of national surveillance systems still limit the comparability of TB surveillance data at the European level and further efforts are needed in order to improve the harmonisation of surveillance data.

TUBERCULOSIS CASES NOTIFIED IN 1999

4.1 Information provided

All the 51 countries in the WHO European Region provided data on TB cases notified in 1999 and on the characteristics of the national notification systems. Individual data on TB cases were provided by 22 countries, of which 15 countries in the West (Table 2). Numbers of cases by sex and age group, previous anti-TB treatment status, site of disease and sputum smear result were available for most countries, whereas information on geographic origin and culture results was less complete. In 12 countries in the Centre and in the East, some data (e.g. case distribution by age group) were provided only for new cases, and are presented this year for the first time in the report.

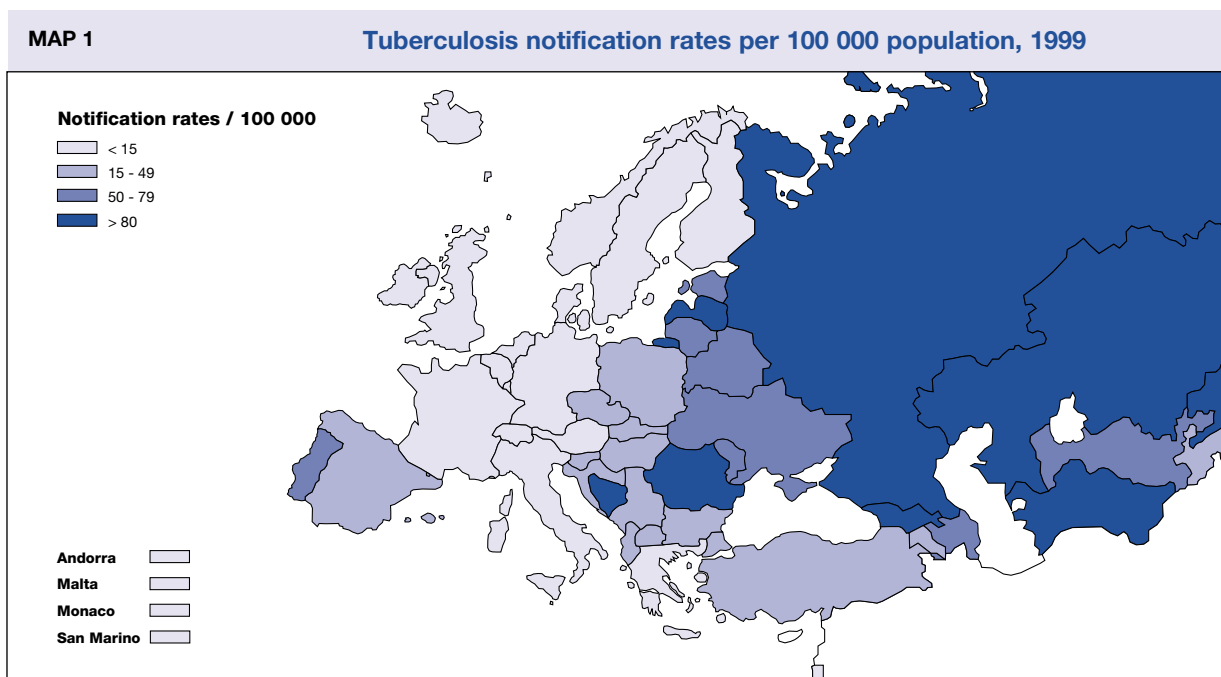
4.2 Global figures and trends

In 1999, a total of 381 975 TB cases were notified in the 51 countries of the WHO European Region, of which 66% in the East, 21% in the Centre and 13% in the West (Table 3). In the East, 54% of the cases were notified from the Russian Federation. In the

Centre, 60% of the cases were notified from Romania and Turkey.

The overall notification rate was 44 per 100 000 population, with important geographic variations between areas and countries (Table 3, Map 1, country profiles). TB notification rates in 1999 were:

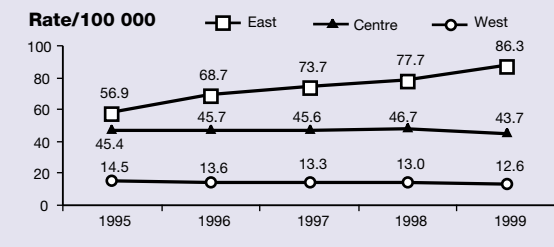
- 12.6 per 100 000 in the West, where rates were lower than 20 per 100 000 population in all countries, except Spain (21.2 per 100 000; only respiratory and meningeal cases notified) and Portugal (52.3 per 100 000);
- 43.7 per 100 000 in the Centre, where rates ranged between 20 and 49 per 100 000 in all countries except the Czech Republic (16 per 100 000), Bosnia-Herzegovina (80.1 per 100 000) and Romania (119.9 per 100 000);
- 86.3 per 100 000 in the East, where rates were over 50 per 100 000 population in all countries except Armenia (42.5 per 100 000) and Tajikistan (41.8 per 100 000). Rates were higher than 130 per 100 000 in Kazakhstan, Kyrgyzstan and Georgia.



Trends in notification rates between 1995 and 1999 varied widely across areas and countries (Table 3, Figure 2, Map 2, country profiles). In the West, the overall notification rate was 12% lower in 1999 than in 1995. Excluding Greece, Israel and Spain, where changes in notification were implemented in recent years, annual decreases in rates were around -4% between 1995 and 1998 and -1.6% between 1998 and 1999 (Map 2). In the 14 countries with more than 50 cases notified annually, rates were 6% to 25% lower in 1999 than in 1995 in 10 countries, were stable in Ireland (-2%) and the United Kingdom (+1%) and were higher in Norway (+13%) and Denmark (+17%), due to increasing numbers of cases of foreign origin (country profiles). In 10 countries with available data, average annual decreases in the numbers of notified cases between 1995 and 1999 were more marked among nationals (-7%) than among cases of foreign origin (-1.5%) (Figure 4). These trends confirm previous reports of a slowing decrease or stabilisation of TB incidence in Western Europe since the late 1980s [13].

In the Centre, overall notification rates were 4% lower in 1999 than in 1995, with diverging trends across countries (Map 2): 9% to 24% lower in nine countries but higher in Romania (+15%), Bulgaria (+18%), Albania (+27%) and Bosnia-Herzegovina (+30%). The increase in notification rates in Bosnia-Herzegovina can be partly attributed to the return of

FIGURE 1 Tuberculosis notification rates by geographic area, 1995-1999

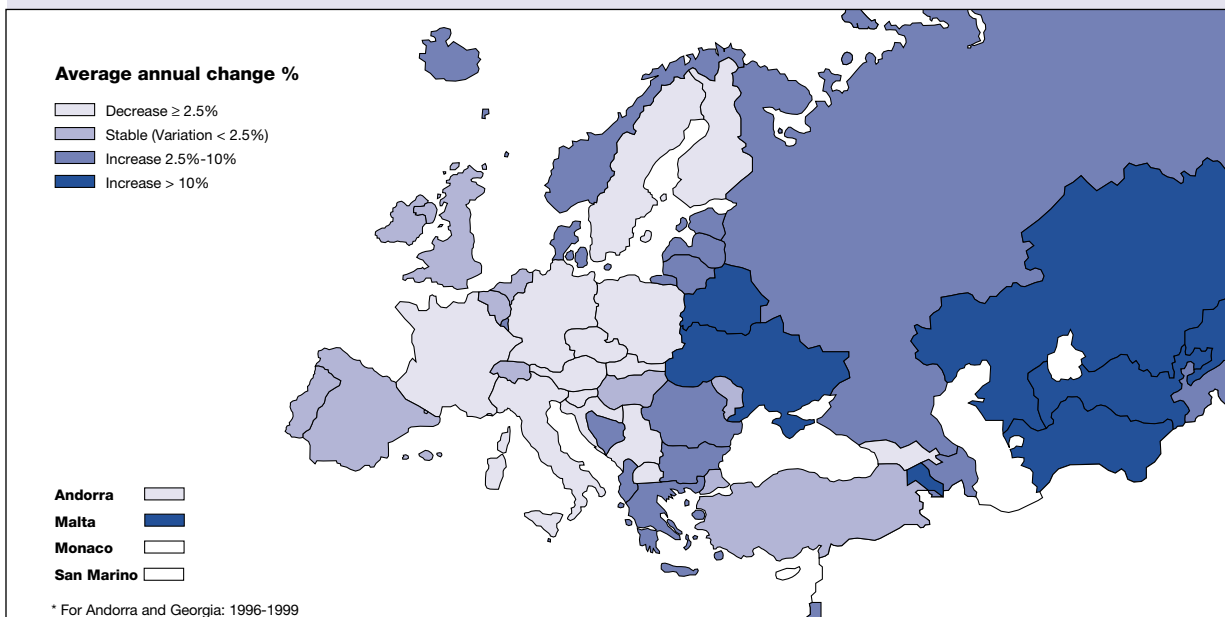


refugees after the war. In the other countries it may reflect increasing incidence (country profiles) but also changes in national surveillance systems, on which detailed information is not available.

In the East (Georgia excluded; data not available for 1995), notification rates were 50% higher in 1999 than in 1995, with increases higher than 20% in all countries except the Republic of Moldova (+8%). In several countries in the East, recent trends in notification rates may have been variably affected by global changes in health and surveillance systems, including the increasing notification of cases diagnosed in specific population groups such as prisoners and foreigners, previously not counted in statistics (see section 3.4).

MAP 2

Average annual change in TB notification rates, 1995-1999 *

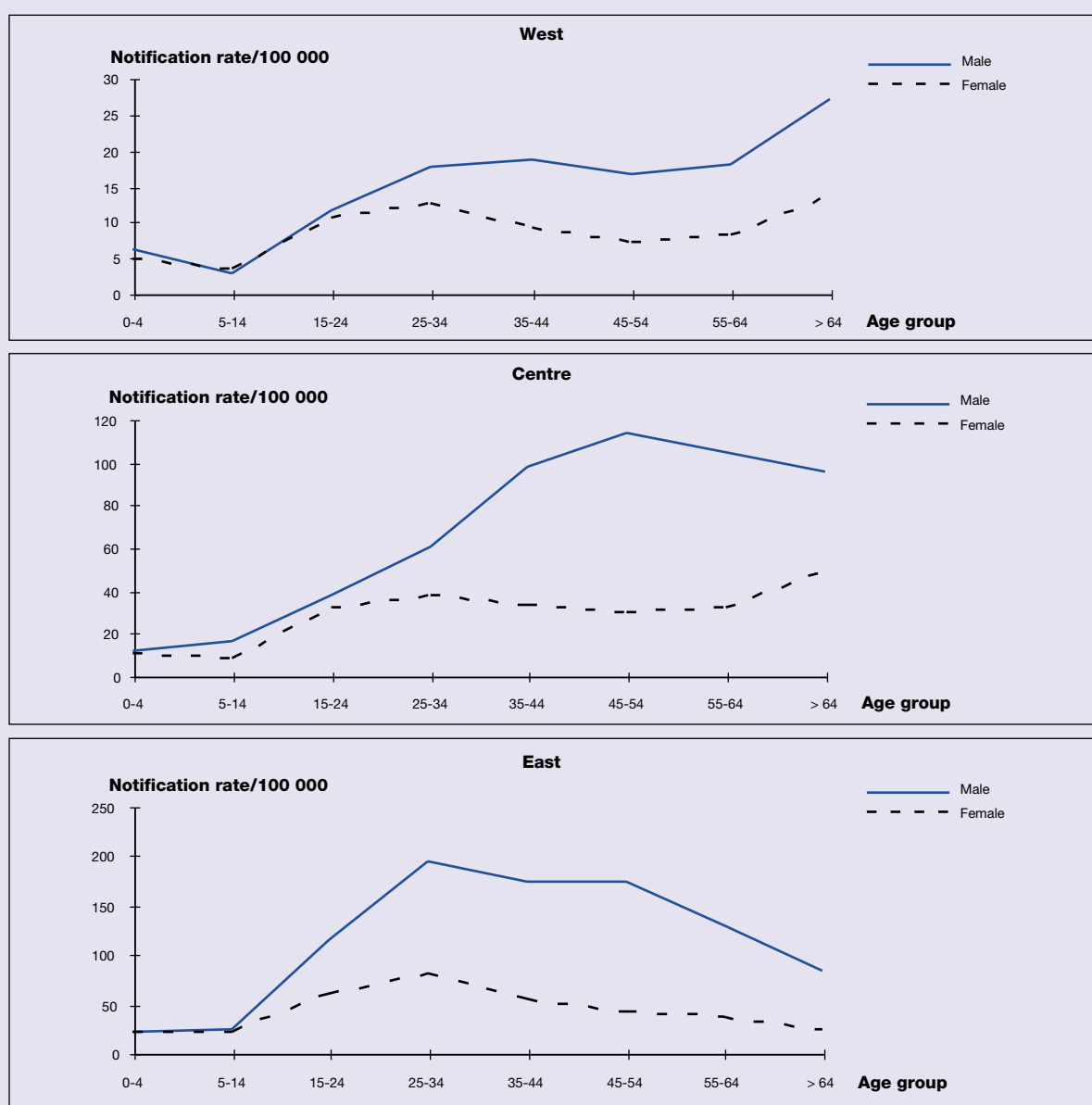


With the possible exception of the Baltic countries in which rates appear to level off in the most recent years (**country profiles**), these increases in TB notification rates indicate an increase of TB incidence continuing through 1999. The very high levels of anti-TB drug resistance (see below and [4]) and the recent spread of HIV infection in several countries in the East [14] constitute further threats to TB control, which deserve urgent public health interventions.

4.3 Sex and age

Numbers of cases by sex were provided from all countries except Turkey (Table 4). Data were provided for new cases only in nine countries in the East. Overall, 68% of the TB cases notified in 1999 were male. The sex ratio (number of male cases per one female case) was 2.3 overall and ranged from 1.6 in the West to 2.5 in the East. A total of 18 countries, of which nine in the

FIGURE 2 Notification rates by age group and sex, 1999



East, reported at least twice as many cases in men as in women. The sex ratio varied by age. It was 1.1 among paediatric cases, increased up to 3.6 in the age group 45-54 years and then decreased again to 1.4 in the age group over 64 years.

Numbers of cases by age group were provided from all countries except Azerbaijan, Belarus and Turkey (Table 5). In Bulgaria and in seven countries in the East, information was provided on new cases only. Paediatric cases (0-14 years of age) accounted for 6% of cases overall, of which one third were among children under 5. Paediatric cases represented more than 10% of cases notified in Bulgaria, Kyrgyzstan, FYR of Macedonia, Turkmenistan and Uzbekistan, possibly suggesting overnotification of paediatric TB cases in some of these countries. Among adults, the age groups 15-44 years accounted for 46% of the cases notified in the West, 45% in the Centre and 62% in the East. Conversely, the age group over 64 years represented 21% of the cases in the West, 17% in the Centre and 7% in the East.

The distribution of cases by age and sex was also available for most countries (Figure 3 and country profiles). Among children, notification rates did not differ by sex. In the West, rates were higher in children under 5 than in older children, reflecting higher risk of developing TB after infection in younger children than in older children [15]. Rates were similar in the two paediatric age groups in the Centre and in the East, suggesting a possible under-reporting of cases in children under 5 in some countries.

In the West, age specific notification rates among men were relatively stable across the age groups 25-34 years to 55-64 years and were highest among the elderly (over 64 years). In women, rates were highest in the age groups 25-34 and among the elderly. In the Centre, rates increased markedly after age 14 in men but less so in women, resulting in large sex differences in the age groups 35-44 and older. In the East, rates were highest in the age group 25-34 years in both sexes. Rates decreased regularly from the age group 35-44 in women. Among men rates remained high until the age group 45-54 and decreased markedly in the older age groups.

Higher TB notification rates in adult men compared to women observed in all countries result from higher prevalence of infection in men [16]. The larger difference in notification rates by sex observed in the Centre and in the East could be also partly explained by

underreporting of female cases due to differences in the access to health services in some countries [17].

The higher notification rates in the older age group in the West mainly reflects reactivation of old *M. tuberculosis* infection. Higher notification rates in young adults in the East indicate high levels of transmission in recent years in this area. However it should be pointed out that in several countries in the East data were provided for new cases only, which are expected to be younger than cases with previous TB episodes.

In the 30 countries providing the age and sex distribution of TB cases by geographic origin, the proportion of cases aged 15 to 34 years was much higher in foreigners (45%) than in nationals (27%) (country profiles). The proportion of male cases was also higher in foreigners (66%) than in nationals (59%). These differences influence age-specific notification rates in countries in the West with large proportions of cases reported in foreigners (see below and country profiles).

In most countries in the West and in the Centre with decreasing notification rates in recent years, age specific notification rates in 1999 were lower than those in 1995 among all age groups (see country profiles) suggesting decreasing TB transmission. In the East, (data from five countries) recent trends in age specific rates are variable across countries and should be interpreted cautiously, due to the increasing inclusion of cases from specific population groups, which may have affected the age distribution of cases.

4.4 Geographic origin

Numbers of cases by geographic origin were provided from 34 of the 46 countries in which cases of foreign origin are included in TB notifications (Table 6). Cases were classified by country of birth, as recommended, in 25 countries and by citizenship in nine countries. Information was available from all countries in the West, seven countries in the Centre and five countries in the East. In the West, cases of foreign origin represented 27% of notified cases overall and more than 40% in 10 countries (Map 3). Proportions of cases of foreign origin were generally lower in the countries of the Centre and of the East.

In 12 countries in the West (Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland,

FIGURE 3 TB notification rates by age group, sex and geographic origin, 1999, West *

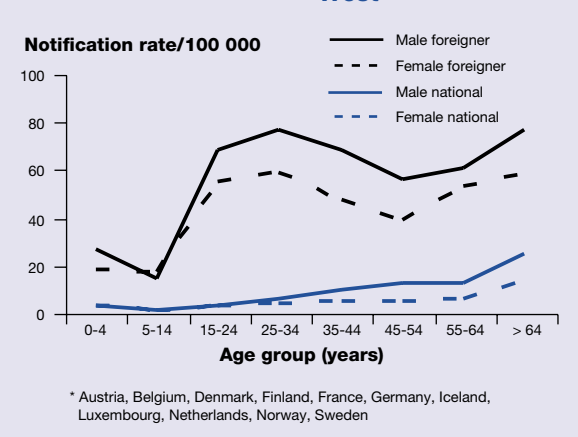
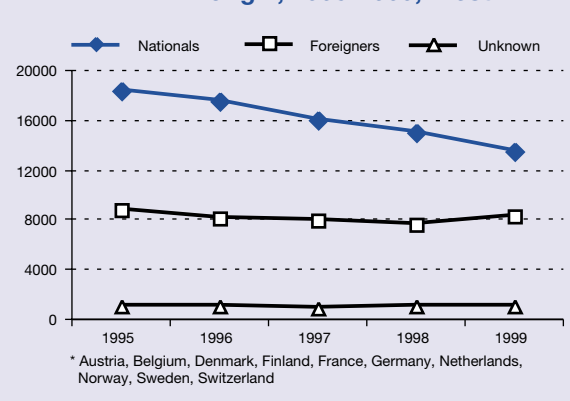


FIGURE 4 Tuberculosis cases by geographic origin, 1995-1999, West *



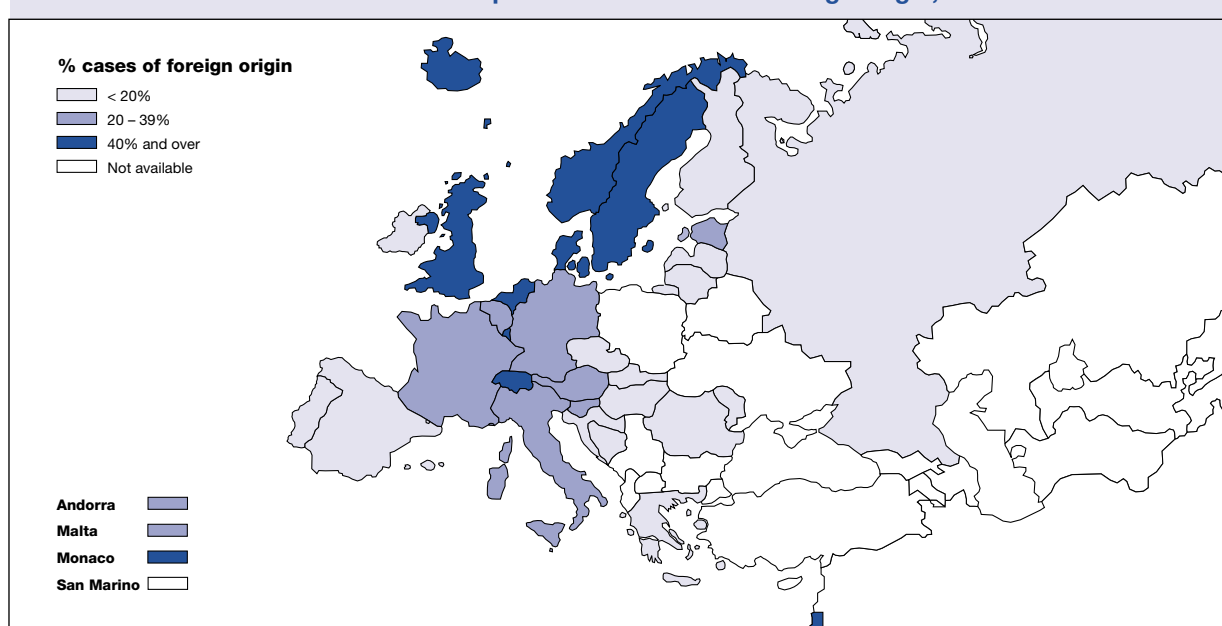
Luxembourg, Netherlands, Norway, Sweden), notification rates were overall seven times higher in foreigners (52.4 per 100 000) than in nationals (7.3 per 100 000) with rate ratios ranging from 2.3 in Ireland to 33 in the Netherlands. These differences in rates by geographic origin depend on migration patterns which vary widely across western Europe, and should be interpreted with caution considering the difficulties in obtaining accurate denominators for the population of foreign origin.

In the population of foreign origin, age specific notification rates were highest in the age groups 25-34 and over 64 years, at a higher level in men than in women (Figure 3). Among nationals, adult rates increased regularly with age and were highest in the age group over 64 years. Rates in nationals were much lower at all ages than those in the foreign population.

In 10 countries with available data in the West, trends in the numbers of TB cases were different according to geographic origin (Figure 4 and country profiles). Total numbers of cases were 19%

MAP 3

Proportion of TB cases of foreign origin, 1999



lower in 1999 than in 1995, with greater decreases among nationals (-26%; average annual decreases of 7%) than among cases of foreign origin (-6%; average annual decreases of 1.5%).

The country of origin of foreign cases was available for 21 countries providing individual data (Table 7). Of the 7765 cases of foreign origin, 34% were from Africa (among which 13% from Somalia and 5% from Morocco), 31% from Asia (20% from the Indian subcontinent) and 26% from a country of the WHO European Region other than the country of notification (6% from Bosnia-Herzegovina, 4% from Yugoslavia, 3% from Turkey).

4.5 Previous anti-tuberculosis treatment status

Numbers of cases by previous anti-TB treatment status were available for 43 countries, whereas five countries provided information by previous diagnosis of TB (Table 8). Overall, 87% of TB cases notified in 1999 had never been treated for TB, 11% had been previously treated for TB and 3% had no information on previous anti-TB treatment. Cases with missing information on previous anti-TB treatment status were concentrated in the West, where they represented 21% of cases.

Previously treated cases represented 7% of the cases in the West (range 2-11%), 12% in the Centre (4-18%) and 11% in the East (2-32%). Beyond differences in definitions (previous diagnosis vs. previous treatment) different proportions of previously treated cases may be due to variable inclusion of these cases in TB notifications (see section 3.3) and to the completeness of notification. Therefore these data cannot be interpreted as an indicator of the effectiveness of previous anti-TB treatments.

4.6 Site of disease

In 1999, all countries except Spain notified cases with any anatomic localisation; in Spain only respiratory and meningeal TB cases were notified. Numbers of cases by site of disease were provided from all countries except Tajikistan (Table 9). The recommended pulmonary classification (see technical note) was used in 31 countries and the respiratory classification in 18 countries, of which 11 in the East. Pleural and intrathoracic lymphatic cases, (classified differently as "extrapulmonary" cases or as "respira-

tory" cases), represented 8.4% of TB cases in the countries providing specific site of disease in individual data (see below). Data by site are commented separately according to the classification used.

In the 20 countries in the West using the pulmonary classification, the proportion of pulmonary cases was 68% (range 60 – 98%). In the Centre the proportion of pulmonary cases (eight countries) was 87%, similar to the proportion of respiratory cases (88%) reported in the five countries using the respiratory classification. In the East, respiratory cases represented 94% of the cases notified in the 11 countries using the respiratory classification.

In the 22 countries providing individual data, the site of disease was analysed by sex, age and geographic origin. Extrapulmonary TB was more frequent among children than among adults (28% versus 20%). Among adults, female cases were 1.8 times more likely than male cases to have extra-pulmonary TB (27% versus 15%). In the 14 countries in the West, extrapulmonary TB was more frequent in cases of foreign origin than in nationals (37% versus 24%). Lower proportions of pulmonary cases in the West compared to the Centre, may be due to more frequent extrapulmonary localisation among cases of foreign origin, and possibly to more complete notification of extrapulmonary cases.

Information on the major site and one minor site of disease (see technical note) was available for 15 of the countries providing individual data (Table 10). Pulmonary TB, always classified as major site, was reported in 82% of the cases overall and extrapulmonary localisations were reported as major and/or minor site of disease in 22% of the cases. Among extrapulmonary sites, pleural TB was reported in 9.4% of the cases, extrathoracic lymphatic TB in 3.8% and each of the other sites in less than 2%. Meningeal TB was reported in 316 cases (0.6%). Intra-thoracic lymphatic TB and meningeal TB were more frequently reported among children than among adults (respectively 6.6% versus 1.1% and 4.3% versus 0.5%). Pleural TB was more frequent among children and adults aged 15 – 44 years than among older cases.

4.7 Bacteriology results

4.7.1 Culture

Data by culture result were provided overall from 38 countries (Table 11). The overall proportion of culture positive cases was around 50% in the West and

in the Centre and 29% in the East, where data were available from seven countries only. Proportions of culture positive cases were:

- higher than 60% in 14 countries in the West and in Croatia, Estonia, Latvia and Slovenia.
- lower than 40% in France and Portugal in the West, Albania and Hungary in the Centre and Armenia, Azerbaijan, Georgia and Rep. of Moldova in the East.

Low proportions of cases with positive culture may be due to:

- difficult access to laboratories, as in several countries in the East,
- diagnostic practices e.g. clinicians request of culture in selected cases (e.g. Hungary),
- characteristics of surveillance, as in France there is no follow-up of clinician notifications with missing culture result.

In some countries in the Centre and in the East (e.g. Russian Federation, Ukraine), results of culture and of sputum smear are not recorded separately, and results of culture and sputum smear are recorded together as "bacteriological confirmation" of diagnosis. This information is not presented in the Tables.

Culture status and results were further analysed by site in countries providing individual data, in which additional categories were available for cases without positive culture (Table 12). Among pulmonary cases, information on culture was missing for 20% of the cases in the West. Culture was not performed in 3% of the pulmonary cases in the West and Centre and was negative in 6% of cases in the West and 22% in the Centre. Culture results for extrapulmonary cases were not available in Italy. In the other countries in the West, 27% of extrapulmonary cases had no information on culture, 41% were culture positive and 6% were culture negative. In the Centre culture was not performed for a high proportion of cases in Romania and in Hungary. Overall, 10% of the cases were culture positive and the majority of the cases were culture negative (36%) or had unknown culture result (20%). High proportions of "negative" culture results may suggest that coding of culture results needs further validation in some countries.

4.7.2 Species identification

Species identification for culture positive TB cases notified in 1999 was provided from 24 countries (Table 13). Overall, 90% of cases were due to *M. tuberculosis* and 9.6% had no information on species. In the West *M. bovis* represented 0.8% of the cases and *M. africanum* 0.4%. The proportion of cases due to *M. bovis* was higher in Ireland (4.2%) than in the other countries. In the Centre, apart from one case due to *M. bovis* in the Czech Republic all cases were due to *M. tuberculosis*. Trends in the proportions of cases by species were relatively stable in the period 1996-1999 (data from 14 countries, not shown).

4.7.3 Sputum smear

The results of sputum smear microscopy were provided from 46 countries (Table 14). In the countries using the pulmonary classification, the proportion of cases with sputum smear positive for acid fast bacilli was 50% in the Centre and 45% in the West. In the East, 34% of respiratory cases were sputum smear positive (seven countries). Proportions of sputum smear positive cases are expected to be lower in countries using the respiratory classification because pleural and intrathoracic lymphatic cases (classified as respiratory cases together with pulmonary cases), are sputum smear negative. Low proportions of smear positive cases may also be due to differences in the availability of sputum microscopy, which was considered not to be routinely performed in eight countries (Table 14) or to shorter diagnostic delays resulting in lower bacillary load. Also, in some countries sputum microscopy may be replaced by microscopy of bronchoalveolar lavage, not valid to determine sputum smear status according to the definitions in use.

Differences in diagnostic practices and in the quality of the information on culture and on sputum smear available through TB notifications limit the use of these data for international comparisons. More complete and accurate information on bacteriological results for TB cases could be obtained through laboratory reporting of TB cases, recommended in Europe [1] but still not implemented in several countries (Table 1).

DRUG RESISTANCE SURVEILLANCE IN 1999

Data on the results of drug susceptibility testing (DST) at the start of treatment were provided from a total of 34 countries.

5.1 Laboratory practices

Information on laboratory practices for DST were provided from all 34 countries providing DST results except Croatia (Table 15). DST was performed by a single laboratory in nine countries (located abroad in two of these), 2-10 laboratories in 12 countries and more than 10 laboratories in 12 countries (Table 15). Among the four methods internationally recommended for DST [2], the non-radiometric proportion method was used in 22 countries, the radiometric proportion in 20 countries, the absolute concentration in eight countries and the resistance ratio in three countries. In 16 countries more than one method was used.

Laboratories had participated in a national and / or international proficiency testing scheme in 26 countries. Among the 19 countries participating in an international proficiency testing scheme, the percentage of agreement between the national results of DST for isoniazid and rifampicin and those obtained by the supranational reference laboratory was generally high. In four countries in the Centre and in the East laboratories did not participate in proficiency testing activities. In three countries information on participation in proficiency testing was incomplete.

5.2 Type of data

In 27 countries, DST results were provided on culture positive TB cases notified in 1999 (Table 16). In seven countries, DST results were provided on TB cases diagnosed in selected laboratories or clinical Centres and were not linked to TB notifications. Culture and DST were performed as a diagnostic routine in 25 countries. Based on the type of TB case population included in surveillance, on the use of culture and DST and on geographic coverage of

data, countries were classified in two groups, presented separately in Tables 16-21.

Group A includes countries in which:

- culture and DST were routinely performed for TB diagnosis and
- DST results were available for all culture positive TB cases notified or for a sample of cases with national coverage.

Under the assumption that in these countries culture positive cases are representative of TB cases notified, these data were considered representative and are described in detail below.

Group B includes countries in which:

- culture or DST were not routinely performed for TB diagnosis or
- DST results were available for selected TB cases (e.g. diagnosed in selected laboratories or notified in selected regions).

In these countries, and particularly in those where culture or DST are performed for selected cases, DST results may not be representative and should not be used for international comparisons.

5.3 Results

Isoniazid and rifampicin were tested systematically in all countries. Ethambutol was not systematically tested in Germany and streptomycin was not systematically tested in seven countries in the West. Corresponding results are not shown in the Tables. Data were provided for each combination of resistance from all countries except the Russian Federation, where only numbers of multidrug resistant cases were available. DST results were provided by previous anti-TB treatment status in all countries except Albania, Greece and Israel and were provided only for cases never treated from Spain and the Russian Federation.

5.3.1 Countries providing representative national data (group A)

Data from 22 countries were included in group A (Table 16). In all these countries culture and DST are performed as a diagnostic routine for TB diagnosis. In 20 of these countries, DST results were collected for all culture positive cases notified at national level. In Croatia and Germany DST results were provided on large national samples of notified cases. In 14 countries, DST results were provided in the individual data set containing other information on TB cases.

Overall, 61% of the TB cases notified in countries in group A were culture positive (range: 49-84%). Among the 19 447 culture positive cases, DST results were available for 17 251 cases (89%). The proportion of cases with missing DST results was highest in Lithuania (31%), Bosnia-Herzegovina (23%), Latvia (17%), Germany (17%) and the Czech Republic (16%) (see country profiles). Global proportions of resistant and multidrug resistant cases were much higher in the Baltic countries and in Israel than in the other countries in the West and Centre (Table 17).

Resistance by previous anti-TB treatment status

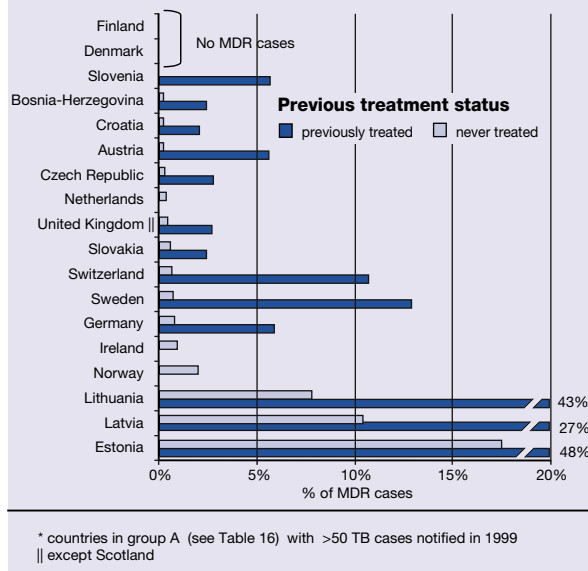
Data by previous anti-TB treatment status were not provided from Israel, where information was only available on previous TB diagnosis. In the remaining countries, among 16 622 cases with DST results, 13 160 (79%) were classified as never treated, 1706 (10%) as previously treated and 1756 (11%) had no information on previous treatments.

Proportions of resistant cases among cases never treated were much lower in the countries of the West and Centre than in the Baltic countries. In the West and Centre, proportions of resistant cases among cases never treated were:

- 4.1% for isoniazid (range: 0-9.3%), compared with 21.7-27.8% in the Baltic countries;
- 0.7% for rifampicin (range 0-2.1%) compared with 10.1-17.8% in the Baltic countries.
- 0.5% for ethambutol (range 0-2.1%; Germany excluded) compared to 4.2-14.0% in the Baltic countries.
- 1.2% for streptomycin (range 0-13.3%; seven countries in the West excluded) compared with 17.5-27.3% in the Baltic countries.

Resistance to rifampicin was combined with resistance to isoniazid (multidrug resistance) in 65% of

FIGURE 5 Proportion of multidrug resistant TB cases by previous anti-TB treatment status, 1999 *



cases never treated in the West and in the Centre and in 92% in the Baltic countries. The proportions of multidrug resistant cases among cases never treated were 0.5% in the West and Centre (range 0-2.1%) and 7.8-17.5% of those in the Baltic countries.

The proportions of resistant cases were generally higher among cases previously treated (Table 19), for each drug and drug combination. The proportions of multidrug resistant cases were 3.9% in the West and Centre (range 0-12.9%) and 26.8-48.3% in the Baltic countries.

In countries where culture and DST at the start of treatment are a diagnostic routine and DST results are linked to TB notifications, drug resistance data can be considered as representative of the country situation. In the countries in the West and in the Centre, the levels of primary resistance and of multidrug resistance are relatively low, which indicates that tuberculosis treatment remains globally adequate. The high levels of primary resistance and multidrug resistance reported from the Baltic countries indicate sub-optimal performance of TB treatment programmes in recent years. Proportions of resistance among cases previously treated should be interpreted more cautiously, as criteria for notification of these cases vary across countries [1] and numbers of previously treated cases were small.

Resistance by geographic origin

DST results by geographic origin were not provided from the Czech Republic and Lithuania (Tables 20-21). Geographic origin was defined according to country of birth in 18 countries and to nationality in Austria and in the Netherlands.

In the countries in the West, cases of foreign origin represented overall 48% of the cases with DST results. Global proportions of resistant cases were generally higher among cases of foreign origin. Among these, 9% were resistant to isoniazid compared with 3.2% of nationals and 2.2% were multidrug resistant compared with 0.2% among nationals. In Israel, where the foreign-born represented 86% of cases notified and 92% of those with DST results, 8.6% of foreign cases were multidrug resistant.

In the thirteen countries of the West and Centre providing individual data, the proportion of multidrug resistant cases was higher among foreigners than among nationals both among cases never treated (1.3% versus 0.1%) and previously treated (9.7% versus 0.9%). Among foreigners, global proportions of multidrug resistant cases were higher among cases of African origin (1.9%) than among cases from a foreign country in the WHO European Region (1.4%) or from Asia (1.1%).

Differences in proportions of resistance by geographic origin should be interpreted cautiously, due to the lack of information on time of immigration and to incomplete information on time and type of previous anti-TB treatment.

In the countries of the Centre and East, foreign-born cases represented 8% of cases tested. Proportions of resistant cases did not differ by geographic origin in Estonia and Latvia. In the countries in the Centre numbers of foreigners were small and comparisons of the proportion of resistant cases by geographic origin inconclusive.

5.3.2 Countries providing other data (group B)

Twelve countries were classified in group B. In three of these countries (France, Spain and Yugoslavia) culture and DST are routinely performed (Table 16). In France, data are collected through a stable sentinel network of 20 university hospital laboratories covering 12 regions. Proportions of resistant cases are low, comparable to those reported from other countries in the West and stable over time [6, 18]. In Spain, data were available only for TB cases never treated, for which a strain was sent to the National Reference Laboratory and should not be taken as representative. The proportions of resistant cases are low and comparable to those observed in a representative survey done in Barcelona [4]. In Yugoslavia, data provided on all culture positive cases notified in the region of Belgrade, show low levels of resistance but they may not be representative of cases notified in other regions.

In the other nine countries in group B, culture or DST are not routinely performed at TB diagnosis. Therefore, DST results from these countries are likely to include selected TB cases, unrepresentative of incident TB cases. Levels of resistance in Greece, Hungary and Romania are higher than those from surrounding countries, possibly due to case selection, as suggested by proportions of resistance varying significantly compared to 1998 [6]. Levels of resistance and multidrug resistance in Kazakhstan, Kyrgyzstan, the Russian Federation and Ukraine are very high but they should not be considered representative, as they are likely to include selected TB cases. Data from the Russian Federation include DST results for 36 217 new culture positive pulmonary cases notified to the Ministry of Health; in this case population the level of primary multidrug resistance is similar to that observed in representative surveys done in two oblasts [4]. In countries where culture or DST cannot be performed routinely, the implementation of representative surveys [19], is needed to obtain representative data.

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TABLES

Table 1. Sources of TB notifications and inclusion of cases diagnosed in specific populations, 1999

Geographic area Country	Source of TB notifications *	Populations							
		Foreigners			Prisoners	Military personnel	Homeless persons	Persons with HIV/AIDS	Institutionalised persons
		Legal residents	Asylum seekers	Illegal residents					
West									
Austria	clin. + labs	□	□	□	□	□	□	□	□
Belgium	clin. + labs	□	□	□	□	□	□	□	□
Denmark	clin. + labs	□	□	□	□	□	□	□	□
Finland	clin. + labs	□	□	□	□	□	□	□	□
France	clin.	□	□	□	□	□	□	□	□
Germany	clin. + labs	□	□	□	□	□	□	□	□
Greece	clin. + labs	□	□	□	□	□	□	□	□
Ireland	clin.	□	□	□	□	□	□	□	□
Italy	clin.	□	□	□	□	□	□	□	□
Luxembourg	clin.	□	□	□	□	□	□	□	□
Netherlands	clin.	□	□	□	□	□	□	□	□
Portugal	clin.	□	□	□	□	□	□	□	□
Spain	clin.	□	□	□	□	□	□	□	□
Sweden	clin. + labs	□	□	□	□	□	□	□	□
United Kingdom	clin.	□	□	□	□	□	□	□	□
Subtotal EU		15	15	15	14	15	15	15	15
Andorra	clin.	□							
Iceland	clin. + labs	□	□	□	□	□	□	□	□
Israel	clin. + labs	□	□	□	□	□	□	□	□
Malta	clin.	□	□	□	□	□	□	□	□
Monaco	clin.	□	□	□	□	□	□	□	□
Norway	clin. + labs	□	□	□	□	□	□	□	□
San Marino	clin. + labs	□			□	□			□
Switzerland	clin. + labs	□	□	□	□	□	□	□	□
Total West		23	21	21	21	22	21	21	22
Centre									
Albania	clin.	□				□	□	□	□
Bosnia-Herzegovina †	clin.	□	□	□	□	□	□	□	□
Bulgaria	clin.	□	□	□	□	□	□	□	□
Croatia	clin. + labs	□	□	□	□	□	□	□	□
Czech Republic	clin. + labs	□	□	□	□	□	□	□	□
Hungary	clin. + labs	□	□	□	□	□	□	□	□
Macedonia, FYR	clin.					□	■	□	■
Poland	clin.					□	□	□	□
Romania	clin. + labs	□	■	■	■	□	□	□	□
Slovakia	clin. + labs	□	□		■	□	■	□	□
Slovenia	clin. + labs	□	□	□	□	□	□	□	□
Turkey	clin.	■	■	■	■	■	■	■	■
Yugoslavia	clin.	□	□	■	□		□		□
Total Centre		11	10	9	12	12	12	12	13
East									
Armenia	clin. + labs	□			□	□	□	□	□
Azerbaijan	clin.				□	□	■	□	□
Belarus	clin.				■	■			□
Estonia	clin. + labs	□	□	□	□	□	□	□	□
Georgia	clin. + labs	□			■	■	□	□	□
Kazakhstan	clin.	□			□	□	□	□	
Kyrgyzstan	clin. + labs				■	■			
Latvia	clin.	□	□	■	□	□	□	□	□
Lithuania	clin. + labs	□	□	□	□	□	□	□	□
Moldova, Republic of	clin.	□			■	■	□	□	□
Russian Federation	clin.	□	□	□	□	□	□	□	□
Tajikistan	clin.	□	□	■	■	■	■		■
Turkmenistan	clin. + labs					□	□		□
Ukraine	clin. + labs				□		□	□	□
Uzbekistan	clin. + labs								□
Total East		9	5	5	13	14	12	10	12
Total WHO European Region		43	36	35	46	48	45	43	47

■ = inclusion since 1999; □ = included before 1999

* clin.=clinicians; clin. + labs=clinicians and laboratories; † Asylum seekers and illegal immigrants not included in Republic Srpska

TABLES

Table 2. Tuberculosis surveillance data provided to EuroTB, 1999

Geographic area Country	Type of data	Data provided							
		Sex and age	Geographic origin	History of TB and TB treatments	Site of disease	Culture	<i>M. tuberculosis</i> species	Sputum smear	Drug resistance
West									
Austria	individual	☐	☐	☐	☐	☐	☐	☐	☐
Belgium	individual	☐	☐	☐	☐	☐	☐	☐	☐
Denmark	individual *	☐	☐	☐	☐	☐	☐	☐	☐
Finland	individual	☐	☐	☐	☐	☐	☐	☐	☐
France	individual *	☐	☐	☐	☐	☐	☐	☐	☐
Germany	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Greece	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Ireland	individual	☐	☐	☐	☐	☐	☐	☐	☐
Italy	individual †	☐	☐	☐	☐	☐	☐	☐	☐
Luxembourg	individual	☐	☐	☐	☐	☐	☐	☐	☐
Netherlands	individual	☐	☐	☐	☐	☐	☐	☐	☐
Portugal	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Spain	aggregate	☐	☐	☐	☐	☐	☐	☐	■
Sweden	individual	☐	☐	☐	☐	☐	☐	☐	☐
United Kingdom	individual	☐	☐	☐	☐	☐	☐	☐	☐
Subtotal EU		15	15	14	15	15	12	15	11
Andorra	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Iceland	individual	☐	☐	☐	☐	☐	☐	☐	☐
Israel	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Malta	individual	☐	☐	☐	☐	☐	☐	☐	☐
Monaco	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Norway	individual	☐	☐	☐	☐	☐	☐	☐	☐
San Marino	no cases in 1999								
Switzerland	individual	☐	☐	☐	☐	☐	☐	☐	☐
Total West		22	22	21	22	22	16	22	17
Centre									
Albania	aggregate	☐		☐	☐	☐	☐	☐	☐
Bosnia - Herzegovina	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Bulgaria	aggregate	■ §		☐	☐	☐	☐	☐	☐
Croatia	individual	☐	☐	☐	☐	☐	☐	☐	☐
Czech Republic	individual *	☐	☐	☐	☐	☐	☐	☐	☐
Hungary	individual	☐	☐	☐	☐	☐	☐	☐	☐
Macedonia, FYR	aggregate	☐		☐	☐	☐	☐	☐	☐
Poland	aggregate	☐		☐	☐	☐	☐	☐	☐
Romania	individual	☐	☐	☐	☐	☐	☐	☐	☐
Slovakia	individual	☐	☐	☐	☐	☐	☐	☐	☐
Slovenia	individual	☐	☐	☐	☐	☐	☐	☐	☐
Turkey	aggregate	☐		☐	■	☐	☐	☐	■
Yugoslavia	aggregate	☐		☐	☐	☐	☐	☐	☐
Total Centre		12	7	13	12	10	7	12	9
East									
Armenia	aggregate	■		☐	☐	☐	☐	☐	☐
Azerbaijan	aggregate	■ §		☐	☐	☐	☐	☐	☐
Belarus	aggregate	■ §		☐	☐	☐	☐	☐	☐
Estonia	individual	☐	☐	☐	☐	☐	☐	☐	☐
Georgia	aggregate	☐		☐	☐	☐	☐	☐	☐
Kazakhstan	aggregate	☐		☐	☐	☐	☐	☐	☐
Kyrgyzstan	aggregate	■		☐	■	☐	☐	☐	☐
Latvia	aggregate	■	☐	☐	☐	☐	☐	☐	☐
Lithuania	aggregate	☐	☐	☐	☐	☐	☐	☐	☐
Moldova, Republic of	aggregate	■	☐	☐	☐	☐	☐	☐	☐
Russian Federation	aggregate	■	■	☐	☐	☐	☐	☐	■
Tajikistan	aggregate	☐		☐	☐	☐	☐	☐	☐
Turkmenistan	aggregate	■		☐	☐	☐	☐	■	☐
Ukraine	aggregate	■		☐	☐	☐	☐	☐	☐
Uzbekistan	aggregate	■		■	☐	☐	☐	☐	☐
Total East		15	5	14	14	7	1	11	7
Total WHO European Region		49	34	48	48	39	24	45	34

☐ = Information provided on all cases ■ = Information provided on new cases only

* Except species and drug resistance; † Except species; § Age groups different from those requested; not shown; || Sex provided for new cases only

TABLES

Table 3. Total number of tuberculosis cases notified and rates per 100 000 population, 1995-1999

Geographic area Country	1995		1996		1997		1998		1999	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
West										
Austria	1 383	17.4	1 445	18.0	1 369	17.0	1 311	16.1	1 201	14.7
Belgium	1 380	13.6	1 352	13.3	1 263	12.4	1 203	11.9	1 270	12.5
Denmark	448	8.6	484	9.3	554	10.7	529	10.0	536	10.1
Finland	662	13.0	644	12.6	573	11.1	629	12.2	566	11.0
France	8 723	14.7	7 656	12.8	6 832	11.4	6 651	11.0	6 674	11.0
Germany	12 198	15.0	11 814	14.4	11 163	13.6	10 440	12.7	9 974	12.1
Greece	939 *	9.0	945 *	9.0	767 *	7.3	1 152	10.9	952	9.0
Ireland	458	12.9	434	12.2	416	11.6	424	11.5	469	12.7
Italy	5 225	9.1	5 152	9.0	5 176	9.0	4 795	8.4	4 429	7.7
Luxembourg	32	7.9	36	8.8	38	9.2	44	10.4	42	9.9
Netherlands	1 619	10.4	1 678	10.8	1 486	9.5	1 341	8.6	1 535	9.8
Portugal	5 577	56.8	5 248	53.5	5 112	52.1	5 260	53.3	5 160	52.3
Spain †	8 764	22.1	8 331	21.0	9 347	23.5	9 111	23.0	8 393	21.2
Sweden	564	6.4	493	5.6	456	5.1	446	5.0	493	5.5
United Kingdom	6 161	10.6	6 240	10.7	6 355	10.8	6 176	10.5	6 287	10.7
Subtotal EU	54 133	14.5	51 952	13.9	50 907	13.6	49 512	13.2	47 981	12.7
Andorra	–	–	17	25.4	19	27.1	8	11.1	9	12.0
Iceland	12	4.5	11	4.1	10	3.6	17	6.2	12	4.3
Israel	398	7.1	415	7.2	422	7.2	656	11.0	520	8.5
Malta	10	2.7	29	7.9	11	3.0	16	4.2	22	5.7
Monaco	1	3.1	0	0.0	0	0.0	0	0.0	3	8.8
Norway	236	5.4	217	5.0	205	4.7	244	5.5	273	6.1
San Marino	2	8.0	0	0.0	1	3.8	0	0.0	0	0.0
Switzerland	830	11.5	764	10.5	747	10.2	749	10.3	772	10.5
Total West	55 622	14.2	53 405	13.6	52 322	13.3	51 202	13.0	49 592	12.6
Centre										
Albania	664	19.3	707	20.4	655	18.7	694	22.3	765	24.6
Bosnia-Herzegovina	2 132	61.6	2 220	63.0	2 869	77.5	3 071	83.5	3 075	80.1
Bulgaria	3 245	37.0	3 109	35.6	3 437 ‡	39.6	4 117	49.4	3 530	42.6
Croatia	2 114 ‡	47.0	2 174	48.5	2 054	46.0	2 118	47.3	1 770	39.5
Czech Republic	1 851	18.0	1 936	18.8	1 834	17.8	1 805	17.6	1 631	15.9
Hungary	4 339	42.9	4 278	42.5	4 240	42.2	3 999	39.5	3 914	38.8
Macedonia, FYR	786	36.3	724	33.2	693	31.5	620	31.0	576	28.6
Poland	15 959	41.6	15 358	39.9	13 967	36.3	13 302	34.4	12 179	31.4
Romania	23 271	101.9	24 113	105.9	23 903	105.2	25 758	114.6	26 870	119.9
Slovakia	1 537	28.7	1 499	27.9	1 298	24.1	1 282	23.8	1 218	22.6
Slovenia	525	27.0	563	28.9	481	24.7	449	22.5	438	22.0
Turkey	23 035	37.2	23 533	37.3	25 685	39.9	25 501	39.5	22 088	33.7
Yugoslavia	4 169	38.4	4 541	41.8	4 062	37.5	3 028 §	35.9 §	2 646 §	28.4 §
Total Centre	83 627	45.4	84 755	45.7	85 178	45.6	85 744	46.7	80 700	43.7
East										
Armenia	836	23.2	935	25.6	1 026	27.8	1 455	41.1	1 499	42.5
Azerbaijan	3 306	43.7	5 006	65.5	4 635 ‡	60.0	4 350	56.7	4 629	61.0
Belarus	5 092	50.2	5 619	55.5	5 985	59.2	5 595	54.2	7 339	71.4
Estonia	608	39.7	683	44.9	744	49.1	818	57.2	754	53.4
Georgia	–	–	10 641	194.7	8 446	154.1	6 302	124.6	6 546	130.8
Kazakhstan	11 095 *	64.8	13 559 *	78.8	16 109	93.0	20 623	126.4	25 060	154.0
Kyrgyzstan	3 380	71.2	4 086	84.7	5 189	105.8	5 935	127.8	6 501	139.2
Latvia	1 541	60.3	1 761	69.4	2 003	79.6	2 182	90.0	1 968	82.4
Lithuania	2 362	63.8	2 608	70.6	2 926	79.2	3 016	81.6	2 903	78.8
Moldova, Republic of	2 753	62.1	2 922	65.7	2 908	65.2	2 891	66.0	2 947	67.3
Russian Federation	96 828	65.9	110 897	75.6	119 123	81.3	121 917	82.7	135 054	91.8
Tajikistan	2 029 ‡	33.3	1 647	26.3	2 143	33.3	2 503	41.6	2 553	41.8
Turkmenistan	2 009	49.0	2 149	51.3	3 438	80.3	3 712 *	86.1	4 092	93.3
Ukraine	21 459 ‡	41.8	26 834	52.3	28 344	55.3	31 318	61.6	32 879	64.9
Uzbekistan	9 866	43.2	11 919	51.1	13 352	56.0	13 958	59.2	16 959	70.8
Total East	163 164	56.9	201 266	68.7	216 371	73.7	226 575	77.7	251 683	86.3
Total WHO European Region	302 413	35.1	339 426	39.0	353 871	40.5	363 521	41.8	381 975	43.8

* New cases only; † Until 1996 new respiratory cases only; since 1997 new and recurrent respiratory and meningial cases
‡ Source: Global Tuberculosis Control, WHO Report 2001, WHO/CDS/TB/2001.287; § Without Kosovo and Metohija

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Table 4. Tuberculosis cases by sex, 1999

Geographic area Country	Sex						Total	Sex ratio * (M/F)
	Male		Female		Unknown			
	N	(%)	N	(%)	N	(%)		
West								
Austria	763	(64)	438	(36)	0	(0)	1 201	1.7
Belgium	834	(66)	436	(34)	0	(0)	1 270	1.9
Denmark	300	(56)	236	(44)	0	(0)	536	1.3
Finland	301	(53)	265	(47)	0	(0)	566	1.1
France	3 947	(59)	2 689	(40)	38	(1)	6 674	1.5
Germany	6 138	(62)	3 836	(38)	0	(0)	9 974	1.6
Greece	668	(70)	284	(30)	0	(0)	952	2.4
Ireland	285	(61)	184	(39)	0	(0)	469	1.5
Italy	2 769	(63)	1 652	(37)	8	(0)	4 429	1.7
Luxembourg	36	(86)	6	(14)	0	(0)	42	6.0
Netherlands	896	(58)	639	(42)	0	(0)	1 535	1.4
Portugal	3 486	(68)	1 674	(32)	0	(0)	5 160	2.1
Spain †	5 481	(65)	2 626	(31)	286	(3)	8 393	2.1
Sweden	253	(51)	240	(49)	0	(0)	493	1.1
United Kingdom	3 381	(54)	2 881	(46)	25	(0)	6 287	1.2
Subtotal EU	29 538	(62)	18 086	(38)	357	(1)	47 981	1.6
Andorra	5	(56)	4	(44)	0	(0)	9	1.3
Iceland	6	(50)	6	(50)	0	(0)	12	1.0
Israel	307	(59)	213	(41)	0	(0)	520	1.4
Malta	17	(77)	5	(23)	0	(0)	22	3.4
Monaco	2	(67)	1	(33)	0	(0)	3	2.0
Norway	141	(52)	132	(48)	0	(0)	273	1.1
San Marino	–	–	–	–	–	–	0	–
Switzerland	433	(56)	339	(44)	0	(0)	772	1.3
Total West	30 449	(61)	18 786	(38)	357	(1)	49 592	1.6
Centre								
Albania	434	(57)	331	(43)	0	(0)	765	1.3
Bosnia-Herzegovina	1 820	(59)	1 255	(41)	0	(0)	3 075	1.5
Bulgaria	2 491	(71)	738	(21)	301	(9)	3 530	3.4
Croatia	1 128	(64)	642	(36)	0	(0)	1 770	1.8
Czech Republic	987	(61)	644	(39)	0	(0)	1 631	1.5
Hungary	2 762	(71)	1 152	(29)	0	(0)	3 914	2.4
Macedonia, FYR	357	(62)	219	(38)	0	(0)	576	1.6
Poland	8 159	(67)	4 020	(33)	0	(0)	12 179	2.0
Romania	18 686	(70)	8 184	(30)	0	(0)	26 870	2.3
Slovakia	742	(61)	476	(39)	0	(0)	1 218	1.6
Slovenia	272	(62)	166	(38)	0	(0)	438	1.6
Turkey	–	–	–	–	–	–	–	–
Yugoslavia ‡	1 704	(59)	903	(31)	39	(10)	2 646	1.9
Total centre	39 542	(67)	18 730	(32)	340	(1)	58 614	2.1
East								
Armenia §	1 191	(83)	243	(17)	0	(0)	1 434	4.9
Azerbaijan	3 396	(73)	1 233	(27)	0	(0)	4 629	2.8
Belarus §	5 138	(76)	1 591	(24)	0	(0)	6 729	3.2
Estonia	535	(71)	219	(29)	0	(0)	754	2.4
Georgia	4 266	(65)	2 280	(35)	0	(0)	6 546	1.9
Kazakhstan	11 954	(48)	9 100	(36)	4 006	(16)	25 060	1.3
Kyrgyzstan §	4 051	(64)	2 325	(36)	0	(0)	6 376	1.7
Latvia §	1 182	(71)	491	(29)	0	(0)	1 673	2.4
Lithuania	1 846	(64)	1 000	(34)	57	(2)	2 903	1.8
Moldova, Republic of §	1 928	(73)	720	(27)	0	(0)	2 648	2.7
Russian Federation §	94 845	(76)	29 199	(24)	0	(0)	124 044	3.2
Tajikistan	1 509	(59)	1 043	(41)	1	(0)	2 553	1.4
Turkmenistan §	2 581	(64)	1 429	(36)	0	(0)	4 010	1.8
Ukraine §	19 175	(71)	7 943	(29)	0	(0)	27 118	2.4
Uzbekistan §	8 740	(58)	6 340	(42)	0	(0)	15 080	1.4
Total East	162 337	(70)	65 156	(28)	4 064	(2)	231 557	2.5
Total WHO European Region	232 328	(68)	102 672	(30)	4 761	(1)	339 761	2.3

*Number of male cases per female case; † Respiratory and meningeal cases only; ‡ Without Kosovo and Metohija; § Provided on new cases only

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Table 5. Tuberculosis cases by age group, 1999

Geographic area Country	Age group (years)									
	0 - 4		5 - 14		15 - 24		25 - 34		35 - 44	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
West										
Austria	28	(2)	19	(2)	81	(7)	178	(15)	222	(18)
Belgium	33	(3)	30	(2)	121	(10)	199	(16)	183	(14)
Denmark	19	(4)	27	(5)	68	(13)	167	(31)	103	(19)
Finland	0	(0)	2	(0)	18	(3)	28	(5)	32	(6)
France	142	(2)	169	(3)	641	(10)	1 034	(15)	1 185	(18)
Germany	198	(2)	227	(2)	853	(9)	1 518	(15)	1 627	(16)
Greece	23	(2)	21	(2)	83	(9)	114	(12)	139	(15)
Ireland	21	(4)	18	(4)	58	(12)	75	(16)	55	(12)
Italy	74	(2)	77	(2)	389	(9)	734	(17)	614	(14)
Luxembourg	1	(2)	2	(5)	5	(12)	12	(29)	4	(10)
Netherlands	39	(3)	64	(4)	291	(19)	383	(25)	248	(16)
Portugal	53	(1)	118	(2)	556	(11)	1 121	(22)	1 102	(21)
Spain*	337	(4)	276	(3)	1 110	(13)	1 830	(22)	1 448	(17)
Sweden	2	(0)	9	(2)	64	(13)	118	(24)	69	(14)
United Kingdom	146	(2)	277	(4)	870	(14)	1 274	(20)	979	(16)
Subtotal EU	1 116	(2)	1 336	(3)	5 208	(11)	8 785	(18)	8 010	(17)
Andorra	0	(0)	0	(0)	0	(0)	2	(22)	3	(33)
Iceland	0	(0)	0	(0)	2	(17)	2	(17)	3	(25)
Israel	22	(4)	25	(5)	42	(8)	87	(17)	74	(14)
Malta	0	(0)	0	(0)	3	(14)	3	(14)	1	(5)
Monaco	0	(0)	0	(0)	0	(0)	0	(0)	1	(33)
Norway	9	(3)	16	(6)	40	(15)	58	(21)	40	(15)
San Marino	-	-	-	-	-	-	-	-	-	-
Switzerland	6	(1)	16	(2)	111	(14)	165	(21)	137	(18)
Total West	1 153	(2)	1 393	(3)	5 406	(11)	9 102	(18)	8 269	(17)
Centre										
Albania	12	(2)	36	(5)	87	(11)	134	(18)	153	(20)
Bosnia-Herzegovina	22	(1)	48	(2)	336	(11)	417	(14)	443	(14)
Bulgaria †	40	(1)	690	(21)	535	(17)	351	(11)	355	(11)
Croatia	35	(2)	88	(5)	154	(9)	177	(10)	297	(17)
Czech Republic	4	(0)	13	(1)	66	(4)	122	(7)	192	(12)
Hungary	11	(0)	12	(0)	147	(4)	376	(10)	776	(20)
Macedonia, FYR	55	(10)	67	(12)	65	(11)	86	(15)	84	(15)
Poland	34	(0)	74	(1)	671	(6)	1 190	(10)	2 594	(21)
Romania	463	(2)	873	(3)	4 194	(16)	5 024	(19)	5 761	(21)
Slovakia	6	(0)	15	(1)	50	(4)	94	(8)	167	(14)
Slovenia	3	(1)	7	(2)	26	(6)	58	(13)	101	(23)
Turkey	-	-	-	-	-	-	-	-	-	-
Yugoslavia ‡	7	(0)	17	(1)	206	(8)	351	(13)	471	(18)
Total Centre	692	(1)	1 940	(3)	6 537	(11)	8 380	(14)	11 394	(20)
East										
Armenia†	25	(2)	90	(6)	533	(37)	209	(15)	234	(16)
Azerbaijan	-	-	-	-	-	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-	-	-
Estonia	2	(0)	12	(2)	76	(10)	128	(17)	183	(24)
Georgia	137	(2)	294	(4)	1 117	(17)	1 182	(18)	1 286	(20)
Kazakhstan	601	(2)	1 859	(7)	4 588	(18)	5 190	(21)	4 056	(16)
Kyrgyzstan †	267	(4)	557	(9)	1 447	(23)	1 651	(26)	1 098	(17)
Latvia †	41	(2)	88	(5)	208	(12)	352	(21)	345	(21)
Lithuania	18	(1)	147	(5)	269	(9)	434	(15)	532	(18)
Moldova, Republic of †	33	(1)	45	(2)	581	(22)	632	(24)	617	(23)
Russian Federation †	2 080	(2) §	2 858	(2) §	20 515	(17)	30 475	(25)	29 843	(24)
Tajikistan	67	(3)	244	(10)	629	(25)	706	(28)	495	(19)
Turkmenistan †	56	(1)	711	(18)	813	(20)	1 047	(26)	779	(19)
Ukraine †	182	(1)	629	(2)	3 578	(13)	5 121	(19)	6 338	(23)
Uzbekistan†	124	(1)	2 033	(13)	3 010	(20)	4 606	(31)	2 304	(15)
Total East	3 633	(2)	9 567	(4)	37 364	(17)	51 733	(23)	48 110	(22)
Total WHO European Region	5 478	(2)	12 900	(4)	49 307	(15)	69 215	(21)	67 773	(21)

* Respiratory and meningeal cases only; † Age group provided on new cases only; ‡ Without Kosovo and Metohija; § The paediatric age groups are 0-6 and 7-14 years

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Table 5 (cont.). Tuberculosis cases by age group, 1999

		Age group (years)								Total N	Geographic area Country
45 - 54		55 - 64		> 64		Unknown		N	Country		
N	(%)	N	(%)	N	(%)	N	(%)				
West											
206	(17)	150	(12)	317	(26)	0	(0)	1 201	Austria		
190	(15)	141	(11)	373	(29)	0	(0)	1 270	Belgium		
63	(12)	37	(7)	52	(10)	0	(0)	536	Denmark		
69	(12)	69	(12)	348	(61)	0	(0)	566	Finland		
949	(14)	689	(10)	1 848	(28)	17	(0)	6 674	France		
1 342	(13)	1 489	(15)	2 720	(27)	0	(0)	9 974	Germany		
100	(11)	121	(13)	283	(30)	68	(7)	952	Greece		
57	(12)	62	(13)	122	(26)	1	(0)	469	Ireland		
501	(11)	527	(12)	1 387	(31)	126	(3)	4 429	Italy		
5	(12)	4	(10)	9	(21)	0	(0)	42	Luxembourg		
158	(10)	123	(8)	229	(15)	0	(0)	1 535	Netherlands		
717	(14)	559	(11)	934	(18)	0	(0)	5 160	Portugal		
926	(11)	694	(8)	1 429	(17)	343	(4)	8 393	Spain *		
40	(8)	30	(6)	161	(33)	0	(0)	493	Sweden		
679	(11)	698	(11)	1 356	(22)	8	(0)	6 287	United Kingdom		
6 002	(13)	5 393	(11)	11 568	(24)	563	(1)	47 981	Subtotal EU		
West											
2	(22)	0	(0)	2	(22)	0	(0)	9	Andorra		
1	(8)	1	(8)	3	(25)	0	(0)	12	Iceland		
61	(12)	56	(11)	153	(29)	0	(0)	520	Israel		
1	(5)	6	(27)	8	(36)	0	(0)	22	Malta		
1	(33)	0	(0)	1	(33)	0	(0)	3	Monaco		
26	(10)	16	(6)	67	(25)	1	(0)	273	Norway		
-	-	-	-	-	-	-	-	0	San Marino		
78	(10)	62	(8)	197	(26)	0	(0)	772	Switzerland		
6 172	(12)	5 534	(11)	11 999	(24)	564	(1)	49 592	Total West		
Centre											
114	(15)	114	(15)	115	(15)	0	(0)	765	Albania		
410	(13)	488	(16)	831	(27)	80	(3)	3 075	Bosnia-Herzegovina		
411	(13)	358	(11)	487	(15)	15	(0)	3 242	Bulgaria †		
325	(18)	244	(14)	450	(25)	0	(0)	1 770	Croatia		
302	(19)	233	(14)	697	(43)	2	(0)	1 631	Czech Republic		
1 002	(26)	645	(16)	943	(24)	2	(0)	3 914	Hungary		
86	(15)	79	(14)	54	(9)	0	(0)	576	Macedonia		
2 910	(24)	1 770	(15)	2 936	(24)	0	(0)	12 179	Poland		
5 068	(19)	3 081	(11)	2 395	(9)	11	(0)	26 870	Romania		
232	(19)	204	(17)	450	(37)	0	(0)	1 218	Slovakia		
70	(16)	48	(11)	125	(29)	0	(0)	438	Slovenia		
-	-	-	-	-	-	-	-	-	Turkey		
498	(19)	408	(15)	649	(25)	39	(1)	2 646	Yugoslavia ‡		
11 428	(20)	7 672	(13)	10 132	(17)	149	(0)	58 324	Total Centre		
East											
160	(11)	102	(7)	70	(5)	11	(1)	1 434	Armenia†		
-	-	-	-	-	-	-	-	-	Azerbaijan		
-	-	-	-	-	-	-	-	-	Belarus		
173	(23)	95	(13)	85	(11)	0	(0)	754	Estonia		
819	(13)	1 183	(18)	528	(8)	0	(0)	6 546	Georgia		
2 310	(9)	1 928	(8)	522	(2)	4 006	(16)	25 060	Kazakhstan		
580	(9)	379	(6)	397	(6)	0	(0)	6 376	Kyrgyzstan †		
293	(18)	193	(12)	153	(9)	0	(0)	1 673	Latvia †		
492	(17)	439	(15)	505	(17)	67	(2)	2 903	Lithuania		
424	(16)	192	(7)	124	(5)	0	(0)	2 648	Moldova, Republic of†		
21 151	(17)	10 169	(8)	6 953	(6)	0	(0)	124 044	Russian Federation †		
201	(8)	119	(5)	91	(4)	1	(0)	2 553	Tajikistan		
302	(8)	190	(5)	112	(3)	0	(0)	4 010	Turkmenistan †		
4 964	(18)	3 581	(13)	2 725	(10)	0	(0)	27 118	Ukraine †		
1 338	(9)	881	(6)	784	(5)	0	(0)	15 087	Uzbekistan†		
33 207	(15)	19 451	(9)	13 049	(6)	4 085	(2)	220 206	Total East		
50 807	(15)	32 657	(10)	35 180	(11)	4 798	(1)	328 122	Total WHO European Region		

* Respiratory and meningeal cases only; † Age group provided on new cases only; ‡ Without Kosovo and Metohija

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Table 6. Tuberculosis cases by geographic origin, 1999

Geographic area Country	Information provided	Geographic origin						Total N
		Born in the country / national		Foreign-born / foreign citizen		Unknown		
		N	(%)	N	(%)	N	(%)	
West								
Austria	citizenship	889	(74)	312	(26)	0	(0)	1 201
Belgium	citizenship	809	(64)	454	(36)	7	(1)	1 270
Denmark	birthplace	164	(31)	372	(69)	0	(0)	536
Finland	birthplace	517	(91)	49	(9)	0	(0)	566
France	birthplace	3 237	(49)	1 932	(29)	1 505	(23)	6 674
Germany	citizenship	6 669	(67)	3 305	(33)	0	(0)	9 974
Greece	citizenship	704	(74)	116	(12)	132	(14)	952
Ireland	birthplace	404	(86)	65	(14)	0	(0)	469
Italy	birthplace	3 346	(76)	961	(22)	122	(3)	4 429
Luxembourg	birthplace	14	(33)	28	(67)	0	(0)	42
Netherlands	citizenship	603	(39)	898	(59)	34	(2)	1 535
Portugal	birthplace	4 406	(85)	325	(6)	429	(8)	5 160
Spain *	birthplace	3 259	(39)	151	(2)	4 983	(59)	8 393
Sweden	birthplace	174	(35)	319	(65)	0	(0)	493
United Kingdom †	birthplace	2 087	(33)	2 965	(47)	1 235	(20)	6 287
Subtotal EU		27 282	(57)	12 252	(26)	8 447	(18)	47 981
Andorra	birthplace	7	(78)	2	(22)	0	(0)	9
Iceland	birthplace	4	(33)	8	(67)	0	(0)	12
Israel	birthplace	71	(14)	449	(86)	0	(0)	520
Malta	birthplace	15	(68)	7	(32)	0	(0)	22
Monaco	citizenship	1	(33)	2	(67)	0	(0)	3
Norway	birthplace	93	(34)	180	(66)	0	(0)	273
San Marino	-	-	-	-	-	-	-	0
Switzerland	birthplace	269	(35)	469	(61)	34	(4)	772
Total West		27 742	(56)	13 369	(27)	8 481	(17)	49 592
Centre								
Albania	-	-	-	-	-	-	-	-
Bosnia-Herzegovina ‡	birthplace	3 065	(100)	9	(0)	1	(0)	3 075
Bulgaria	-	-	-	-	-	-	-	-
Croatia	birthplace	963	(54)	204	(12)	603	(34)	1 770
Czech Republic	birthplace	1 496	(92)	135	(8)	0	(0)	1 631
Hungary	birthplace	3 832	(98)	64	(2)	18	(0)	3 914
Macedonia, FYR §	-	-	-	-	-	-	-	-
Poland §	-	-	-	-	-	-	-	-
Romania	citizenship	26 868	(100)	2	(0)	0	(0)	26 870
Slovakia	birthplace	1 214	(100)	4	(0)	0	(0)	1 218
Slovenia	birthplace	335	(76)	103	(24)	0	(0)	438
Turkey §	-	-	-	-	-	-	-	-
Yugoslavia	-	-	-	-	-	-	-	-
Total Centre		37 773	(97)	521	(1)	622	(2)	38 916
East								
Armenia	-	-	-	-	-	-	-	-
Azerbaijan §	-	-	-	-	-	-	-	-
Belarus §	-	-	-	-	-	-	-	-
Estonia	birthplace	587	(78)	167	(22)	0	(0)	754
Georgia	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-
Kyrgyzstan §	-	-	-	-	-	-	-	-
Latvia	birthplace	1 614	(96)	39	(2)	20	(1)	1 673
Lithuania	birthplace	2 699	(93)	146	(5)	58	(2)	2 903
Moldova, Republic of	citizenship	2 900	(98)	47	(2)	0	(0)	2 947
Russian Federation ¶	citizenship	123 903	(100)	141	(0)	0	(0)	124 044
Tajikistan	-	-	-	-	-	-	-	-
Turkmenistan §	-	-	-	-	-	-	-	-
Ukraine §	-	-	-	-	-	-	-	-
Uzbekistan §	-	-	-	-	-	-	-	-
Total East		131 467	(100)	540	(0)	78	(0)	132 321
Total WHO European Region		197 218	(89)	14 430	(7)	9 181	(4)	220 829

* Respiratory and meningial cases only; † Except Scotland; ‡ Foreigners not included in TB notifications in Republic Srpska; § Foreigners not included in TB notifications (see Table 2); || Without Kosovo and Metohija; ¶ On new cases only;

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**Table 7. Foreign tuberculosis cases by continent of origin, 1999
(21 countries providing individual data)**

Geographic area Country	Information provided	Continent of origin										Total N
		Europe *		Asia*		Africa		America or Oceania		Unknown		
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
West EU												
Austria	citizenship	247	(79)	34	(11)	29	(9)	2	(1)	0	(0)	312
Belgium	citizenship	155	(34)	53	(12)	228	(50)	18	(4)	0	(0)	454
Denmark	birthplace	55	(15)	96	(26)	208	(56)	12	(3)	0	(0)	371
Finland	birthplace	10	(20)	11	(22)	18	(37)	0	(0)	10	(20)	49
Ireland	birthplace	28	(43)	23	(35)	13	(20)	0	(0)	1	(2)	65
Italy	birthplace	163	(17)	186	(19)	492	(51)	82	(9)	38	(4)	961
Luxembourg	birthplace	26	(93)	2	(7)	0	(0)	0	(0)	0	(0)	28
Netherlands	citizenship	135	(15)	228	(25)	492	(55)	43	(5)	0	(0)	898
Sweden	birthplace	95	(30)	77	(24)	131	(41)	13	(4)	3	(1)	319
United Kingdom †	birthplace	188	(6)	1 533	(52)	771	(26)	74	(2)	399	(13)	2 965
West other												
Iceland	birthplace	0	(0)	5	(63)	2	(25)	1	(13)	0	(0)	8
Malta	birthplace	3	(43)	4	(57)	0	(0)	0	(0)	0	(0)	7
Norway	birthplace	31	(17)	62	(34)	85	(47)	2	(1)	0	(0)	180
Switzerland	birthplace	244	(52)	78	(17)	125	(27)	22	(5)	0	(0)	469
Centre												
Croatia ‡	birthplace	202	(99)	1	(0)	0	(0)	0	(0)	1	(0)	204
Czech Republic	birthplace	98	(73)	32	(24)	4	(3)	1	(1)	0	(0)	135
Hungary	birthplace	44	(69)	10	(16)	9	(14)	0	(0)	1	(2)	64
Romania	birthplace	0	(0)	2	(100)	0	(0)	0	(0)	0	(0)	2
Slovakia	birthplace	1	(25)	3	(75)	0	(0)	0	(0)	0	(0)	4
Slovenia	birthplace	101	(98)	1	(1)	1	(1)	0	(0)	0	(0)	103
East												
Estonia	birthplace	166	(99)	1	(1)	0	(0)	0	(0)	0	(0)	167
Total		1 992	(26)	2 442	(31)	2 608	(34)	270	(3)	453	(6)	7 765

* Europe corresponds to the WHO European Region. Armenia, Azerbaijan, Georgia, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan and Uzbekistan included in Europe and not in Asia

† Except Scotland; ‡ Information on geographic origin missing for 603 cases (34%)

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Table 8. Tuberculosis cases by previous anti-TB treatment status, 1999

Geographic area Country	Previous anti-TB treatment status *						Total N
	Never treated		Previously treated		Unknown		
	N	(%)	N	(%)	N	(%)	
West							
Austria	1 085	(90)	25	(2)	91	(8)	1 201
Belgium †	983	(77)	146	(11)	141	(11)	1 270
Denmark †	502	(94)	34	(6)	0	(0)	536
Finland	473	(84)	34	(6)	59	(10)	566
France †	4 196	(63)	622	(9)	1 856	(28)	6 674
Germany	–	–	–	–	–	–	–
Greece	897	(94)	55	(6)	0	(0)	952
Ireland	158	(34)	23	(5)	288	(61)	469
Italy †	1 709	(39)	320	(7)	2 400	(54)	4 429
Luxembourg	38	(90)	4	(10)	0	(0)	42
Netherlands	1 459	(95)	54	(4)	22	(1)	1 535
Portugal	4 599	(89)	561	(11)	0	(0)	5 160
Spain ‡	6 177	(74)	387	(5)	1 829	(22)	8 393
Sweden	456	(92)	22	(4)	15	(3)	493
United Kingdom	4 287	(68)	463	(7)	1 537	(24)	6 287
Subtotal EU	27 019	(71)	2 750	(7)	8 238	(22)	38 007
Andorra	9	(100)	0	(0)	0	(0)	9
Iceland	8	(67)	4	(33)	0	(0)	12
Israel †	481	(93)	39	(8)	0	(0)	520
Malta	22	(100)	0	(0)	0	(0)	22
Monaco	3	(100)	0	(0)	0	(0)	3
Norway	212	(78)	61	(22)	0	(0)	273
San Marino	–	–	–	–	–	–	0
Switzerland	534	(69)	79	(10)	159	(21)	772
Total West	28 288	(71)	2 933	(7)	8 397	(21)	39 618
Centre							
Albania	722	(94)	43	(6)	0	(0)	765
Bosnia–Herzegovina	2 712	(88)	363	(12)	0	(0)	3 075
Bulgaria	3 242	(92)	288	(8)	0	(0)	3 530
Croatia	1 622	(92)	129	(7)	19	(1)	1 770
Czech Republic	1 431	(88)	61	(4)	139	(9)	1 631
Hungary	3 208	(82)	175	(4)	531	(14)	3 914
Macedonia, FYR	532	(92)	44	(8)	0	(0)	576
Poland	10 709	(88)	1 470	(12)	0	(0)	12 179
Romania	23 320	(87)	3 544	(13)	6	(0)	26 870
Slovakia	970	(80)	218	(18)	30	(2)	1 218
Slovenia	391	(89)	47	(11)	0	(0)	438
Turkey	18 752	(85)	3 336	(15)	0	(0)	22 088
Yugoslavia §	2 399	(91)	247	(9)	0	(0)	2 646
Total Centre	70 010	(87)	9 965	(12)	725	(1)	80 700
East							
Armenia	1 434	(96)	65	(4)	0	(0)	1 499
Azerbaijan	4 559	(98)	70	(2)	0	(0)	4 629
Belarus	6 729	(92)	610	(8)	0	(0)	7 339
Estonia	642	(85)	112	(15)	0	(0)	754
Georgia	4 478	(68)	2 068	(32)	0	(0)	6 546
Kazakhstan	20 912	(83)	4 148	(17)	0	(0)	25 060
Kyrgyzstan	6 376	(98)	125	(2)	0	(0)	6 501
Latvia	1 673	(85)	295	(15)	0	(0)	1 968
Lithuania	2 558	(88)	345	(12)	0	(0)	2 903
Moldova, Republic of	2 648	(90)	299	(10)	0	(0)	2 947
Russian Federation	124 044	(92)	11 010	(8)	0	(0)	135 054
Tajikistan	–	–	–	–	–	–	–
Turkmenistan	4 010	(98)	82	(2)	0	(0)	4 092
Ukraine	27 118	(82)	5 761	(18)	0	(0)	32 879
Uzbekistan	15 080	(89)	1 879	(11)	0	(0)	16 959
Total East	222 261	(89)	26 869	(11)	0	(0)	249 130
Total WHO European Region	320 559	(87)	39 767	(11)	9 122	(2)	369 448

* See technical note; † Information on previous anti-TB treatment not available; cases classified according to previous history of TB

‡ Respiratory and meningeal cases only; § Without Kosovo and Metohija

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Table 9. Tuberculosis cases by site of disease, 1999

Geographic area Country	Classification provided *	Site of disease						Total N
		Pulmonary / Respiratory		Extra-pulmonary / Extra-respiratory		Unknown		
		N	(%)	N	(%)	N	(%)	
West								
Austria	pulm	984	(82)	217	(18)	0	(0)	1 201
Belgium	pulm	957	(75)	311	(24)	2	(0)	1 270
Denmark	pulm	345	(64)	191	(36)	0	(0)	536
Finland	pulm	382	(67)	184	(33)	0	(0)	566
France	pulm	4 780	(72)	1 760	(26)	134	(2)	6 674
Germany	resp	8 297	(83)	1 677	(17)	0	(0)	9 974
Greece	pulm	827	(87)	125	(13)	0	(0)	952
Ireland	pulm	329	(70)	110	(23)	30	(6)	469
Italy	pulm	3 289	(74)	1 125	(25)	15	(0)	4 429
Luxembourg	pulm	41	(98)	1	(2)	0	(0)	42
Netherlands	pulm	959	(62)	576	(38)	0	(0)	1 535
Portugal	pulm	3 192	(62)	1 498	(29)	470	(9)	5 160
Spain	resp	6 481	(77)	83 †	(1) †	1 829	(22)	8 393
Sweden	pulm	343	(70)	150	(30)	0	(0)	493
United Kingdom	pulm ‡	3 758	(60)	2 245	(36)	284	(5)	6 287
Subtotal EU		34 964	(73)	10 253	(21)	2 764	(6)	47 981
Andorra	pulm	6	(67)	3	(33)	0	(0)	9
Iceland	pulm	9	(75)	3	(25)	0	(0)	12
Israel	pulm	369	(71)	151	(29)	0	(0)	520
Malta	pulm	19	(86)	3	(14)	0	(0)	22
Monaco	pulm	2	(67)	1	(33)	0	(0)	3
Norway	pulm	163	(60)	110	(40)	0	(0)	273
San Marino	-	-	-	-	-	-	-	0
Switzerland	pulm	565	(73)	207	(27)	0	(0)	772
Total West		36 097	(73)	10 731	(22)	2 764	(6)	49 592
Centre								
Albania	pulm	504	(66)	261	(34)	0	(0)	765
Bosnia-Herzegovina	pulm	2 749	(89)	326	(11)	0	(0)	3 075
Bulgaria	resp	3 265	(92)	265	(8)	0	(0)	3 530
Croatia	pulm	1 565	(88)	205	(12)	0	(0)	1 770
Czech Republic	resp	1 330	(82)	301	(18)	0	(0)	1 631
Hungary	pulm	3 682	(94)	232	(6)	0	(0)	3 914
Macedonia, FYR	resp	489	(85)	87	(15)	0	(0)	576
Poland	resp	11 641	(96)	538	(4)	0	(0)	12 179
Romania	pulm	23 149	(86)	3 718	(14)	3	(0)	26 870
Slovakia	pulm	993	(82)	225	(18)	0	(0)	1 218
Slovenia	pulm	362	(83)	75	(17)	1	(0)	438
Turkey §	resp	18 314	(83)	3 774	(17)	0	(0)	22 088
Yugoslavia	resp	2 517	(95)	129	(5)	0	(0)	2 646
Total Centre		70 560	(87)	10 136	(13)	4	(0)	80 700
East								
Armenia	pulm	1 232	(82)	267	(18)	0	(0)	1 499
Azerbaijan	resp	3 693	(80)	936	(20)	0	(0)	4 629
Belarus	resp	6 869	(94)	470	(6)	0	(0)	7 339
Estonia	pulm	687	(91)	67	(9)	0	(0)	754
Georgia	pulm	4 827	(74)	1 719	(26)	0	(0)	6 546
Kazakhstan	resp	22 560	(90)	2 500	(10)	0	(0)	25 060
Kyrgyzstan §	resp	5 818	(91)	558	(9)	0	(0)	6 376
Latvia	resp	1 867	(95)	101	(5)	0	(0)	1 968
Lithuania	pulm	2 273	(78)	630	(22)	0	(0)	2 903
Moldova, Republic of	resp	2 530	(86)	417	(15)	0	(0)	2 947
Russian Federation §	resp	118 709	(96)	5 335	(4)	0	(0)	124 044
Tajikistan	resp	-	-	-	-	-	-	-
Turkmenistan	resp	3 889	(95)	203	(5)	0	(0)	4 092
Ukraine	resp	31 187	(95)	1 692	(5)	0	(0)	32 879
Uzbekistan	resp	15 195	(90)	1 764	(10)	0	(0)	16 959
Total East		221 336	(94)	16 659	(7)	0	(0)	237 995
Total WHO European Region		327 993	(89)	37 526	(10)	2 768	(1)	368 287

* pulm= pulmonary; resp=respiratory (see technical note); † Meningeal cases only;

‡ Respiratory classification for Scotland; § Information provided on new cases only; || Without Kosovo and Metohija

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**Table 10. Sites of disease* among tuberculosis cases, by age group, 1999,
(15 countries providing individual data†)**

Site of disease	Age group (years)							
	0-14 (N=2 224)		15-44 (N=23 991)		45 and over (N=22 293)		Total ‡ (N=48 656)	
	N	(%)	N	(%)	N	(%)	N	(%)
Lungs/tracheobronchial tree	1 638	(73.7)	19 532	(81.4)	18 508	(83.0)	39 678	(81.5)
Extrapulmonary								
Pleura	204	(9.2)	2 675	(11.2)	1 682	(7.5)	4 561	(9.4)
Intrathoracic lymphnodes	147	(6.6)	332	(1.4)	211	(0.9)	690	(1.4)
Extrathoracic lymphnodes	142	(6.4)	1 024	(4.3)	684	(3.1)	1 850	(3.8)
Spine	17	(0.8)	158	(0.7)	199	(0.9)	374	(0.8)
Bone/joint other than spine	31	(1.4)	150	(0.6)	246	(1.1)	427	(0.9)
Meninges	96	(4.3)	120	(0.5)	100	(0.4)	316	(0.6)
CNS § other than meninges	3	(0.1)	34	(0.1)	16	(0.1)	53	(0.1)
Genito-urinary	10	(0.4)	242	(1.0)	585	(2.6)	837	(1.7)
Peritoneal / digestive	12	(0.5)	186	(0.8)	139	(0.6)	337	(0.7)
Disseminated	18	(0.8)	141	(0.6)	154	(0.7)	313	(0.6)
Other	54	(2.4)	350	(1.5)	520	(2.3)	924	(1.9)
Unknown	38	(1.7)	150	(0.6)	117	(0.5)	305	(0.6)

* The Table shows numbers of sites; total column percentages exceed 100% because in some cases one major and one minor site of disease were reported (see technical note).

† Austria, Belgium, Croatia, Estonia, Iceland, Hungary, Italy, Luxembourg, Malta, Norway, Romania, Slovakia, Slovenia, Switzerland, United Kingdom (except Scotland)

‡ Includes 148 cases with unknown age;

§ CNS = Central Nervous System

|| Includes miliary TB, TB of more than two organ systems or isolate of *M. tuberculosis* complex from the blood

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Table 11. Tuberculosis cases by culture result, 1999

Geographic origin Country	Culture routinely performed	Criteria for "definite" TB case*	Culture result				Total
			Positive		Negative / unknown / not done		
			N	(%)	N	(%)	
West							
Austria	yes	C & S	756	(63)	445	(37)	1 201
Belgium	yes	C & S	926	(73)	344	(27)	1 270
Denmark	yes	C	428	(80)	108	(20)	536
Finland	yes	C	477	(84)	89	(16)	566
France	yes	C	1 683	(25)	4 991	(75)	6 674
Germany †	yes	C & S	3 963	(67)	1 982	(33)	5 945
Greece	in some areas	C & S	396	(42)	556	(58)	952
Ireland	yes	C	260	(55)	209	(45)	469
Italy ‡	in some areas	C & S	2 164	(49)	2 265	(51)	4 429
Luxembourg	yes	C	42	(100)	0	(0)	42
Netherlands	yes	C	943	(61)	592	(39)	1 535
Portugal	yes	C	1 624	(31)	3 536	(69)	5 160
Spain §	yes	C & S	3 817	(45)	4 576	(55)	8 393
Sweden	yes	C	412	(84)	81	(16)	493
United Kingdom	yes	C	3 400	(54)	2 887	(46)	6 287
Subtotal EU			21 291	(48)	22 661	(52)	43 952
Andorra	yes	C	6	(67)	3	(33)	9
Iceland	yes	C	8	(67)	4	(33)	12
Israel	yes	C	331	(64)	189	(36)	520
Malta	yes	C	13	(59)	9	(41)	22
Monaco	yes	C	2	(67)	1	(33)	3
Norway	yes	C	186	(68)	87	(32)	273
San Marino	yes	C	–	–	–	–	0
Switzerland	yes	C	615	(80)	157	(20)	772
Total West			22 452	(49)	23 111	(51)	45 563
Centre							
Albania	no	C	215	(28)	550	(72)	765
Bosnia-Herzegovina	in some areas	C & S	1 748	(57)	1 327	(43)	3 075
Bulgaria	in some areas	C	–	–	–	–	–
Croatia †	yes	C	866	(70)	368	(30)	1 234
Czech Republic	yes	C	830	(51)	801	(49)	1 631
Hungary	yes	C	1 206	(31)	2 708	(69)	3 914
Macedonia, FYR	in some areas	C & S	–	–	–	–	–
Poland	yes	C	6 700	(55)	5 479	(45)	12 179
Romania	in some areas	C & S	13 495	(50)	13 375	(50)	26 870
Slovakia	yes	C	645	(53)	573	(47)	1 218
Slovenia	yes	C	350	(80)	88	(20)	438
Turkey	no	C & S	–	–	–	–	–
Yugoslavia	yes	C & S	–	–	–	–	–
Total Centre			26 055	(51)	25 269	(49)	51 324
East							
Armenia	in some areas	C & S	576	(38)	923	(62)	1 499
Azerbaijan	in some areas	C & S	210	(5)	4 419	(95)	4 629
Belarus	yes	C & S	–	–	–	–	–
Estonia	yes	C	528	(70)	226	(30)	754
Georgia	no	C & S	1 147	(18)	5 399	(82)	6 546
Kazakhstan	in some areas	C & S	–	–	–	–	–
Kyrgyzstan	in some areas	C & S	–	–	–	–	–
Latvia	yes	C	1 227	(62)	741	(38)	1 968
Lithuania	yes	C	1 420	(49)	1 483	(51)	2 903
Moldova, Republic of	in some areas	C & S	1 026	(35)	1 921	(65)	2 947
Russian Federation	yes	C & S	–	–	–	–	–
Tajikistan	in some areas	C & S	–	–	–	–	–
Turkmenistan	in some areas	C & S	–	–	–	–	–
Ukraine	in some areas	C & S	–	–	–	–	–
Uzbekistan	yes	C & S	–	–	–	–	–
Total East			6 134	(29)	15 112	(71)	21 246
Total WHO European Region			54 641	(46)	63 492	(54)	118 133

* C = culture positive; C & S = culture or sputum smear positive (see technical note); † Results from a national sample of TB cases notified;
‡ Available only on pulmonary cases (n= 3 289); § Respiratory and meningeal cases only

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**Table 12. Tuberculosis cases by culture result and site of disease, 1999
(countries providing individual data)**

Country	Culture done						Culture not done		Unknown		Total N
	Positive		Negative		Result unknown		N	(%)	N	(%)	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
a) Pulmonary cases											
West											
Austria	651	(66)	0	(0)	0	(0)	333	(34)	0	(0)	984
Belgium	760	(79)	104	(11)	11	(1)	0	(0)	82	(9)	957
Denmark	286	(83)	59	(17)	0	(0)	0	(0)	0	(0)	345
Finland	345	(90)	0	(0)	0	(0)	0	(0)	37	(10)	382
France	1 500	(31)	270	(6)	1 508	(32)	0	(0)	1 502	(31)	4 780
Iceland	7	(78)	2	(22)	0	(0)	0	(0)	0	(0)	9
Ireland	202	(61)	85	(26)	0	(0)	6	(2)	36	(11)	329
Italy	2 164	(66)	260	(8)	322	(10)	0	(0)	543	(17)	3 289
Luxembourg	41	(100)	0	(0)	0	(0)	0	(0)	0	(0)	41
Malta	12	(63)	4	(21)	0	(0)	3	(16)	0	(0)	19
Netherlands	613	(64)	24	(3)	3	(0)	15	(2)	304	(32)	959
Norway	106	(65)	33	(20)	0	(0)	0	(0)	24	(15)	163
Sweden	283	(83)	44	(13)	0	(0)	6	(2)	10	(3)	343
Switzerland	447	(79)	0	(0)	0	(0)	92	(16)	26	(5)	565
United Kingdom *	2 026	(60)	107	(3)	371	(11)	89	(3)	787	(23)	3 380
Total West	9 443	(57)	992	(6)	2 215	(13)	544	(3)	3 351	(20)	16 545
Centre											
Croatia †	805	(74)	274	(25)	0	(0)	9	(1)	4	(0)	1 092
Czech Republic ‡	830	(62)	396	(30)	74	(6)	4	(0)	26	(2)	1 330
Hungary	1 183	(32)	1 477	(40)	120	(3)	545	(15)	357	(10)	3 682
Romania	13 210	(57)	4 258	(18)	5 271	(23)	410	(2)	0	(0)	23 149
Slovakia	591	(60)	388	(39)	0	(0)	4	(0)	10	(1)	993
Slovenia	312	(86)	32	(9)	0	(0)	15	(4)	3	(1)	362
Total Centre	16 931	(55)	6 825	(22)	5 465	(18)	987	(3)	400	(1)	30 608
East											
Estonia	507	(74)	179	26	0	0	1	0	0	0	687
Total pulmonary cases	26 881	(57)	7 817	(17)	7 680	(16)	1 531	(3)	3 751	(8)	47 153
b) Extrapulmonary cases											
West											
Austria	105	(48)	0	(0)	0	(0)	112	(52)	0	(0)	217
Belgium	166	(53)	22	(7)	3	(1)	0	(0)	120	(39)	311
Denmark	142	(74)	49	(26)	0	(0)	0	(0)	0	(0)	191
Finland	132	(72)	0	(0)	0	(0)	0	(0)	52	(28)	184
France	169	(10)	326	(19)	520	(30)	0	(0)	745	(42)	1 760
Iceland	1	(33)	1	(33)	0	(0)	0	(0)	1	(33)	3
Ireland	57	(52)	27	(25)	0	(0)	6	(5)	20	(18)	110
Italy §	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	1
Malta	1	(33)	2	(67)	0	(0)	0	(0)	0	(0)	3
Netherlands	330	(57)	24	(4)	2	(0)	16	(3)	204	(35)	576
Norway	80	(73)	12	(11)	0	(0)	0	(0)	18	(16)	110
Sweden	129	(86)	13	(9)	0	(0)	5	(3)	3	(2)	150
Switzerland	168	(81)	0	(0)	0	(0)	23	(11)	16	(8)	207
United Kingdom *	985	(46)	74	(3)	356	(17)	65	(3)	647	(30)	2 127
Total West	2466	(41)	550	(9)	881	(15)	227	(4)	1 826	(31)	5 950
Centre											
Croatia †	61	(43)	75	(53)	1	(1)	5	(4)	0	(0)	142
Czech Republic ‡	0	(0)	260	(86)	0	(0)	0	(0)	41	(14)	301
Hungary	23	(10)	69	(30)	7	(3)	115	(50)	18	(8)	232
Romania	282	(8)	1 098	(30)	909	(24)	1 429	(38)	0	(0)	3 718
Slovakia	54	(24)	150	(67)	0	(0)	11	(5)	10	(4)	225
Slovenia	38	(51)	23	(31)	0	(0)	12	(16)	2	(3)	75
Total Centre	458	(10)	1 675	(36)	917	(20)	1 572	(33)	71	(2)	4 693
East											
Estonia	21	(31)	46	(69)	0	(0)	0	(0)	0	(0)	67
Total extrapulmonary cases	2 945	(27)	2 271	(21)	1 798	(17)	1 799	(17)	1 897	(18)	10 710

* Without Scotland; † Results from a national sample of TB cases notified; ‡ Respiratory classification; § Culture results not available for extra-pulmonary cases

TABLES

Table 13. Tuberculosis cases by *M. tuberculosis* complex species, 1999

Geographic area Country	<i>M. tuberculosis</i> complex species								Total*
	<i>M. tuberculosis</i>		<i>M. bovis</i>		<i>M. africanum</i>		Unknown / not done		
	N	(%)	N	(%)	N	(%)	N	(%)	
West									
Austria	372	(49.2)	–	(0.1)	0	(0.0)	383	(50.7)	756
Belgium	865	(93.4)	5	(0.5)	2	(0.2)	54	(5.8)	926
Denmark †	428	(100.0)	0	–	0	–	0	–	428
Finland	477	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	477
Germany ‡	3 807	(95.6)	51	(1.3)	28	(0.7)	97	(2.4)	3 983
Greece	184	(46.6)	0	(0.0)	0	(0.0)	211	(53.4)	395
Ireland	242	(93.1)	11	(4.2)	0	(0.0)	7	(2.7)	260
Italy	1 420	(65.6)	2	(0.1)	6	(0.3)	736	(34.0)	2 164
Luxembourg	33	(78.6)	0	(0.0)	0	(0.0)	9	(21.4)	42
Netherlands	930	(98.6)	12	(1.3)	1	(0.1)	0	(0.0)	943
Sweden	410	(99.5)	2	(0.5)	0	(0.0)	0	(0.0)	412
United Kingdom	3 168	(91.1)	34	(1.0)	14	(0.4)	261	(7.5)	3 477
Subtotal EU	12 336	(86.5)	118	(0.8)	51	(0.4)	1 758	(12.3)	14 263
Andorra	5	(83.3)	0	(0.0)	0	(0.0)	1	(16.7)	6
Iceland	8	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	8
Norway	185	(99.5)	1	(0.5)	0	(0.0)	0	(0.0)	186
Switzerland	533	(86.7)	11	(1.8)	3	(0.5)	68	(11.1)	615
Total West	13 067	(86.7)	130	(0.9)	54	(0.4)	1 827	(12.1)	15 078
Centre									
Bosnia-Herzegovina	1 748	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	1 748
Czech Republic	700	(84.3)	1	(0.1)	0	(0.0)	129	(15.5)	830
Hungary	1 181	(97.9)	0	(0.0)	0	(0.0)	25	(2.1)	1 206
Macedonia, FYR	133	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	133
Romania	12 331	(91.5)	0	(0.0)	0	(0.0)	1 148	(8.5)	13 479
Slovakia	579	(89.8)	0	(0.0)	0	(0.0)	66	(10.2)	645
Slovenia	349	(99.7)	0	(0.0)	0	(0.0)	1	(0.3)	350
Total Centre	17 021	(92.6)	1	(0.0)	0	(0.0)	1 369	(7.4)	18 391
East §									
Latvia	1 015	(89.3)	0	(0.0)	0	(0.0)	122	(10.7)	1 137
Total	31 103	(89.9)	131	(0.4)	54	(0.2)	3 318	(9.6)	34 606

* May differ from Total in Table 11 due to later data collection;

† *M. bovis* and *M. africanum* not notifiable until 2000;

‡ National sample of notified TB cases;

§ Data collected only from Baltic countries

TABLES

Table 14. Pulmonary/respiratory tuberculosis cases, by sputum smear result, 1999

Geographic area Country	Classification by site*	Routine use of sputum smear	Sputum smear result				Total N
			Positive		Negative / unknown / not done		
			N	(%)	N	(%)	
West							
Austria	pulm	yes	352	(36)	632	(64)	984
Belgium	pulm	yes	417	(44)	540	(56)	957
Denmark	pulm	yes	113	(33)	232	(67)	345
Finland	pulm	yes	180	(47)	202	(53)	382
France	pulm	yes	2 631	(55)	2 149	(45)	4 780
Germany	resp	yes	2 954	(36)	5 343	(64)	8 297
Greece	pulm	some areas	412	(50)	415	(50)	827
Ireland	pulm	yes	124	(38)	205	(62)	329
Italy	pulm	some areas	1 637	(50)	1 652	(50)	3 289
Luxembourg	pulm	yes	8	(20)	33	(80)	41
Netherlands	pulm	yes	345	(36)	614	(64)	959
Portugal	pulm	yes	1 801	(56)	1 391	(44)	3 192
Spain	resp	yes	3 179	(49)	3 302	(51)	6 481
Sweden	pulm	yes	129	(38)	214	(62)	343
United Kingdom	pulm †	yes	1 052	(28)	2 706	(72)	3 758
Subtotal EU			15 334	(44)	19 630	(56)	34 964
Andorra	pulm	yes	3	(50)	3	(50)	6
Iceland	pulm	yes	4	(44)	5	(56)	9
Israel	pulm	yes	190	(51)	179	(49)	369
Malta	pulm	yes	5	(26)	14	(74)	19
Monaco	pulm	yes	2	(100)	0	(0)	2
Norway	pulm	yes	34	(21)	129	(79)	163
San Marino	-	yes	-	-	-	-	0
Switzerland	pulm	yes	130	(23)	435	(77)	565
Total West			15 702	(43)	20 395	(57)	36 097
Centre							
Albania	pulm	some areas	184	(37)	320	(63)	504
Bosnia-Herzegovina	pulm	some areas	931	(34)	1 818	(66)	2 749
Bulgaria	resp	yes	1 985	(61)	1 280	(39)	3 265
Croatia ‡	pulm	yes	541	(50)	551	(50)	1 092
Czech Republic	resp	yes	410	(31)	920	(69)	1 330
Hungary	pulm	yes	826	(22)	2 856	(78)	3 682
Macedonia, FYR	resp	some areas	-	-	-	-	-
Poland	resp	yes	4 636	(40)	7 005	(60)	11 641
Romania	pulm	yes	12 788	(55)	10 361	(45)	23 149
Slovakia	pulm	yes	307	(31)	686	(69)	993
Slovenia	pulm	yes	191	(53)	171	(47)	362
Turkey §	resp	no	7 460	(41)	10 854	(59)	18 314
Yugoslavia	resp	yes	-	-	-	-	-
Total Centre			30 259	(45)	36 822	(55)	67 081
East							
Armenia	pulm	yes	641	(52)	591	(48)	1 232
Azerbaijan	resp	yes	763	(21)	2 930	(79)	3 693
Belarus	resp	yes	-	-	-	-	-
Estonia	pulm	yes	305	(44)	382	(56)	687
Georgia	pulm	yes	1 399	(29)	3 428	(71)	4 827
Kazakhstan	resp	yes	9 801	(43)	12 759	(57)	22 560
Kyrgyzstan §	resp	yes	1 642	(28)	4 176	(72)	5 818
Latvia	resp	yes	780	(42)	1 087	(58)	1 867
Lithuania	pulm	yes	984	(43)	1 289	(57)	2 273
Moldova, Republic of	resp	no	764	(30)	1 766	(70)	2 530
Russian Federation	resp	yes	-	-	-	-	-
Tajikistan	resp	some areas	-	-	-	-	-
Turkmenistan §	resp	yes	992	(26)	2 897	(74)	3 889
Ukraine	resp	yes	-	-	-	-	-
Uzbekistan	resp	yes	4 096	(27)	11 099	(73)	15 195
Total East			22 167	(34)	42 404	(66)	64 571
Total WHO European Region			68 128	(41)	99 621	(59)	167 749

* pulm= pulmonary; resp=respiratory (see technical note); † Respiratory classification for Scotland; ‡ Results from a national sample of TB cases notified § Provided on new cases only

TABLES

**Table 15. Laboratory practices for drug susceptibility testing (DST), 1999
(34 countries which provided DST results in 1999 *)**

Geographic area Country	No. labs. performing DST	DST methods used				Proficiency testing				
		proportion (non radiometric)	proportion (radiometric)	resistance ratio	absolute concentr.	National		International		
						No. labs		% agreement of results for:		
							INH †	RMP ‡		
West										
Andorra	1	–	–	–	–	na	–	na	–	–
Austria	9	yes	yes	no	no	yes	2	no	–	–
Denmark	1	no	yes	no	no	yes	1	yes	85	100
Finland	2	yes	yes	no	no	yes	1	yes ‡	100	100
France	20	yes	yes	no	no	no	–	yes	100	100
Germany	80	yes	yes	no	no	yes	60	yes	100	90
Greece	3	yes	yes	no	no	no	–	no	–	–
Iceland §	0	–	–	–	–	–	–	–	–	–
Ireland	8	yes	yes	yes	yes	yes	8	na	–	–
Israel	2	no	yes	yes	no	yes	2	yes	100	100
Malta	0	–	–	–	–	–	–	–	–	–
Netherlands	15	yes	no	no	no	no	–	yes	100	100
Norway	3	yes	yes	no	no	no	–	yes ‡	100	100
Spain	30	yes	no	no	no	na	–	no	–	–
Sweden	5	yes	yes	no	no	yes	5	yes	–	–
Switzerland	42	yes	yes	no	no	yes	12	yes	99	100
United Kingdom	7	no	yes	yes	yes	yes	6	yes	100	100
Centre										
Albania	1	yes	no	no	no	no	–	yes	65	90
Bosnia–Herzegovina	7	yes	yes	no	no	yes	7	no	–	–
Croatia #	–	–	–	–	–	–	–	–	–	–
Czech Republic	14	yes	yes	no	no	yes	14	yes	100	100
Hungary	14	yes	yes	no	yes	no	–	yes	100	100
Romania	47	no	no	no	yes	no	–	yes ¶	–	–
Slovakia	6	yes	yes	no	no	yes	6	yes	100	99
Slovenia	1	yes	no	no	no	yes	1	yes	100	100
Yugoslavia	12	yes	no	no	no	no	–	no	–	–
East										
Armenia	1	yes	no	no	no	no	–	no	–	–
Estonia	2	–	–	–	–	yes	2	yes	100	100
Kazakhstan	18	no	no	no	yes	no	–	na	–	–
Kyrgyzstan	1	yes	no	no	no	yes	1	no	–	–
Latvia	1	no	yes	no	yes	yes	1	yes	90	100
Lithuania	8	yes	no	no	no	yes	8	yes	100	100
Russian Federation	140	no	no	no	yes	no	–	no	–	–
Ukraine	27	yes	no	no	yes	yes	1	no	–	–

na = not available

* For 7 countries, laboratory practices were provided but no DST results (Belgium, Italy, Bulgaria, Macedonia, Poland, Azerbaijan & Tadjikistan)

† INH = isoniazid; RMP = rifampicin;

‡ last done in 1998

§ Done in Denmark;

|| Done in the United Kingdom;

¶ last done in 1995

Information not available

TABLES

Table 16. Diagnostic practices and type of drug resistance surveillance, 1999

Geographic area Country	Culture performed routinely	DST * performed routinely	Geographic Coverage	Source of cases included	Culture positive cases	Cases with DST result	
						N	%
Group A: culture and DST * performed routinely; national data on notified TB cases							
West							
Andorra	yes	yes	national	TB notifications	6	6	(100)
Austria	yes	yes	national	TB notifications	756	756	(100)
Denmark	yes	yes	national	TB notifications	428	416	(97)
Finland	yes	yes	national	TB notifications	477	450	(94)
Germany	yes	yes	national †	TB notifications	4 023	3 356	(83)
Iceland	yes	yes	national	TB notifications	8	8	(100)
Ireland	yes	yes	national	TB notifications	260	260	(100)
Israel	yes	yes	national	TB notifications	331	331	(100)
Malta	yes	yes	national	TB notifications	13	13	(100)
Netherlands	yes	yes	national	TB notifications	943	941	(100)
Norway	yes	yes	national	TB notifications	186	184	(99)
Sweden	yes	yes	national	TB notifications	412	408	(99)
Switzerland	yes	yes	national	TB notifications	615	611	(99)
United Kingdom	yes	yes	national	TB notifications	3 384	3 168	(94)
Centre							
Bosnia-Herzegovina	yes	yes	national	TB notifications	1748	1 349	(77)
Croatia	yes	yes	national †	TB notifications	861	861	(100)
Czech Republic	yes	yes	national	TB notifications	830	698	(84)
Slovakia	yes	yes	national	TB notifications	645	578	(90)
Slovenia	yes	yes	national	TB notifications	350	339	(97)
East							
Estonia	yes	yes	national	TB notifications	524	517	(99)
Latvia	yes	yes	national	TB notifications	1 227	1 015	(83)
Lithuania	yes	yes	national	TB notifications	1 420	986	(69)
Group B: culture or DST * not routinely performed or data available on selected TB cases or areas							
West							
France	yes	yes	12/23 regions	20 university hospitals	1 112	1 102	(99)
Greece	no	no	some regions	all laboratories (n=3)	na	750	-
Spain	yes	yes	national	national reference lab.	na	514	-
Centre							
Albania	yes	no	some areas	TB notifications	215	152	(71)
Hungary	no	no	national	TB notifications	1 206	559	(46)
Romania	no	no	national	TB notifications	13 479	2 542	(19)
Yugoslavia	yes	yes	Belgrade reg.	TB notifications	331	331	(100)
East							
Armenia	no	no	some areas	national reference lab.	na	167	-
Kazakhstan	no	no	national	all laboratories (n=18)	na	4 496	-
Kyrgyzstan	no	no	na	national reference lab.	na	318	-
Russian Federation	yes	yes	national	TB notifications ‡	na	36 217	-
Ukraine	no	yes	Kiev region	one laboratory (Kiev)	na	484	-

na = information not available;

* Drug susceptibility testing;

† National sample of notified TB cases

‡ New respiratory TB cases notified to the Ministry of Health (N= 82 175)

TABLES

Table 17. Global drug resistance at the start of treatment, tuberculosis cases, 1999

Geographic area Country	Cases with DST * result	Cases resistant to at least:									
		Isoniazid (INH)		Rifampicin (RMP)		INH & RMP (multidrug resistant)		Ethambutol		Streptomycin	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A: culture and DST * performed routinely; national data on notified TB cases											
West											
Andorra	6	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Austria	756	37	(4.9)	8	(1.1)	5	(0.7)	2	(0.3)	–	–
Denmark	416	31	(7.5)	1	(0.2)	0	(0.0)	1	(0.2)	56	(13.5)
Finland	450	3	(0.7)	0	(0.0)	0	(0.0)	6	(1.3)	–	–
Germany †	3 356	187	(5.6)	52	(1.5)	41	(1.2)	–	–	–	–
Iceland	8	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Ireland	260	10	(3.8)	2	(0.8)	2	(0.8)	0	(0.0)	1	(0.4)
Israel	331	44	(13.3)	28	(8.5)	26	(7.9)	8	(2.4)	46	(13.9)
Malta	13	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	941	55	(5.8)	8	(0.9)	4	(0.4)	4	(0.4)	42	(4.5)
Norway	184	11	(6.0)	3	(1.6)	3	(1.6)	4	(2.2)	–	–
Sweden	408	42	(10.3)	9	(2.2)	7	(1.7)	3	(0.7)	–	–
Switzerland	611	40	(6.6)	13	(2.1)	11	(1.8)	7	(1.1)	–	–
United Kingdom	3 168	182	(5.7)	24	(0.8)	21	(0.7)	16	(0.5)	–	–
Centre											
Bosnia-Herzegovina	1 349	18	(1.3)	24	(1.8)	7	(0.5)	21	(1.6)	24	(1.8)
Croatia †	861	18	(2.1)	9	(1.0)	5	(0.6)	1	(0.1)	10	(1.2)
Czech Republic	698	15	(2.1)	8	(1.1)	4	(0.6)	7	(1.0)	10	(1.4)
Slovakia	575	14	(2.4)	10	(1.7)	6	(1.0)	6	(1.0)	9	(1.6)
Slovenia	339	9	(2.7)	2	(0.6)	2	(0.6)	1	(0.3)	5	(1.5)
East											
Estonia	517	165	(31.9)	119	(23.0)	118	(22.8)	90	(17.4)	161	(31.1)
Latvia	1 015	289	(28.5)	139	(13.7)	137	(13.5)	53	(5.2)	256	(25.2)
Lithuania	986	268	(27.2)	160	(16.2)	135	(13.7)	62	(6.3)	219	(22.2)
Group B: culture or DST * not routinely performed or data available on selected TB cases or areas (see Tab. 16)											
West											
France	1 102	52	(4.7)	17	(1.5)	15	(1.4)	5	(0.5)	86	(7.8)
Greece	750	113	(15.1)	70	(9.3)	55	(7.3)	55	(7.3)	103	(13.7)
Spain ‡	–	–	–	–	–	–	–	–	–	–	–
Centre											
Albania	152	9	(5.9)	10	(6.6)	5	(3.3)	2	(1.3)	17	(11.2)
Hungary	559	52	(9.3)	19	(3.4)	15	(2.7)	8	(1.4)	37	(6.6)
Romania	2 542	289	(11.4)	174	(6.8)	125	(4.9)	17	(0.7)	221	(8.7)
Yugoslavia	331	4	(1.2)	3	(0.9)	2	(0.6)	4	(1.2)	16	(4.8)
East											
Armenia	167	22	(13.2)	30	(18.0)	11	(6.6)	25	(15.0)	49	(29.3)
Kazakhstan	4 496	1 496	(33.3)	903	(20.1)	621	(13.8)	985	(21.5)	1 834	(40.8)
Kyrgyzstan	318	115	(36.2)	78	(24.5)	59	(18.6)	66	(20.8)	165	(51.9)
Russian Federation †	–	–	–	–	–	–	–	–	–	–	–
Ukraine	484	116	(24.0)	102	(21.1)	86	(17.8)	10	(2.1)	110	(22.7)

* Drug susceptibility testing;

† National sample of notified TB cases;

‡ Data available on new cases only

TABLES

Table 18. Drug resistance at the start of treatment, tuberculosis cases never treated with anti-TB drugs, 1999

Geographic area Country	Cases with DST result	Cases resistant to at least:									
		Isoniazid (INH)		Rifampicin (RMP)		INH & RMP (multidrug resistant)		Ethambutol		Streptomycin	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A: culture and DST * performed routinely and national data linked to TB notifications											
West											
Andorra	6	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Austria	703	30	(4.3)	5	(0.7)	2	(0.3)	2	(0.3)	–	–
Denmark	392	29	(7.4)	1	(0.3)	0	(0.0)	1	(0.3)	52	(13.3)
Finland	371	2	(0.5)	0	(0.0)	0	(0.0)	6	(1.6)	–	–
Germany †	2 206	94	(4.3)	23	(1.0)	18	(0.8)	–	–	–	–
Iceland	7	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Ireland	101	2	(2.0)	1	(1.0)	1	(1.0)	1	(1.0)	1	(1.0)
Israel	–	–	–	–	–	–	–	–	–	–	–
Malta	13	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	899	52	(5.8)	7	(0.8)	4	(0.4)	4	(0.4)	42	(4.7)
Norway	144	11	(7.6)	3	(2.1)	3	(2.1)	3	(2.1)	–	–
Sweden	377	35	(9.3)	5	(1.3)	3	(0.8)	1	(0.3)	–	–
Switzerland	428	24	(5.6)	4	(0.9)	3	(0.7)	4	(0.9)	–	–
United Kingdom ‡	2 138	133	(6.2)	11	(0.5)	10	(0.5)	11	(0.5)	–	–
Centre											
Bosnia–Herzegovina	1 154	7	(0.6)	9	(0.8)	3	(0.3)	11	(1.0)	14	(1.2)
Croatia †	761	14	(1.8)	4	(0.5)	2	(0.3)	1	(0.1)	9	(1.2)
Czech Republic	628	10	(1.6)	5	(0.8)	2	(0.3)	4	(0.6)	6	(1.0)
Slovakia	456	8	(1.8)	5	(1.1)	3	(0.7)	3	(0.7)	7	(1.5)
Slovenia	304	7	(2.3)	0	(0.0)	0	(0.0)	0	(0.0)	3	(1.0)
East											
Estonia	428	117	(27.3)	76	(17.8)	75	(17.5)	60	(14.0)	117	(27.3)
Latvia	825	229	(27.8)	86	(10.4)	86	(10.4)	35	(4.2)	200	(24.2)
Lithuania	819	178	(21.7)	83	(10.1)	64	(7.8)	36	(4.4)	143	(17.5)
Group B: culture or DST * not routinely performed or data collected on selected cases or areas (see Tab. 16)											
West											
France	910	31	(3.4)	7	(0.8)	6	(0.7)	2	(0.2)	68	(7.5)
Greece	–	–	–	–	–	–	–	–	–	–	–
Spain	514	19	(3.7)	4	(0.8)	3	(0.6)	0	(0.0)	4	(0.8)
Centre											
Albania	–	–	–	–	–	–	–	–	–	–	–
Hungary	456	33	(7.2)	12	(2.6)	8	(1.8)	4	(0.9)	30	(6.6)
Romania	2 114	190	(9.0)	111	(5.3)	76	(3.6)	8	(0.4)	150	(7.1)
Yugoslavia	290	2	(0.7)	1	(0.3)	0	(0.0)	2	(0.7)	11	(3.8)
East											
Armenia	104	9	(8.7)	7	(6.7)	3	(2.9)	12	(11.5)	23	(22.1)
Kazakhstan	2 024	408	(20.2)	188	(9.3)	110	(5.4)	232	(11.5)	537	(26.5)
Kyrgyzstan	141	33	(23.4)	18	(12.8)	9	(6.4)	20	(14.2)	61	(43.3)
Russian Federation	36 217	–	–	–	–	2 429	(6.7)	–	–	–	–
Ukraine	245	30	(12.2)	27	(11.0)	19	(7.8)	1	(0.4)	32	(13.1)

* Drug susceptibility testing;

† National sample of notified cases;

‡ Except Scotland

TABLES

Table 19. Drug resistance at the start of treatment, tuberculosis cases previously treated with anti-TB drugs, 1999

Geographic area Country	Cases with DST result	Cases resistant to at least:									
		Isoniazid (INH)		Rifampicin (RMP)		INH & RMP (multidrug resistant)		Ethambutol		Streptomycin	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A: culture and DST * performed routinely and national data linked to TB notifications											
West											
Andorra	0	–	–	–	–	–	–	–	–	–	–
Austria	53	7	(13.2)	3	(5.7)	3	(5.7)	0	(0.0)	–	–
Denmark	24	2	(8.3)	0	(0.0)	0	(0.0)	0	(0.0)	4	(16.7)
Finland	27	1	(3.7)	0	(0.0)	0	(0.0)	0	(0.0)	–	–
Germany †	303	47	(15.5)	23	(7.6)	18	(5.9)	–	–	–	–
Iceland	1	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Ireland	22	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Israel	–	–	–	–	–	–	–	–	–	–	–
Malta	0	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	42	3	(7.1)	1	(2.4)	0	(0.0)	0	(0.0)	0	(0.0)
Norway	40	0	(0.0)	0	(0.0)	0	(0.0)	1	(2.5)	–	–
Sweden	31	7	(22.6)	4	(12.9)	4	(12.9)	2	(6.5)	–	–
Switzerland	57	12	(21.1)	6	(10.5)	6	(10.5)	3	(5.4)	–	–
United Kingdom ‡	220	10	(4.5)	8	(3.6)	6	(2.7)	2	(0.9)	–	–
Centre											
Bosnia-Herzegovina	121	6	(5.0)	10	(8.3)	3	(2.5)	4	(3.3)	5	(4.1)
Croatia †	93	3	(3.2)	3	(3.2)	2	(2.2)	0	(0.0)	1	(1.1)
Czech Republic	70	6	(8.6)	3	(4.3)	2	(2.9)	3	(4.3)	4	(5.7)
Slovakia	122	6	(4.9)	5	(4.1)	3	(2.5)	3	(2.5)	2	(1.6)
Slovenia	35	2	(5.7)	2	(5.7)	2	(5.7)	1	(2.9)	2	(5.7)
East											
Estonia	89	48	(53.9)	43	(48.3)	43	(48.3)	30	(33.7)	44	(49.4)
Latvia	190	60	(31.6)	53	(27.9)	51	(26.8)	18	(9.5)	56	(29.5)
Lithuania	167	90	(53.9)	77	(46.1)	71	(42.5)	26	(15.6)	76	(45.5)
Group B: culture or DST * not routinely performed or data collected on selected cases or areas (see Tab. 16)											
West											
France	106	13	(12.3)	10	(9.4)	9	(8.5)	3	(2.8)	8	(7.5)
Greece	–	–	–	–	–	–	–	–	–	–	–
Spain	–	–	–	–	–	–	–	–	–	–	–
Centre											
Albania	–	–	–	–	–	–	–	–	–	–	–
Hungary	103	19	(18.4)	7	(6.8)	7	(6.8)	4	(3.9)	7	(6.8)
Romania	428	99	(23.1)	63	(14.7)	49	(11.4)	9	(2.1)	71	(16.6)
Yugoslavia	41	2	(4.9)	2	(4.9)	2	(4.9)	2	(4.9)	5	(12.2)
East											
Armenia	63	13	(20.6)	23	(36.5)	8	(12.7)	13	(20.6)	26	(41.3)
Kazakhstan	2 472	1 100	(44.5)	721	(29.2)	511	(20.7)	733	(29.7)	1 322	(53.5)
Kyrgyzstan	81	43	(53.1)	36	(44.4)	30	(37.0)	28	(34.6)	51	(63.0)
Russian Federation	–	–	–	–	–	–	–	–	–	–	–
Ukraine	239	86	(36.0)	75	(31.4)	67	(28.0)	9	(3.8)	78	(32.6)

† National sample of notified cases;

* Drug susceptibility testing;

‡ Except Scotland

TABLES

Table 20. Drug resistance at the start of treatment, tuberculosis cases born in the country / national citizens, 1999

Geographic area Country	Definition of origin *	Cases with DST result	Cases resistant to at least:									
			Isoniazid (INH)		Rifampicin (RMP)		INH & RMP (multidrug resistant)		Ethambutol		Streptomycin	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A: culture and DST † performed routinely and national data linked to TB notifications												
West												
Andorra	birth	6	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Austria	citiz.	581	23	(4.0)	1	(0.2)	0	(0.0)	0	(0.0)	–	–
Denmark	birth	131	3	(2.3)	1	(0.8)	0	(0.0)	0	(0.0)	4	(3.1)
Finland	birth	371	2	(0.5)	0	(0.0)	0	(0.0)	3	(0.8)	–	–
Germany ‡	birth	2 048 ‡	63	(3.1)	14	(0.7)	7	(0.3)	–	–	–	–
Iceland	birth	3	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Ireland	birth	220	8	(3.6)	1	(0.5)	1	(0.5)	1	(0.5)	1	(0.5)
Israel	birth	27	1	(3.7)	0	(0.0)	0	(0.0)	0	(0.0)	3	(11.1)
Malta	birth	9	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Netherlands	citiz.	367	13	(3.5)	0	(0.0)	0	(0.0)	0	(0.0)	9	(2.5)
Norway	birth	62	1	(1.6)	1	(1.6)	1	(1.6)	2	(3.2)	–	–
Sweden	birth	138	7	(5.1)	1	(0.7)	1	(0.7)	1	(0.7)	–	–
Switzerland	birth	215	7	(3.3)	0	(0.0)	0	(0.0)	1	(0.5)	–	–
United Kingdom §	birth	949	39	(4.1)	0	(0.0)	0	(0.0)	1	(0.1)	–	–
Centre												
Bosnia-Herzegovina	birth	1 349	18	(1.3)	24	(1.8)	7	(0.5)	21	(1.6)	24	(1.8)
Croatia ‡	birth	642	10	(1.6)	7	(1.1)	3	(0.5)	0	(0.0)	9	(1.4)
Czech Republic	–	–	–	–	–	–	–	–	–	–	–	–
Slovakia	birth	574	13	(2.3)	9	(1.6)	5	(0.9)	5	(0.9)	9	(1.6)
Slovenia	birth	253	5	(2.0)	1	(0.4)	1	(0.4)	1	(0.4)	4	(1.6)
East												
Estonia	birth	396	132	(33.3)	97	(24.5)	93	(23.5)	74	(18.7)	125	(31.6)
Latvia	birth	982	283	(28.8)	135	(13.7)	133	(13.5)	53	(5.4)	254	(25.9)
Lithuania	–	–	–	–	–	–	–	–	–	–	–	–
Group B: culture or DST † not routinely performed or data collected on selected cases or areas (see Tab. 16)												
West												
France	birth	604	12	(2.0)	2	(0.3)	1	(0.2)	1	(0.2)	36	(6.0)
Greece	–	–	–	–	–	–	–	–	–	–	–	–
Spain	–	–	–	–	–	–	–	–	–	–	–	–
Centre												
Hungary	–	–	–	–	–	–	–	–	–	–	–	–
Romania	citiz.	2 541	289	(11.4)	174	(6.8)	125	(4.9)	17	(0.7)	221	(8.7)
Yugoslavia	–	–	–	–	–	–	–	–	–	–	–	–
East												
Armenia	–	–	–	–	–	–	–	–	–	–	–	–
Kazakhstan	–	–	–	–	–	–	–	–	–	–	–	–
Kyrgyzstan	na	318	115	(36.2)	78	(24.5)	59	(18.6)	66	(20.8)	165	(51.9)
Russian Federation	–	–	–	–	–	–	–	–	–	–	–	–
Ukraine	na	484	116	(24.0)	102	(21.1)	86	(17.8)	10	(2.1)	110	(22.7)

* Birth = country of birth; citiz. = citizenship; na = not available;

† Drug susceptibility testing;

‡ National sample of notified TB cases;

§ Except Scotland

TABLES

Table 21. Drug resistance at the start of treatment, tuberculosis cases born abroad / foreign citizens, 1999

Geographic area Country	Definition of origin *	Cases with DST result	Cases resistant to at least:									
			Isoniazid (INH)		Rifampicin (RMP)		INH & RMP (multidrug resistant)		Ethambutol		Streptomycin	
			N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Group A: culture and DST † performed routinely and national data linked to TB notifications												
West												
Andorra	birth	0	-	-	-	-	-	-	-	-	-	-
Austria	citiz.	175	14 (8.0)	7 (4.0)	5 (2.9)	2 (1.1)	-	-	-	-	-	-
Denmark	birth	285	28 (9.8)	0 (0.0)	0 (0.0)	1 (0.4)	52 (18.2)	-	-	-	-	-
Finland	birth	27	1 (3.7)	0 (0.0)	0 (0.0)	3 (11.1)	-	-	-	-	-	-
Germany ‡	birth	1 276	124 (9.7)	38 (3.0)	34 (2.7)	-	-	-	-	-	-	-
Iceland	birth	5	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Ireland	birth	40	2 (5.0)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)	1 (2.5)
Israel	birth	304	43 (14.1)	28 (9.2)	26 (8.6)	8 (2.6)	43 (14.1)	-	-	-	-	-
Malta	birth	4	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Netherlands	citiz.	553	39 (7.1)	7 (1.3)	4 (0.7)	4 (0.7)	30 (5.4)	-	-	-	-	-
Norway	birth	122	10 (8.2)	2 (1.6)	2 (1.6)	2 (1.6)	-	-	-	-	-	-
Sweden	birth	270	35 (13.0)	8 (3.0)	6 (2.2)	2 (0.7)	-	-	-	-	-	-
Switzerland	birth	372	32 (8.6)	13 (3.5)	11 (3.0)	6 (1.6)	-	-	-	-	-	-
United Kingdom §	birth	1 566	107 (6.8)	20 (1.3)	17 (1.1)	12 (0.8)	-	-	-	-	-	-
Centre												
Bosnia-Herzegovina	birth	0	-	-	-	-	-	-	-	-	-	-
Croatia ‡	birth	141	5 (3.5)	2 (1.4)	2 (1.4)	1 (0.7)	0 (0.0)	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-	-	-	-
Slovakia	birth	4	1 (25.0)	1 (25.0)	1 (25.0)	1 (25.0)	0 (0.0)	-	-	-	-	-
Slovenia	birth	86	4 (4.7)	1 (1.2)	1 (1.2)	0 (0.0)	1 (1.2)	-	-	-	-	-
East												
Estonia	birth	121	33 (27.3)	22 (18.2)	21 (17.4)	16 (13.2)	36 (29.8)	-	-	-	-	-
Latvia	birth	33	6 (18.2)	4 (12.1)	4 (12.1)	0 (0.0)	2 (6.1)	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-
Group B: culture or DST † not routinely performed or data collected on selected cases or areas (see Tab. 16)												
West												
France	birth	444	38 (8.6)	14 (3.2)	13 (2.9)	4 (0.9)	39 (8.8)	-	-	-	-	-
Greece	-	-	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	-	-	-	-	-	-
Centre												
Hungary	-	-	-	-	-	-	-	-	-	-	-	-
Romania	citiz.	1	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	-	-	-	-	-
Yugoslavia	-	-	-	-	-	-	-	-	-	-	-	-
East												
Armenia	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-

* Birth = country of birth; citiz. = citizenship;
† Drug susceptibility testing;
‡ National sample of notified TB cases;
§ Except Scotland

COUNTRY PROFILES



COUNTRY PROFILES

West	page	Centre	page	East	page
Andorra	63	Albania	87	Armenia	103
Austria	64	Bosnia-Herzegovina	88	Azerbaijan	104
Belgium	65	Bulgaria	89	Belarus	105
Denmark	66	Croatia	90	Estonia	106
Finland	67	Czech Republic	91	Georgia	107
France	68	Hungary	92	Kazakhstan	108
Germany	69	Macedonia, FYR	93	Kyrgyzstan	109
Greece	70	Poland	94	Latvia	110
Iceland	71	Romania	95	Lithuania	111
Ireland	72	Slovakia	96	Moldova, Republic of	112
Israel	73	Slovenia	97	Russian Federation	113
Italy	74	Turkey	98	Tajikistan	114
Luxembourg	75	Yugoslavia	99	Turkmenistan	115
Malta	76			Ukraine	116
Monaco	77			Uzbekistan	117
Netherlands	78				
Norway	79				
Portugal	80				
Spain	81				
Sweden	82				
Switzerland	83				
United Kingdom	84				

NOTE ON COUNTRY PROFILES

Country profiles for 1999 are presented for all countries except San Marino, where zero cases of TB were notified in 1999. Data may differ from those published by WHO, mainly for countries providing individual data to EuroTB, due to further validation.

TB case notifications

The median age of TB cases was calculated only for countries providing individual data.

Drug resistance surveillance

Data presented are be provided on TB cases notified in 1999 or on TB cases diagnosed in selected laboratories or clinical Centres, unlinked to TB notification. In countries where culture or drug susceptibility testing (DST) are not routinely performed for TB diagnosis, or where DST results are provided for a small proportion of culture positive cases notified, data may not be representative of the country situation.

1998 data presented when 1999 data not available.

Figures

The Figure on the bottom left showing numbers of TB cases and TB notification rates for the period 1995-1999, is presented for all countries. When information on geographic origin is available for at least three data points and for at least 85% of cases, numbers of cases are shown by geographic origin (nationals / foreigners).

The other Figures are presented for countries with at least 50 TB cases notified in 1999. The Figure "Tuberculosis notification rates by age group" is presented when at least three data points are available. The Figure "Tuberculosis cases by age group, sex and geographic origin" is presented for countries where at least 5% of TB cases notified were of foreign origin.

Abbreviations used are as follows:

DST = Drug susceptibility testing

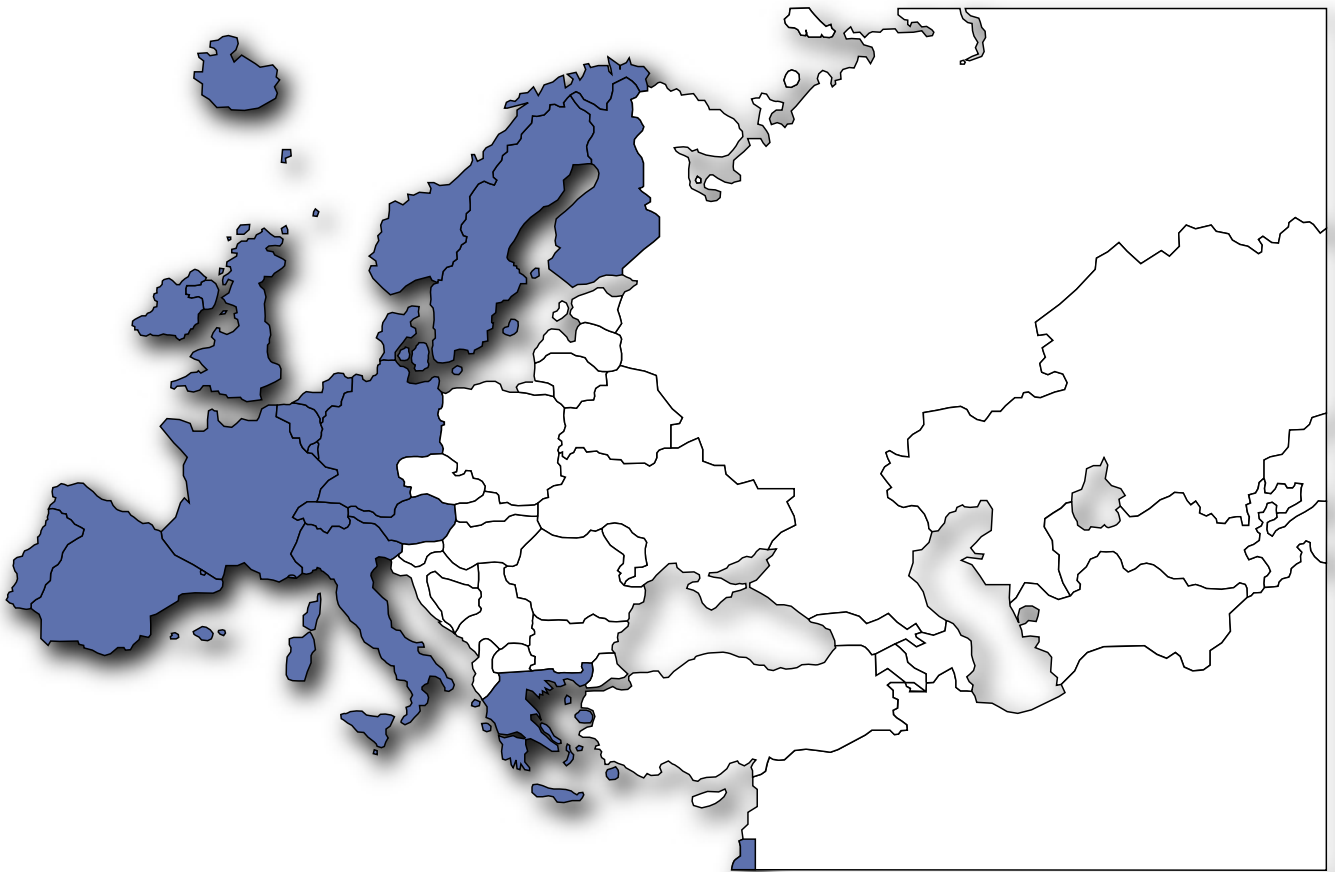
INH = Isoniazid

RMP = Rifampicin

na = not available

COUNTRY PROFILES

West



ANDORRA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	9	
Notification rate per 100 000	12.0	
Sex ratio (male/female)	1.3	
Median age (years)	-	
Individuals born abroad	2	(22.2%)
New (never treated)	9	(100%)
Culture positive	6	(66.7%)
Pulmonary	6	(66.7%)
among which sputum smear positive	3	(50.0%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	6/6 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	6	-	0	-	0	-	6
Resistant to INH	0	(0.0)	-	-	-	-	0
Resistant to RMP	0	(0.0)	-	-	-	-	0
Multidrug resistant §	0	(0.0)	-	-	-	-	0

* Drug susceptibility testing; § resistant to at least INH and RMP

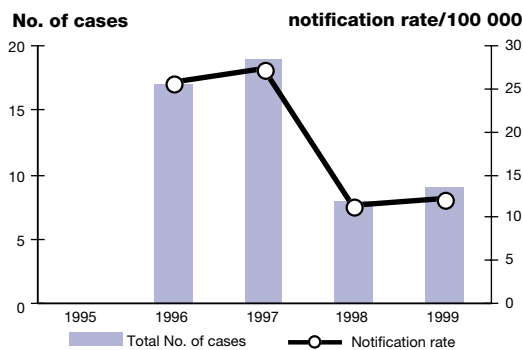
Tuberculosis notification rates by age group and sex, 1999

Insufficient number of cases for graphic presentation

Tuberculosis cases by age group, geographic origin and sex, 1999

Insufficient number of cases for graphic presentation

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Insufficient number of cases for graphic presentation

AUSTRIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	1 201	
Notification rate per 100 000	14.7	
Sex ratio (male/female)	1.7	
Median age (years)	48	
Foreign citizens	312	(26.0%)
New (never treated)	1 085	(90.3%)
Culture positive	756	(62.9%)
Pulmonary	984	(81.9%)
among which sputum smear positive	352	(35.8%)

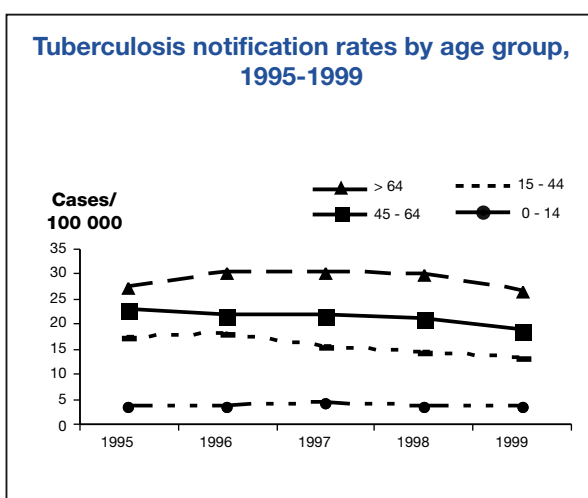
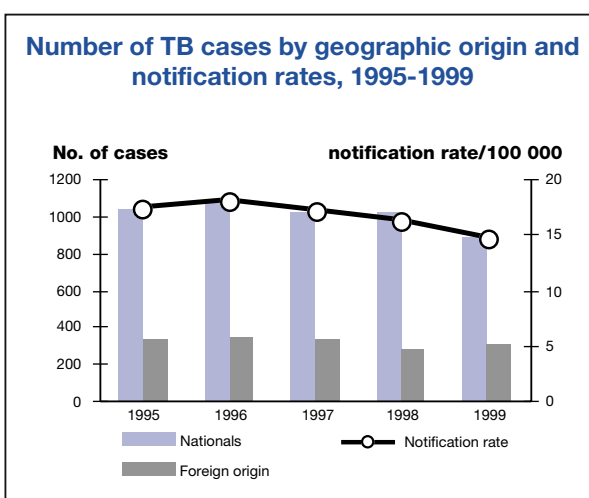
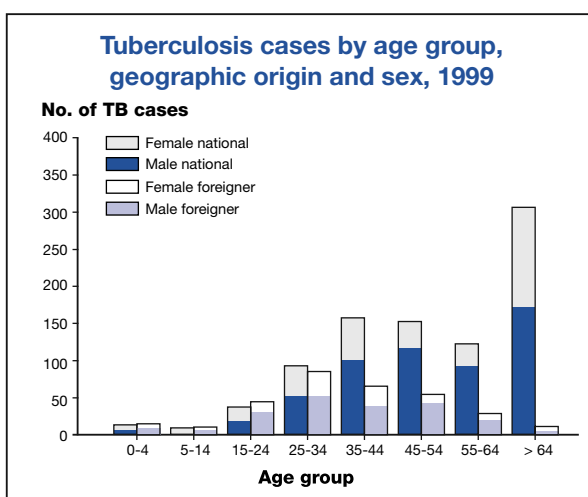
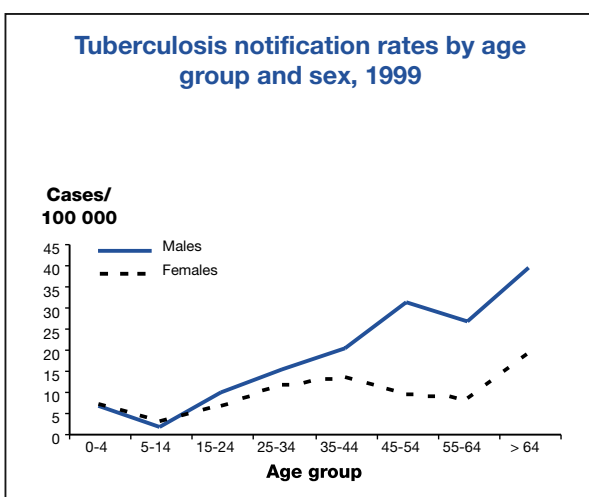
Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	756/756 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	703	-	53	-	0	-	756
Resistant to INH	30	(4.3)	7	(13.2)	-	-	37
Resistant to RMP	5	(0.7)	3	(5.7)	-	-	8
Multidrug resistant §	2	(0.3)	3	(5.7)	-	-	5

* Drug susceptibility testing; § resistant to at least INH and RMP



BELGIUM

Tuberculosis case notifications, 1999

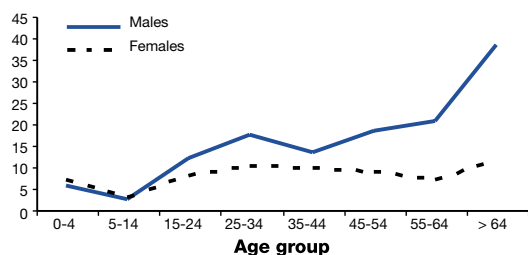
Type of data provided	Individual	
Total number of cases	1 270	
Notification rate per 100 000	12.5	
Sex ratio (male/female)	1.9	
Median age (years)	47	
Foreign citizens	454	(35.7%)
New (never treated)	983	(77.4%)
Culture positive	926	(72.9%)
Pulmonary	957	(75.4%)
among which sputum smear positive	417	(43.6%)

Drug resistance surveillance, 1999

Not available

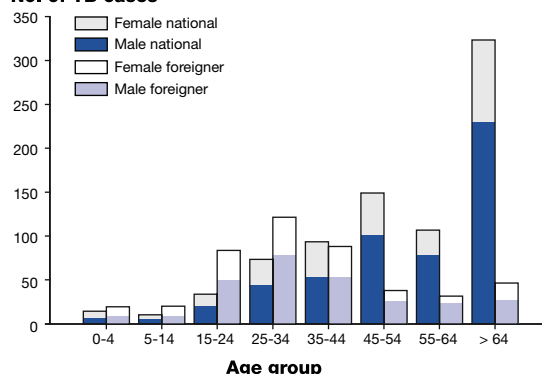
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000



Tuberculosis cases by age group, geographic origin and sex, 1999

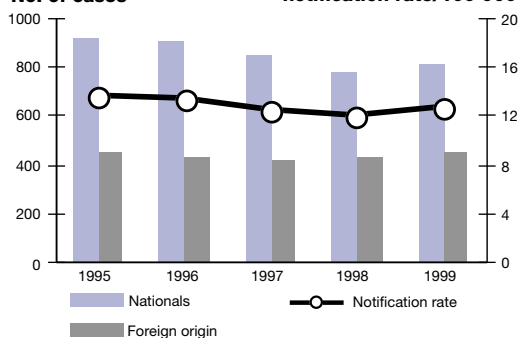
No. of TB cases



Number of TB cases by geographic origin and notification rates, 1995-1999

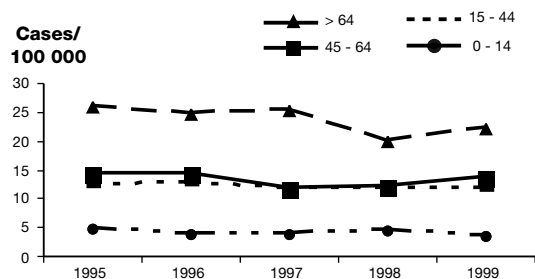
No. of cases

notification rate/100 000



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



DENMARK

Tuberculosis case notifications, 1999

Type of data provided	Individual*	
Total number of cases	536	
Notification rate per 100 000	10.1	
Sex ratio (male/female)	1.3	
Median age (years)	34	
Individuals born abroad	372	(69.4%)
New (never treated)	502	(93.7%)
Culture positive	428	(79.9%)
Pulmonary	345	(64.4%)
among which sputum smear positive	113	(32.8%)

* Except DST data

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	416/428 (97%)

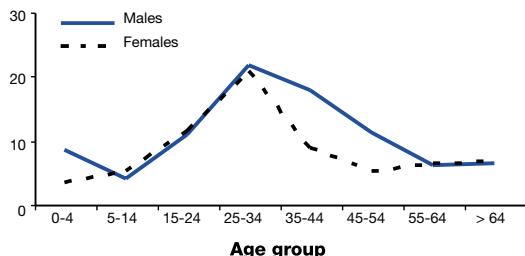
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	392	-	24	-	0	-	416
Resistant to INH	29	(7.4)	2	(8.3)	-	-	31
Resistant to RMP	1	(0.3)	0	(0.0)	-	-	1
Multidrug resistant §	0	(0.0)	0	(0.0)	-	-	0

* Drug susceptibility testing; § resistant to at least INH and RMP

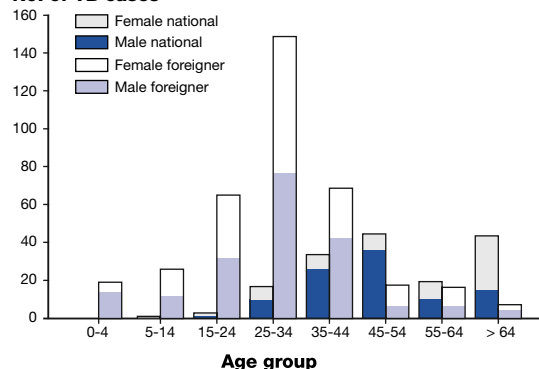
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

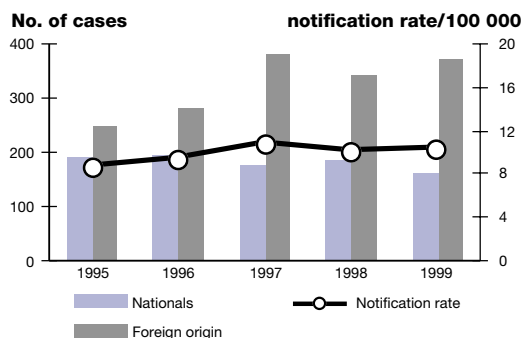


Tuberculosis cases by age group, geographic origin and sex, 1999

No. of TB cases

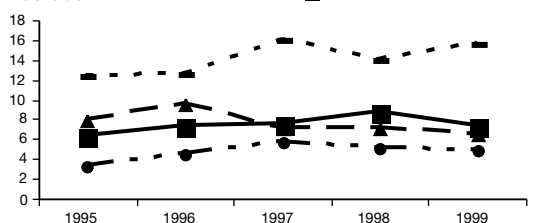


Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



FINLAND

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	566	
Notification rate per 100 000	11.0	
Sex ratio (male/female)	1.1	
Median age (years)	70	
Individuals born abroad	49	(8.7%)
New (never treated)	473	(83.6%)
Culture positive	477	(84.3%)
Pulmonary	382	(67.5%)
among which sputum smear positive	180	(47.1%)

Drug resistance surveillance, 1999

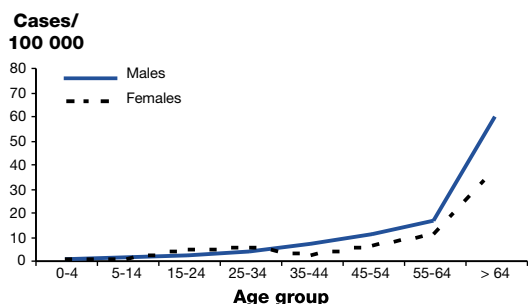
Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	450/477 (94%)

Resistant cases by previous anti-TB treatment status

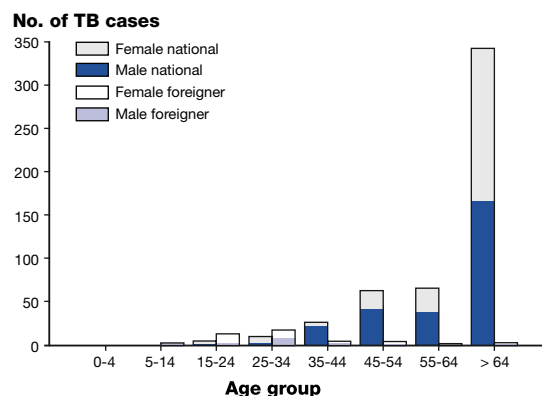
	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	371	-	27	-	52	-	450
Resistant to INH	2	(0.5)	1	(3.7)	0	(0.0)	3
Resistant to RMP	0	(0.0)	0	(0.0)	0	(0.0)	0
Multidrug resistant §	0	(0.0)	0	(0.0)	0	(0.0)	0

* Drug susceptibility testing; § resistant to at least INH and RMP

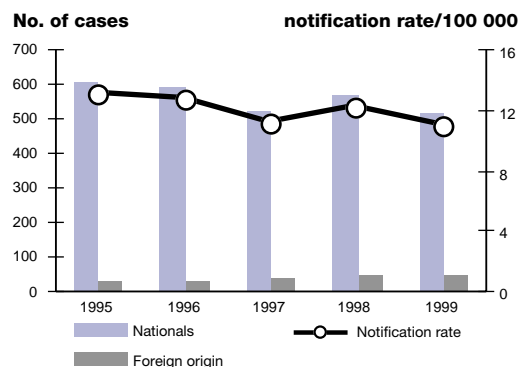
Tuberculosis notification rates by age group and sex, 1999



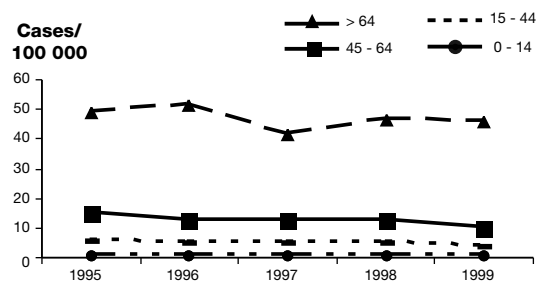
Tuberculosis cases by age group, geographic origin and sex, 1999



Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



FRANCE

Tuberculosis case notifications, 1999

Type of data provided	Individual*	
Total number of cases	6 674	
Notification rate per 100 000	11.0	
Sex ratio (male/female)	1.5	
Median age (years)	46	
Individuals born abroad §	1 932	(28.9%)
New (never treated)	4 196	(62.9%)
Culture positive**	1 683	(25.2%)
Pulmonary	4 780	(71.6%)
among which sputum smear positive	2 631	(55.0%)

* Except DST data; ** Culture result unknown for 32% of TB cases
§ 23% of cases with missing information

Drug resistance surveillance, 1999

Linkage with TB notifications no
Geographic coverage 12/23 regions
Culture positive cases with DST* results 1 102/1 112 (99%)

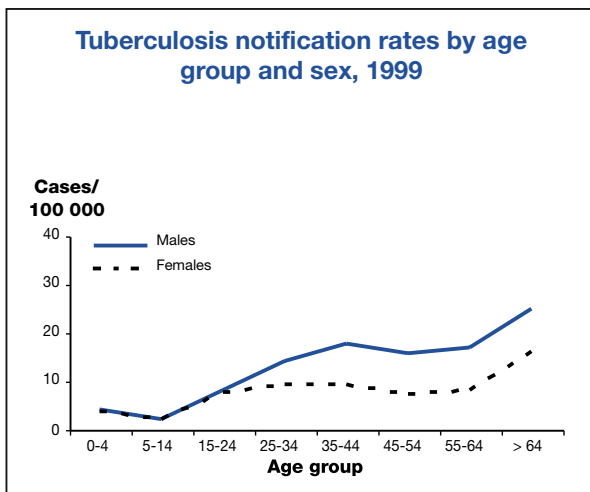
Note: Cases diagnosed in 20 university hospitals in 12/23 regions

Resistant cases by previous anti-TB treatment status

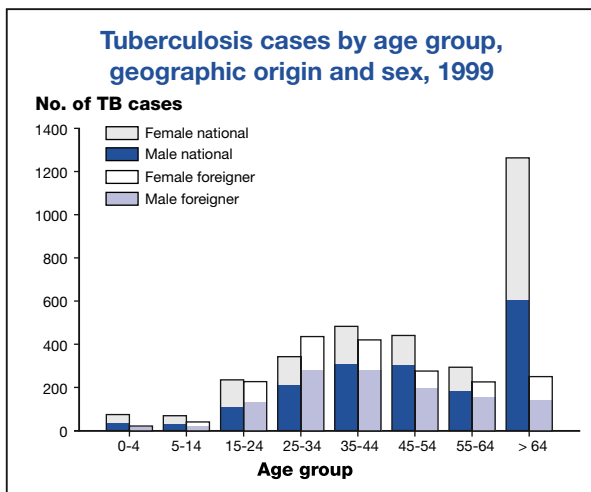
	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	910	-	106	-	86	-	1 102
Resistant to INH	31	(3.4)	13	(12.3)	8	(9.3)	52
Resistant to RMP	7	(0.8)	10	(9.4)	0	(0.0)	17
Multidrug resistant §	6	(0.7)	9	(8.5)	0	(0.0)	15

* Drug susceptibility testing; § resistant to at least INH and RMP

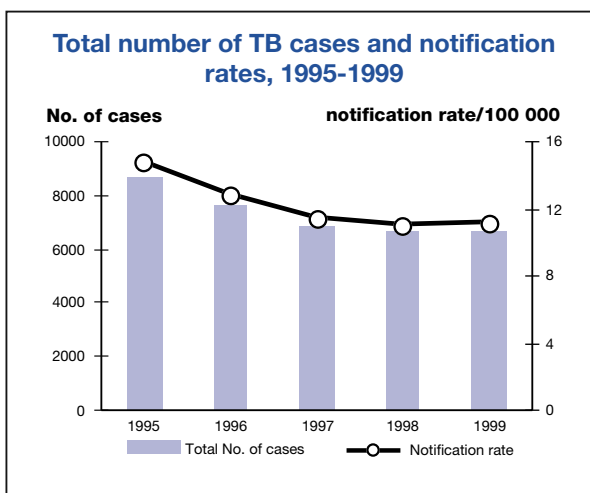
Tuberculosis notification rates by age group and sex, 1999



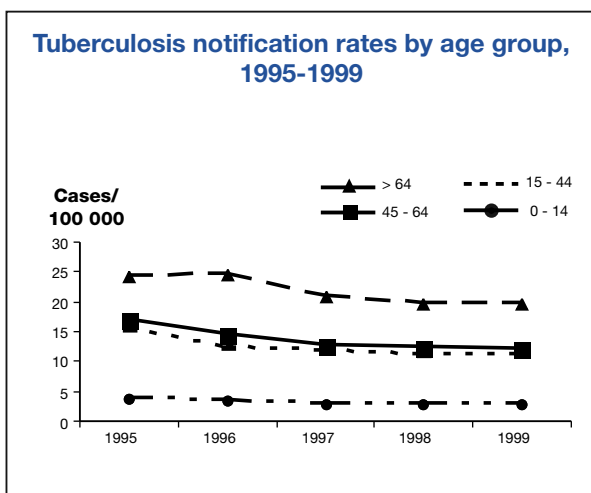
Tuberculosis cases by age group, geographic origin and sex, 1999



Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



GERMANY

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	9 974	
Notification rate per 100 000	12.1	
Sex ratio (male/female)	1.6	
Median age (years)	-	
Foreign citizens	3 305	(33.1%)
New (never treated)	-	-
Culture positive *	3 963	(66.7%)
Respiratory	8 297	(83.2%)
among which sputum smear positive	2 954	(35.6%)

* Data on 5945 TB cases notified in 285/430 public health units

Drug resistance surveillance, 1999

Linkage with TB notifications	yes (national sample)
Geographic coverage	national
Culture positive cases with DST* results	3356/4023 (83%)

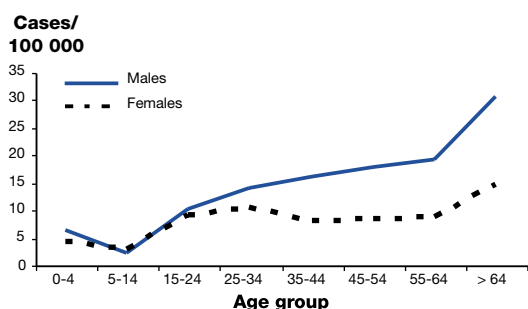
Note: TB cases notified in 285/430 public health units

Resistant cases by previous anti-TB treatment status

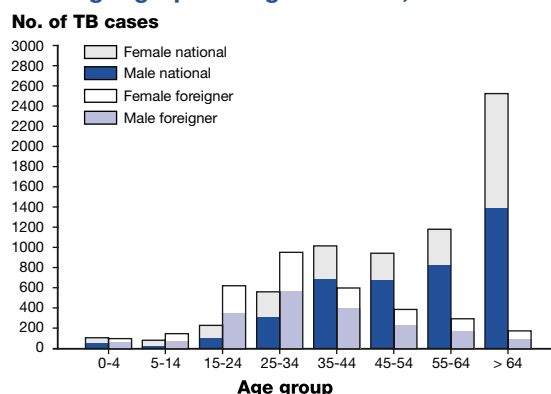
	New		Previously treated		Unknown	Total
	N	(%)	N	(%)		
Tested	2 206	-	303	-	847	3 356
Resistant to INH	94	(4.3)	47	(15.5)	46	187
Resistant to RMP	23	(1.0)	23	(7.6)	6	52
Multidrug resistant §	18	(0.8)	18	(5.9)	5	41

* Drug susceptibility testing; § resistant to at least INH and RMP

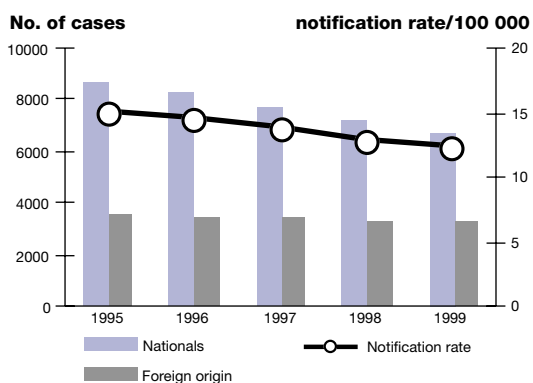
Tuberculosis notification rates by age group and sex, 1999



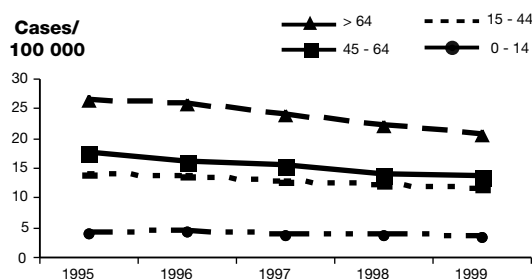
Tuberculosis cases by age group, geographic origin and sex, 1999



Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



GREECE

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	952	
Notification rate per 100 000	9.0	
Sex ratio (male/female)	2.4	
Median age (years)	-	
Foreign citizens	116	(12.2%)
New (never treated)	897	(94.2%)
Culture positive	396	(41.6%)
Pulmonary	827	(86.9%)
among which sputum smear positive	412	(49.8%)

Drug resistance surveillance, 1999

Linkage with TB notifications no
 Geographic coverage national
 Culture positive cases with DST* results -

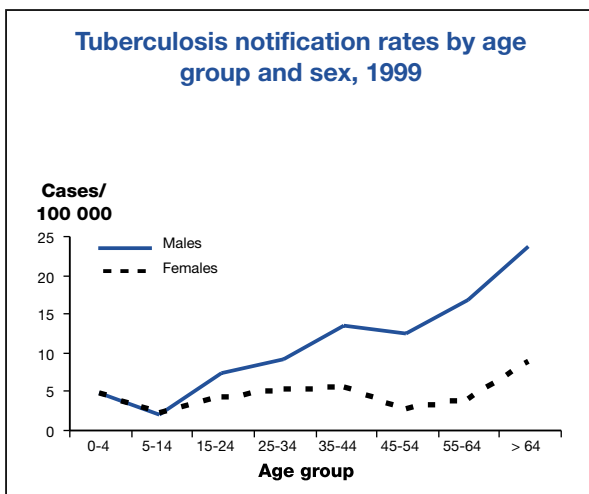
Note: Data from the three laboratories performing DST. Culture and DST done on selected cases

Resistant cases by previous anti-TB treatment status

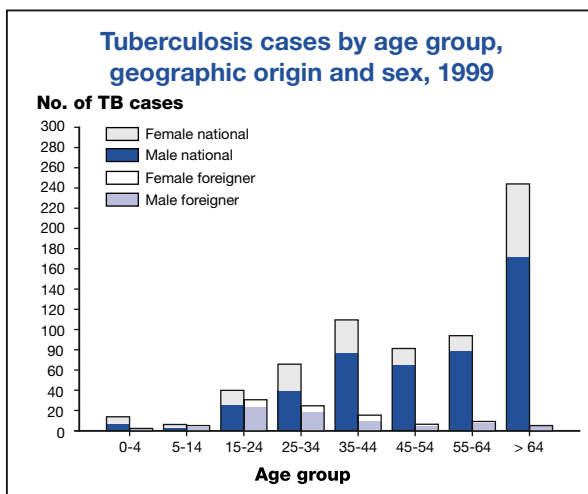
	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	-	-	-	-	750	-	750
Resistant to INH	-	-	-	-	113	(15.1)	113
Resistant to RMP	-	-	-	-	70	(9.3)	70
Multidrug resistant §	-	-	-	-	55	(7.3)	55

* Drug susceptibility testing; § resistant to at least INH and RMP

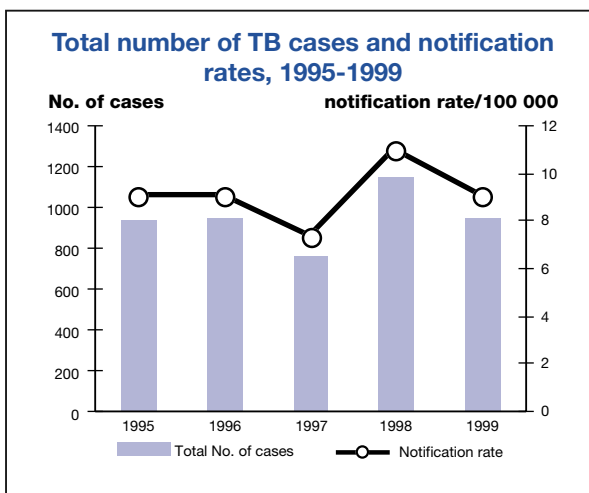
Tuberculosis notification rates by age group and sex, 1999



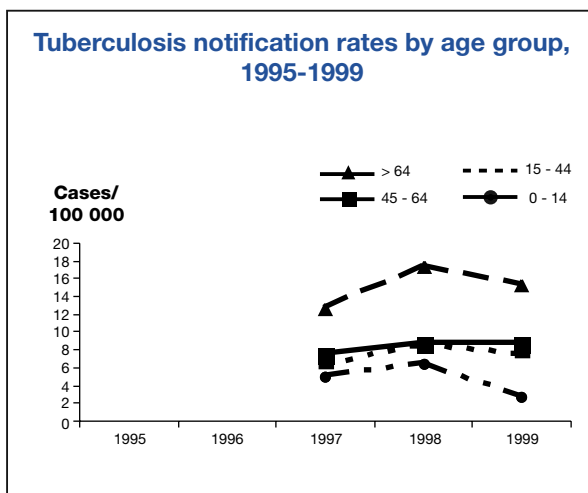
Tuberculosis cases by age group, geographic origin and sex, 1999



Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



note : Notification system reorganised in 1998

ICELAND

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	12	
Notification rate per 100 000	4.3	
Sex ratio (male/female)	1.0	
Median age (years)	40	
Individuals born abroad	8	(66.7%)
New (never treated)	8	(66.7%)
Culture positive	8	(66.7%)
Pulmonary	9	(75.0%)
among which sputum smear positive	4	(44.4%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	8/8 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	7	-	1	-	0	-	8
Resistant to INH	0	(0.0)	0	(0.0)	-	-	0
Resistant to RMP	0	(0.0)	0	(0.0)	-	-	0
Multidrug resistant §	0	(0.0)	0	(0.0)	-	-	0

* Drug susceptibility testing; § resistant to at least INH and RMP

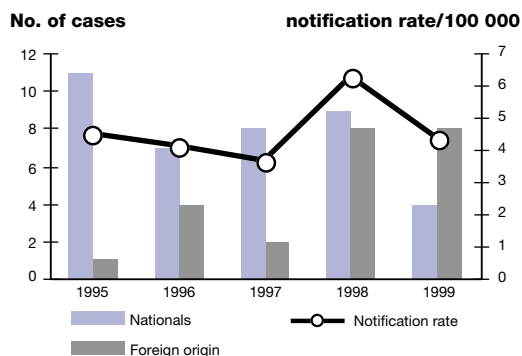
Tuberculosis notification rates by age group and sex, 1999

Insufficient number of cases for graphic presentation

Tuberculosis cases by age group, geographic origin and sex, 1999

Insufficient number of cases for graphic presentation

Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Insufficient number of cases for graphic presentation

IRELAND

Tuberculosis case notifications, 1999

Type of data provided	Individual
Total number of cases	469
Notification rate per 100 000	12.7
Sex ratio (male/female)	1.5
Median age (years)	46
Individuals born abroad	65 (13.9%)
New (never treated)	158 (33.7%)
Culture positive	260 (55.4%)
Pulmonary	329 (70.1%)
among which sputum smear positive	124 (37.7%)

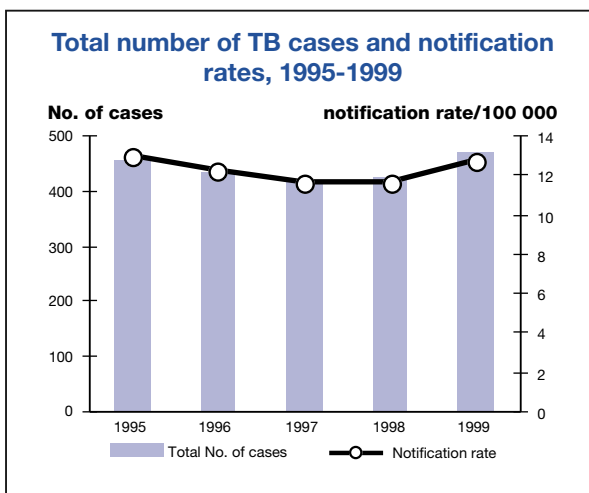
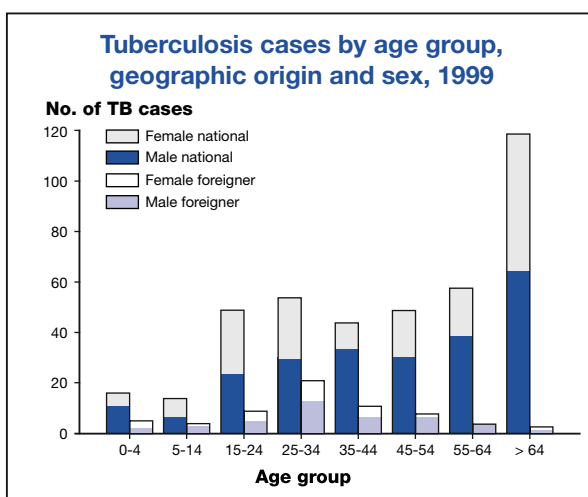
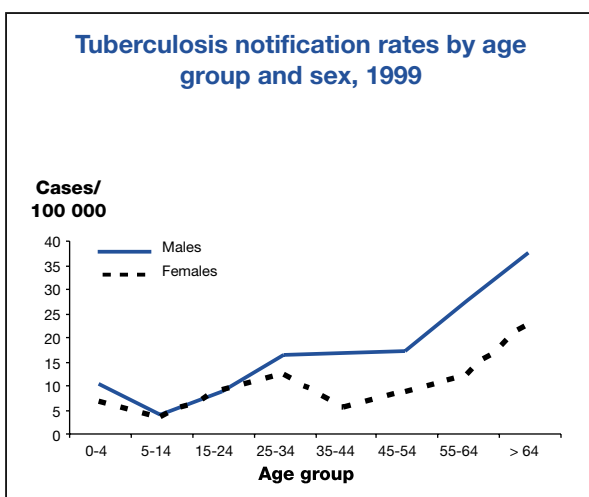
Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	260/260 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	101	-	22	-	137	-	260
Resistant to INH	2	(2.0)	0	(0.0)	8	(5.8)	10
Resistant to RMP	1	(1.0)	0	(0.0)	1	(0.7)	2
Multidrug resistant §	1	(1.0)	0	(0.0)	1	(0.7)	2

* Drug susceptibility testing; § resistant to at least INH and RMP



Tuberculosis notification rates by age group, 1995-1999

Not available

note: Notification system reorganised in 1998

ISRAEL

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	520	
Notification rate per 100 000	8.5	
Sex ratio (male/female)	1.4	
Median age (years)	-	
Individuals born abroad	449	(86.3%)
New (never treated)	481	(92.5%)
Culture positive	331	(63.7%)
Pulmonary	369	(71.0%)
among which sputum smear positive	190	(51.5%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	331/331 (100%)

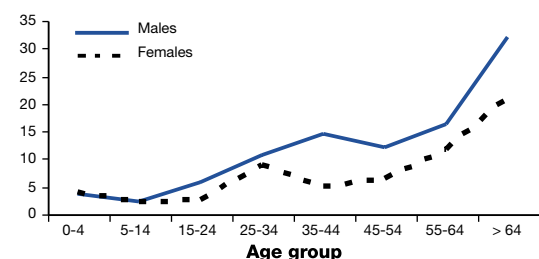
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	-	-	-	-	331	-	331
Resistant to INH	-	-	-	-	44	(13.3)	44
Resistant to RMP	-	-	-	-	28	(8.5)	28
Multidrug resistant §	-	-	-	-	26	(7.9)	26

* Drug susceptibility testing; § resistant to at least INH and RMP

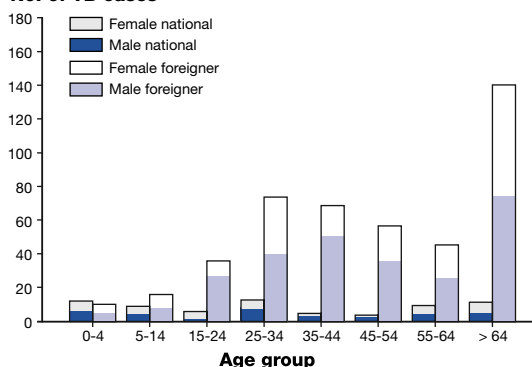
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

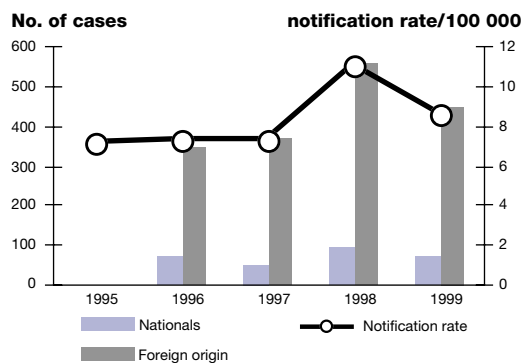


Tuberculosis cases by age group, geographic origin and sex, 1999

No. of TB cases

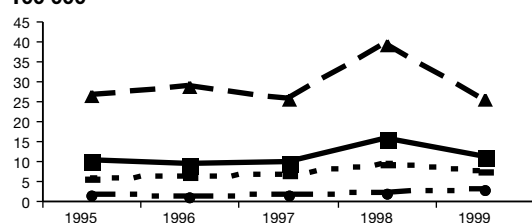


Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



note: Notification system reorganised in 1998

ITALY

Tuberculosis case notifications, 1999

Type of data provided	Individual*	
Total number of cases	4 429	
Notification rate per 100 000	7.7	
Sex ratio (male/female)	1.7	
Median age (years)	51	
Individuals born abroad	961	(21.7%)
New (never treated)	1 709	(38.6%)
Culture positive **	2 164	(65.8%)
Pulmonary	3 289	(74.3%)
among which sputum smear positive	1 637	(49.8%)

* Except DST data; ** Culture results available only for pulmonary cases

Drug resistance surveillance, 1998

Linkage with TB notifications	no
Geographic coverage	13 regions
Culture positive cases with DST* results	-

Note: TB cases diagnosed in 46 clinical centres in 13/20 regions

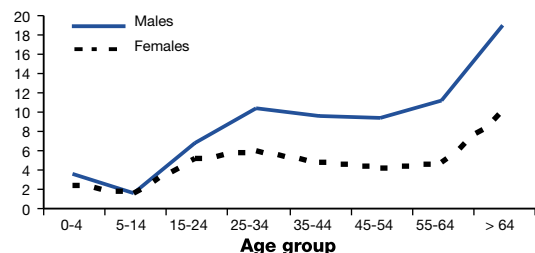
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	683	-	115	-	12	-	810
Resistant to INH	38	(5.6)	53	(46.1)	2	(16.7)	93
Resistant to RMP	15	(2.2)	55	(47.8)	2	(16.7)	72
Multidrug resistant §	8	(1.2)	42	(36.5)	1	(8.3)	51

* Drug susceptibility testing; § resistant to at least INH and RMP

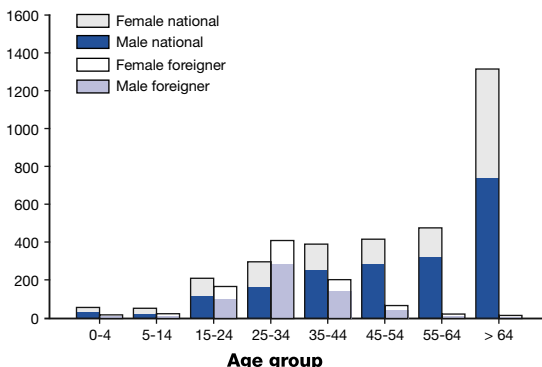
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

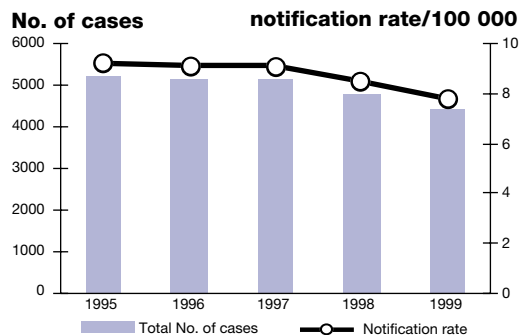


Tuberculosis cases by age group, geographic origin and sex, 1999

No. of TB cases

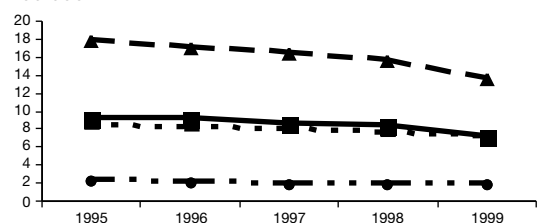


Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



LUXEMBOURG

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	42	
Notification rate per 100 000	9.9	
Sex ratio (male/female)	6.0	
Median age (years)	42	
Individuals born abroad	28	(66.7%)
New (never treated)	38	(90.5%)
Culture positive	42	(100%)
Pulmonary	41	(97.6%)
among which sputum smear positive	8	(19.5%)

Drug resistance surveillance, 1998

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	42/42 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	40	-	4	-	0	-	44
Resistant to INH	3	(7.5)	0	(0.0)	-	-	3
Resistant to RMP	1	(2.5)	0	(0.0)	-	-	1
Multidrug resistant §	1	(2.5)	0	(0.0)	-	-	1

* Drug susceptibility testing; § resistant to at least INH and RMP

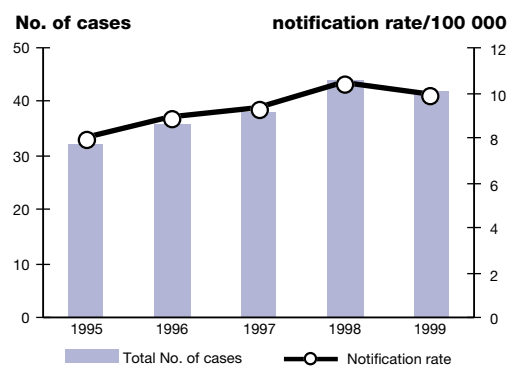
Tuberculosis notification rates by age group and sex, 1999

Insufficient number of cases for graphic presentation

Tuberculosis cases by age group, geographic origin and sex, 1999

Insufficient number of cases for graphic presentation

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Insufficient number of cases for graphic presentation

MALTA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	22	
Notification rate per 100 000	5.7	
Sex ratio (male/female)	3.4	
Median age (years)	63	
Individuals born abroad	7	(31.8%)
New (never treated)	22	(100%)
Culture positive	13	(59.1%)
Pulmonary	19	(86.4%)
among which sputum smear positive	5	(26.3%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	13/13 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	13	-	0	-	0	-	13
Resistant to INH	0	(0.0)	-	-	-	-	0
Resistant to RMP	0	(0.0)	-	-	-	-	0
Multidrug resistant §	0	(0.0)	-	-	-	-	0

* Drug susceptibility testing; § resistant to at least INH and RMP

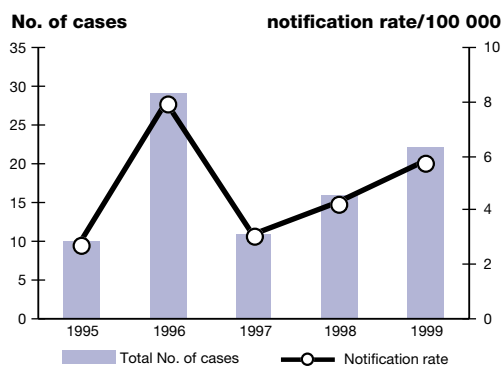
Tuberculosis notification rates by age group and sex, 1999

Insufficient number of cases for graphic presentation

Tuberculosis cases by age group, geographic origin and sex, 1999

Insufficient number of cases for graphic presentation

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Insufficient number of cases for graphic presentation

MONACO

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	3	
Notification rate per 100 000	8.8	
Sex ratio (male/female)	2.0	
Median age (years)	-	
Foreign citizens	2	(66.7%)
New (never treated)	3	(100%)
Culture positive	2	(66.7%)
Pulmonary	2	(66.7%)
among which sputum smear positive	2	(100%)

Drug resistance surveillance, 1999

Not available

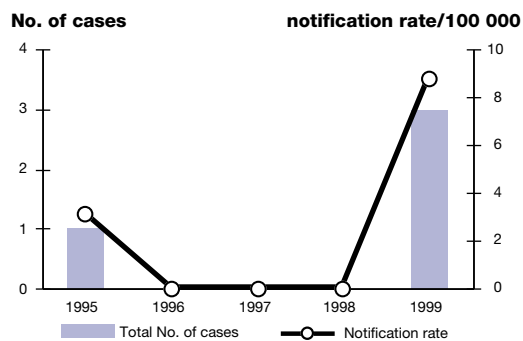
Tuberculosis notification rates by age group and sex, 1999

Insufficient number of cases for graphic presentation

Tuberculosis cases by age group, geographic origin and sex, 1999

Insufficient number of cases for graphic presentation

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Insufficient number of cases for graphic presentation

THE NETHERLANDS

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	1 535	
Notification rate per 100 000	9.8	
Sex ratio (male/female)	1.4	
Median age (years)	34	
Foreign citizens	898	(58.5%)
New (never treated)	1 459	(95.0%)
Culture positive	943	(61.4%)
Pulmonary	959	(62.5%)
among which sputum smear positive	345	(36.0%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	941/943 (100%)

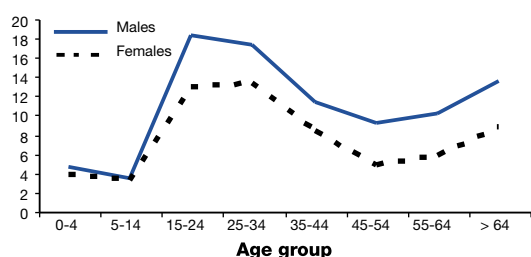
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	899	-	42	-	0	-	941
Resistant to INH	52	(5.8)	3	(7.1)	-	-	55
Resistant to RMP	7	(0.8)	1	(2.4)	-	-	8
Multidrug resistant §	4	(0.4)	0	(0.0)	-	-	4

* Drug susceptibility testing; § resistant to at least INH and RMP

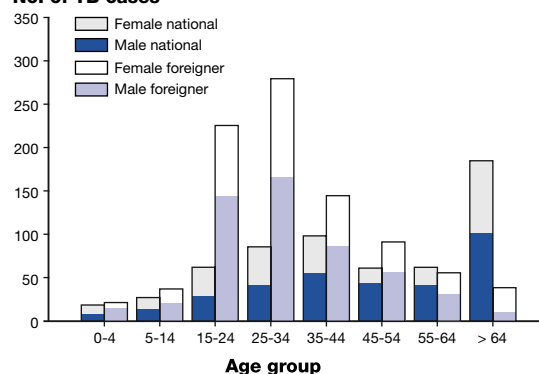
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

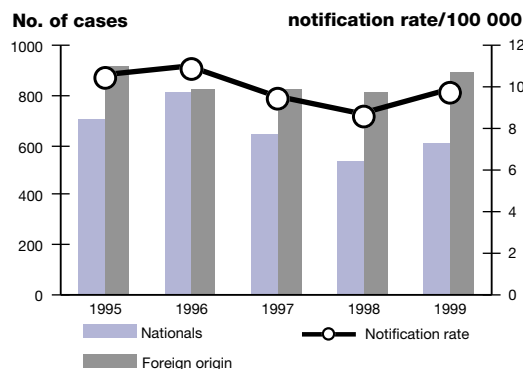


Tuberculosis cases by age group, geographic origin and sex, 1999

No. of TB cases

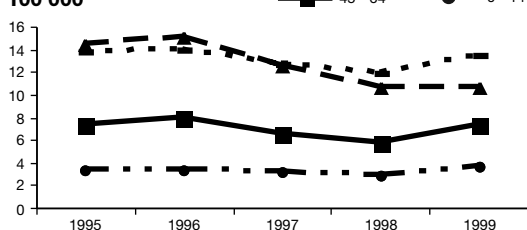


Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



NORWAY

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	273	
Notification rate per 100 000	6.1	
Sex ratio (male/female)	1.1	
Median age (years)	37	
Individuals born abroad	180	(65.9%)
New (never treated)	212	(77.7%)
Culture positive	186	(68.1%)
Pulmonary	163	(59.7%)
among which sputum smear positive	34	(20.9%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	184/186 (99%)

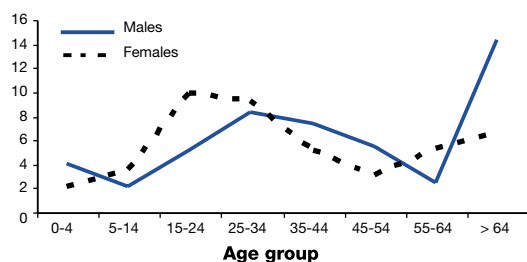
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	144	-	40	-	0	-	184
Resistant to INH	11	(7.6)	0	(0.0)	-	-	11
Resistant to RMP	3	(2.1)	0	(0.0)	-	-	3
Multidrug resistant §	3	(2.1)	0	(0.0)	-	-	3

* Drug susceptibility testing; § resistant to at least INH and RMP

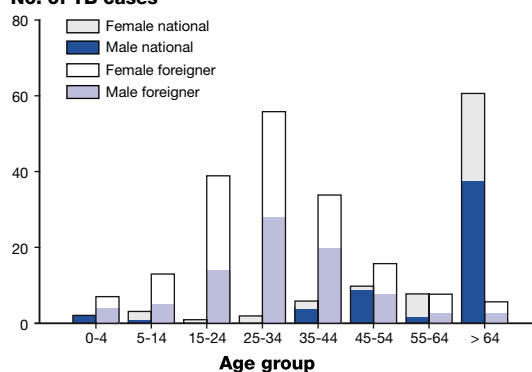
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

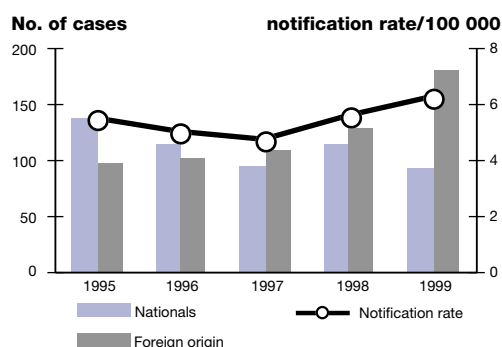


Tuberculosis cases by age group, geographic origin and sex, 1999

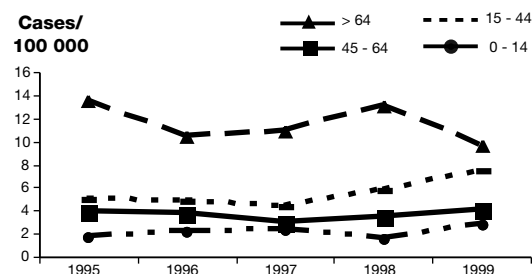
No. of TB cases



Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



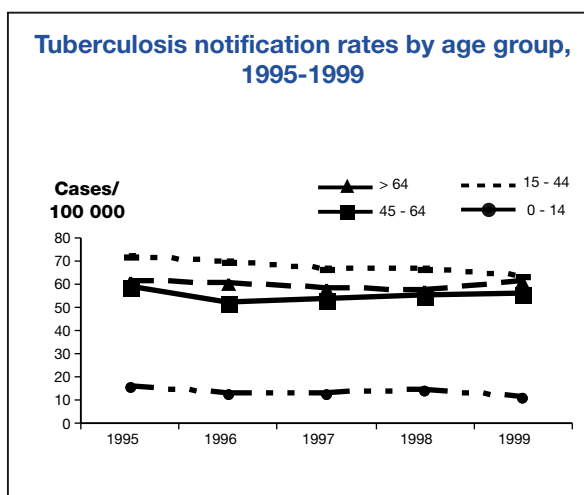
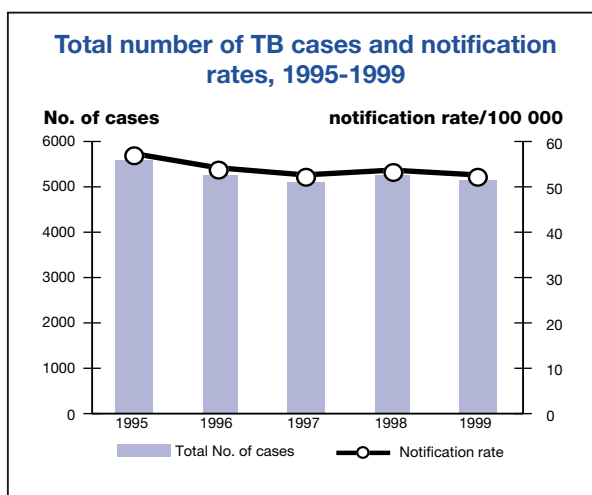
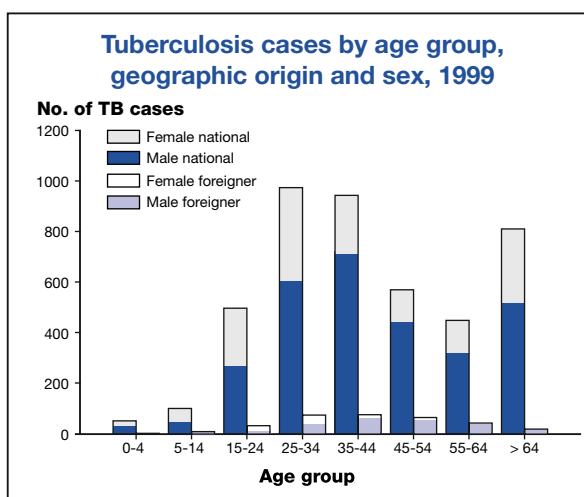
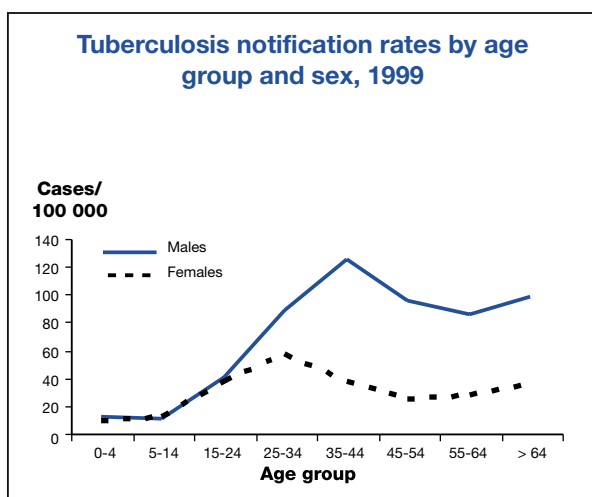
PORTUGAL

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	5 160	
Notification rate per 100 000	52.3	
Sex ratio (male/female)	2.1	
Median age (years)	-	
Individuals born abroad	325	(6.3%)
New (never treated)	4 599	(89.1%)
Culture positive	1 624	(31.5%)
Pulmonary	3 192	(61.9%)
among which sputum smear positive	1 801	(56.4%)

Drug resistance surveillance, 1999

Not available

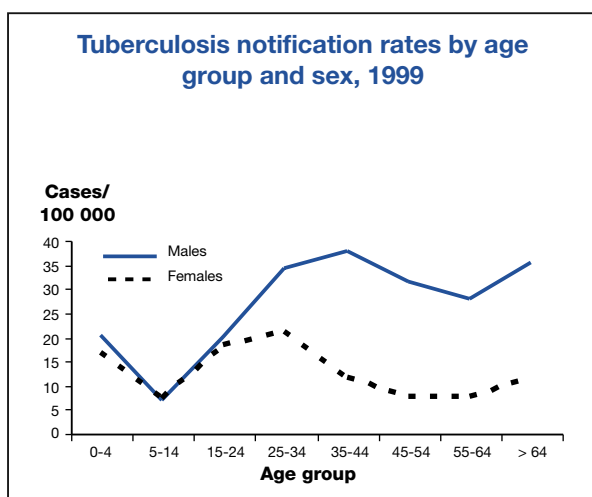


SPAIN

Tuberculosis case notifications*, 1999

Type of data provided	Aggregate	
Total number of cases	8 393	
Notification rate per 100 000	21.2	
Sex ratio (male/female)	2.1	
Median age (years)	-	
Individuals born abroad**	151	(1.8%)
New (never treated)	6 177	(73.6%)
Culture positive	3 817	(45.5%)
Respiratory*	6 481	(77.2%)
among which sputum smear positive	3 179	(49.1%)

* Respiratory and meningeal cases only; 22% of cases with unknown site of disease; ** 59% of cases with unknown geographic origin



Drug resistance surveillance, 1999

Linkage with TB notifications: no
 Geographic coverage: national
 Culture positive cases with DST* results: -

Note: New TB cases referred at the National Reference Laboratory

Resistant cases by previous anti-TB treatment status

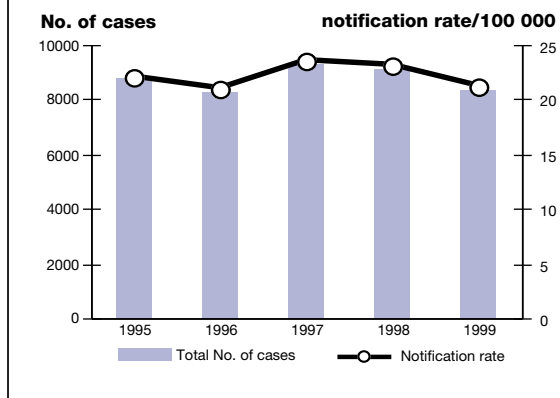
	New		Previously treated		Unknown		Total N
	N	(%)	N	(%)	N	(%)	
Tested	514	-	-	-	-	-	514
Resistant to INH	19	(3.7)	-	-	-	-	19
Resistant to RMP	4	(0.8)	-	-	-	-	4
Multidrug resistant §	3	(0.6)	-	-	-	-	3

* Drug susceptibility testing; § resistant to at least INH and RMP

Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



note : Change of case definition in 1997

Tuberculosis notification rates by age group, 1995-1999

Not available

SWEDEN

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	493	
Notification rate per 100 000	5.5	
Sex ratio (male/female)	1.1	
Median age (years)	41	
Individuals born abroad	319	(64.7%)
New (never treated)	456	(92.5%)
Culture positive	412	(83.6%)
Pulmonary	343	(69.6%)
among which sputum smear positive	129	(37.6%)

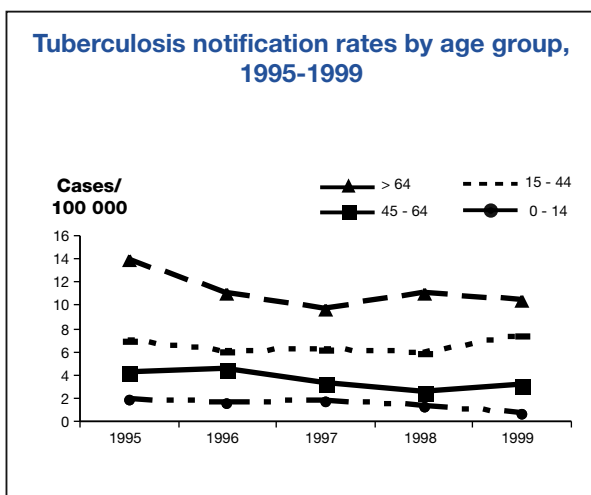
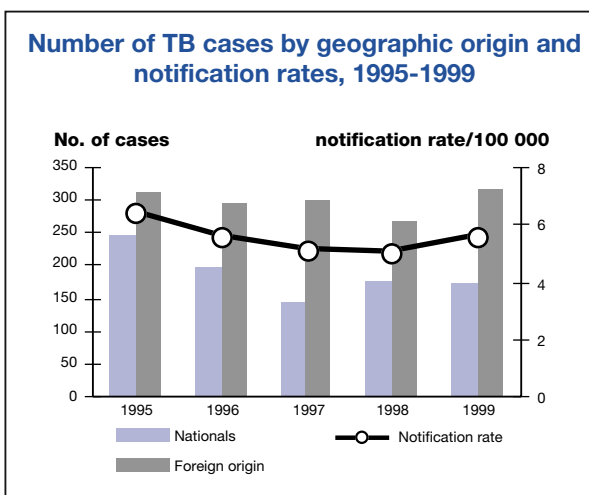
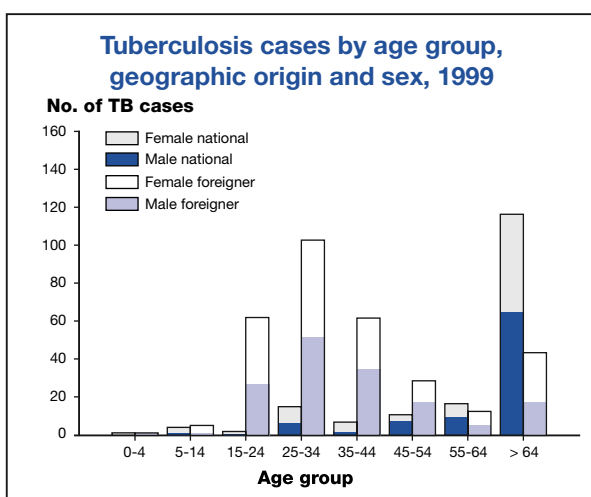
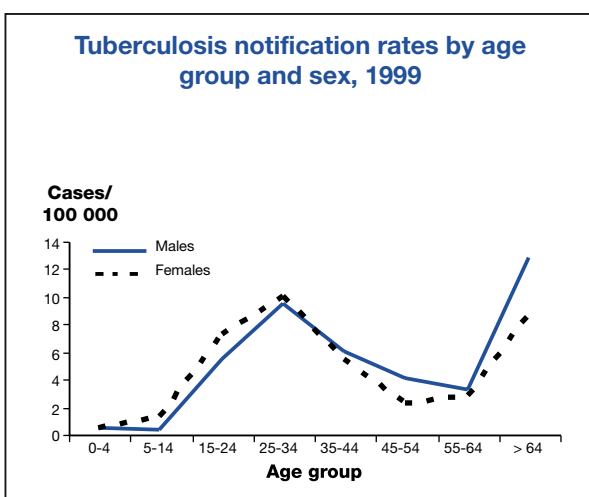
Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	408/412 (99%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	377	-	31	-	0	-	408
Resistant to INH	35	(9.3)	7	(22.6)	-	-	42
Resistant to RMP	5	(1.3)	4	(12.9)	-	-	9
Multidrug resistant §	3	(0.8)	4	(12.9)	-	-	7

* Drug susceptibility testing; § resistant to at least INH and RMP



SWITZERLAND

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	772	
Notification rate per 100 000	10.5	
Sex ratio (male/female)	1.3	
Median age (years)	40	
Individuals born abroad	469	(60.8%)
New (never treated)	534	(69.2%)
Culture positive	615	(79.7%)
Pulmonary	565	(73.2%)
among which sputum smear positive	130	(23.0%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	611/615 (99%)

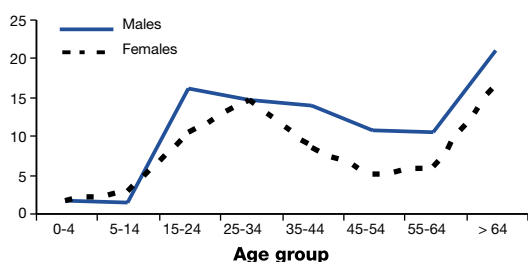
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	428	-	57	-	126	-	611
Resistant to INH	24	(5.6)	12	(21.1)	4	(3.2)	40
Resistant to RMP	4	(0.9)	6	(10.5)	3	(2.4)	13
Multidrug resistant §	3	(0.7)	6	(10.5)	2	(1.6)	11

* Drug susceptibility testing; § resistant to at least INH and RMP

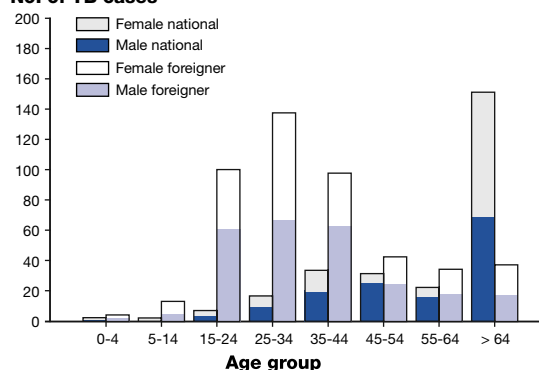
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

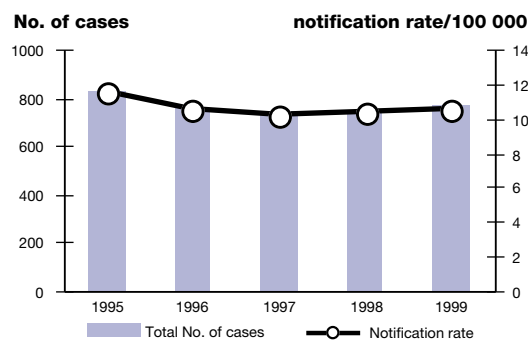


Tuberculosis cases by age group, geographic origin and sex, 1999

No. of TB cases

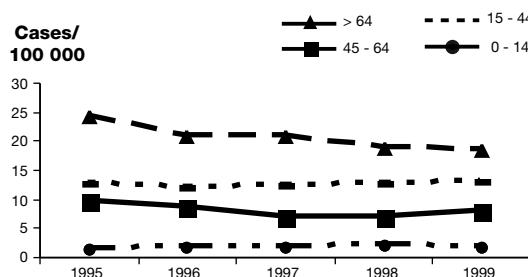


Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



UNITED KINGDOM

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	6 287	
Notification rate per 100 000	10.7	
Sex ratio (male/female)	1.2	
Median age (years)*	39	
Individuals born abroad * §	2 965	(47.2%)
New (never treated)	4 287	(68.2%)
Culture positive	3 400	(54.1%)
Pulmonary **	3 758	(59.8%)
among which sputum smear positive	1 052	(28.0%)

* Except Scotland; ** Respiratory classification for Scotland
§ 20% of cases with missing information

Drug resistance surveillance, 1999

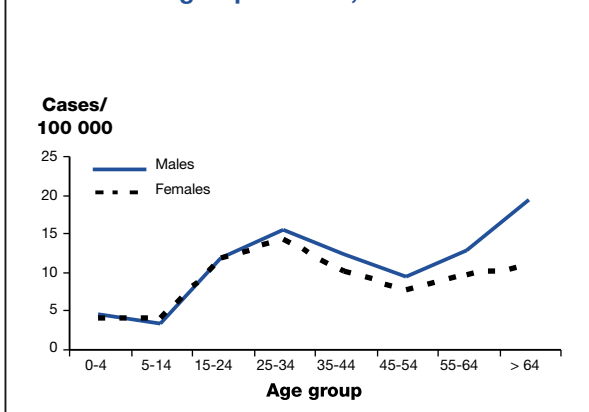
Linkage with TB notifications yes
Geographic coverage national (excl. Scotland)
Culture positive cases with DST* results 2 870/3 108 (92%)

Resistant cases by previous anti-TB treatment status

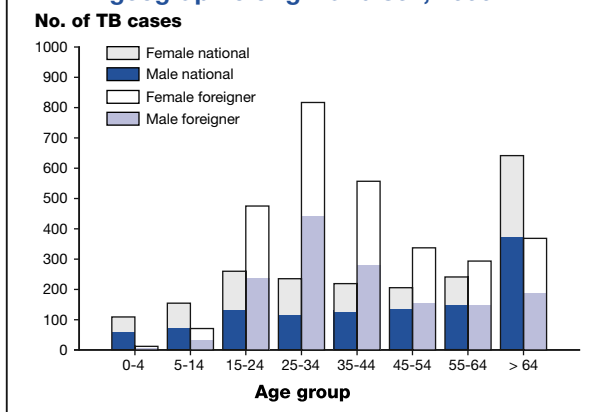
	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	2 138	-	220	-	512	-	2 870
Resistant to INH	133	(6.2)	10	(4.5)	27	(5.3)	170
Resistant to RMP	11	(0.5)	8	(3.6)	2	(0.4)	21
Multidrug resistant §	10	(0.5)	6	(2.7)	2	(0.4)	18

* Drug susceptibility testing; § resistant to at least INH and RMP

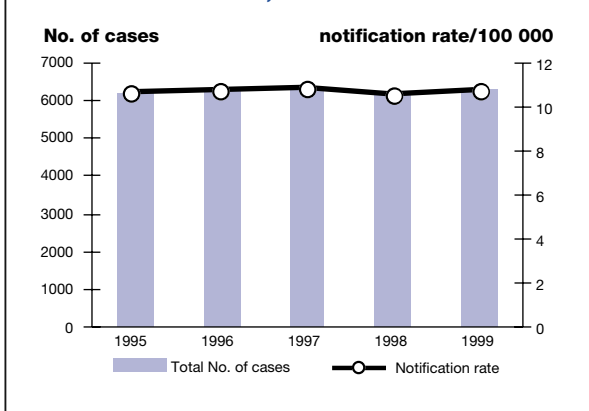
Tuberculosis notification rates by age group and sex, 1999



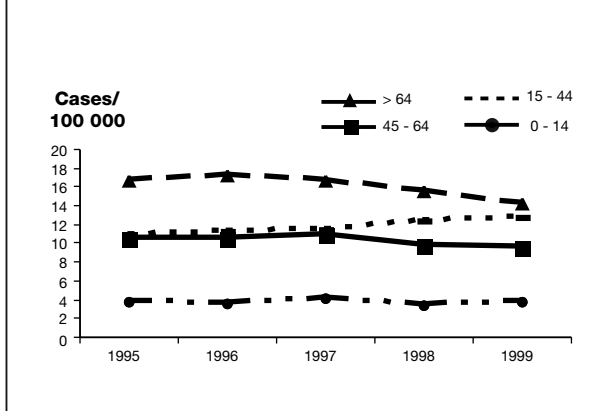
Tuberculosis cases by age group, geographic origin and sex, 1999



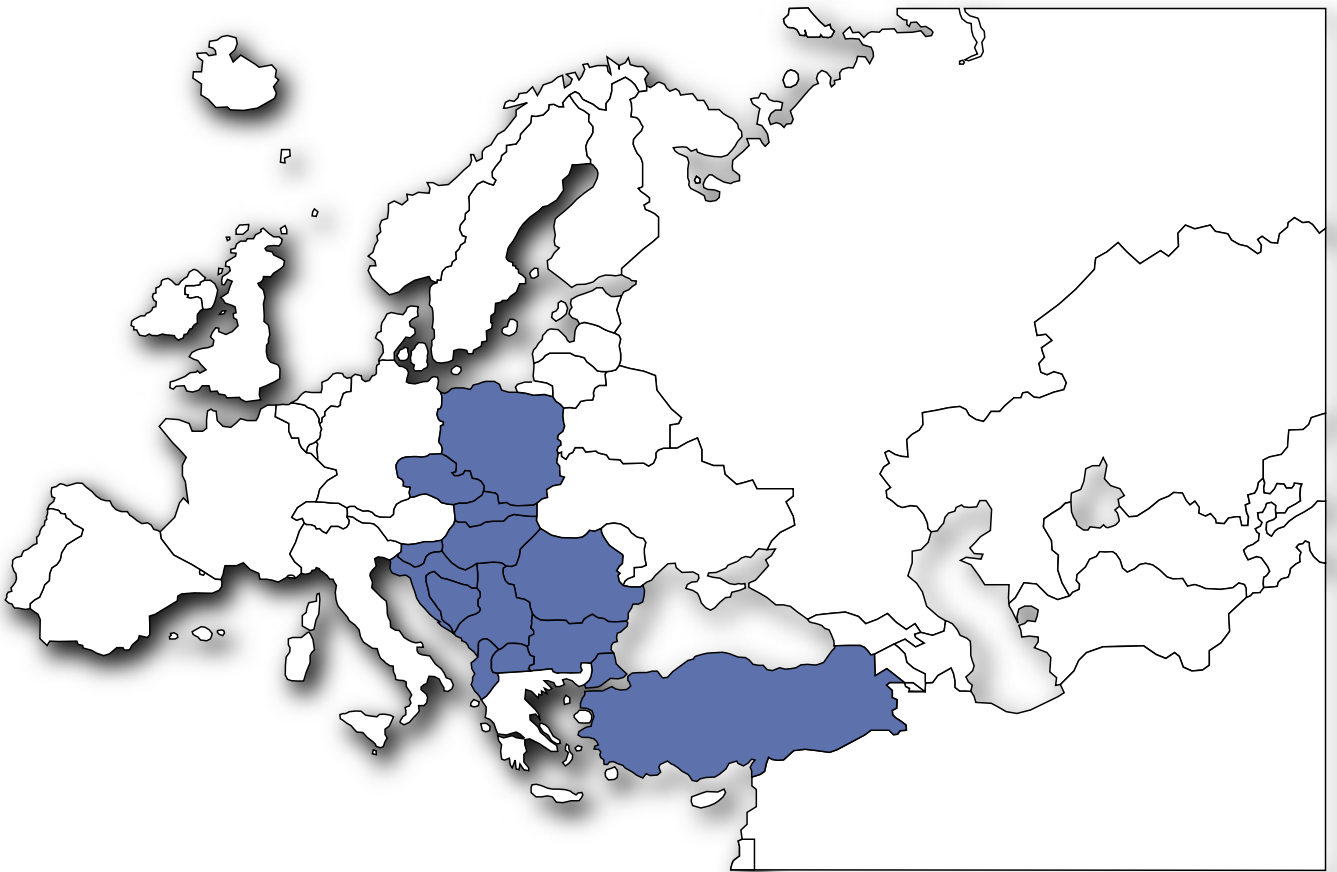
Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



Centre



ALBANIA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	765	
Notification rate per 100 000	24.6	
Sex ratio (male/female)	1.3	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	722	(94.4%)
Culture positive	215	(28.1%)
Pulmonary	504	(65.9%)
among which sputum smear positive	184	(36.5%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	some areas
Culture positive cases with DST* results	152/215 (71%)

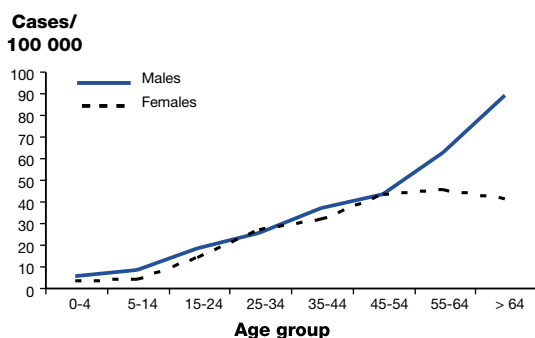
Note: Cases diagnosed at the University hospital in Tirana. Culture and DST not done routinely.

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown	Total
	N	(%)	N	(%)		
Tested	-	-	-	-	152	- 152
Resistant to INH	-	-	-	-	9	(5.9) 9
Resistant to RMP	-	-	-	-	10	(6.6) 10
Multidrug resistant §	-	-	-	-	5	(3.3) 5

* Drug susceptibility testing; § resistant to at least INH and RMP

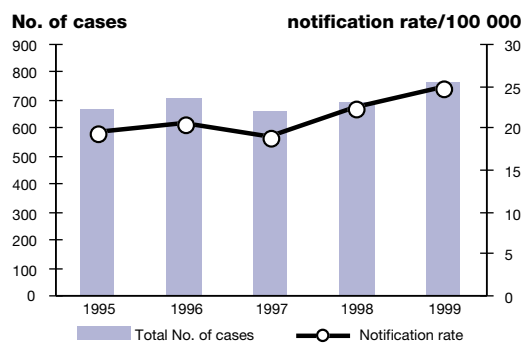
Tuberculosis notification rates by age group and sex, 1999



Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

BOSNIA-HERZEGOVINA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	3 075	
Notification rate per 100 000	80.1	
Sex ratio (male/female)	1.5	
Median age (years)	-	
Individuals born abroad	9	(0.3%)
New (never treated)	2 712	(88.2%)
Culture positive	1 748	(56.8%)
Pulmonary	2 749	(89.4%)
among which sputum smear positive	931	(33.9%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	1 349/1 748 (77%)

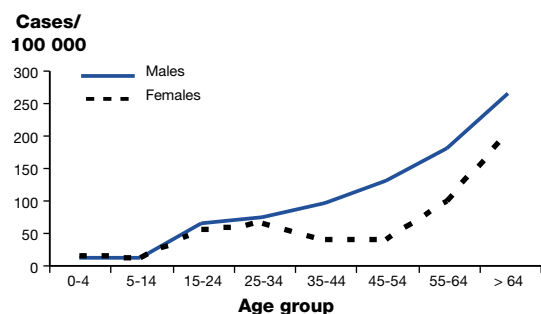
Note: data provided on selected cases in Republic Srpska

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	1 154	-	121	-	74	-	1 349
Resistant to INH	7	(0.6)	6	(5.0)	5	(6.8)	18
Resistant to RMP	9	(0.8)	10	(8.3)	5	(6.8)	24
Multidrug resistant §	3	(2.5)	3	(2.5)	1	(1.4)	7

* Drug susceptibility testing; § resistant to) at least INH and RMP

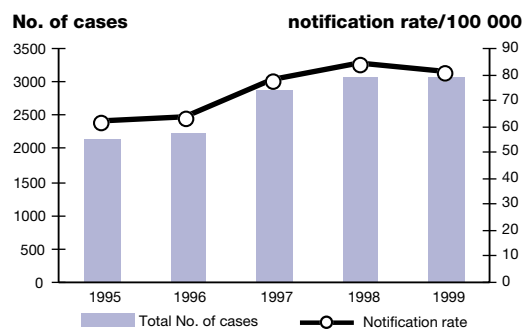
Tuberculosis notification rates by age group and sex, 1999



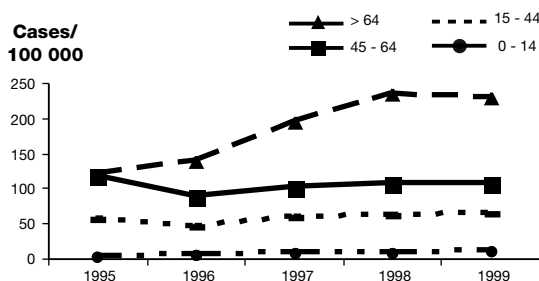
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



BULGARIA

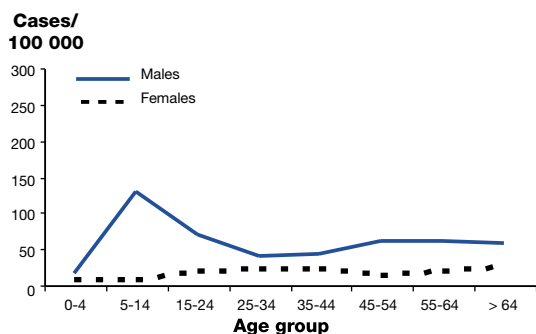
Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	3 530	
Notification rate per 100 000	42.6	
Sex ratio (male/female)	3.4	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	3 242	(91.8%)
Culture positive	-	-
Respiratory	3 265	(92.5%)
among which sputum smear positive	1 985	(60.8%)

Drug resistance surveillance, 1999

Not available

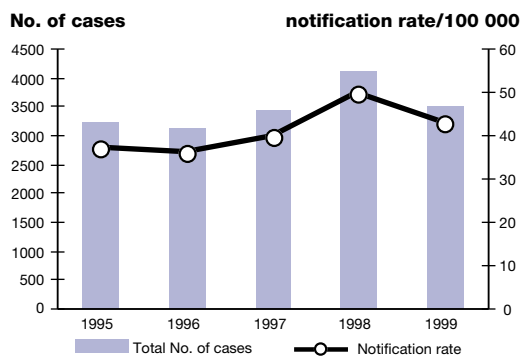
Tuberculosis notification rates by age group and sex, 1999



Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

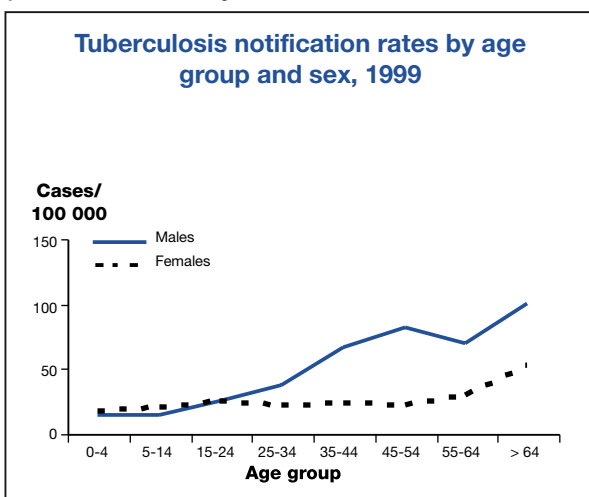
Not available

CROATIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	1 770	
Notification rate per 100 000	39.5	
Sex ratio (male/female)	1.8	
Median age (years)	48	
Individuals born abroad §	204	(11.5%)
New (never treated)	1 622	(91.6%)
Culture positive *	866	(70.2%)
Pulmonary	1 565	(88.4%)
among which sputum smear positive *	541	(49.5%)

* Data on a national sample of 1234 TB cases
 § 34% of cases with missing information



Drug resistance surveillance, 1999

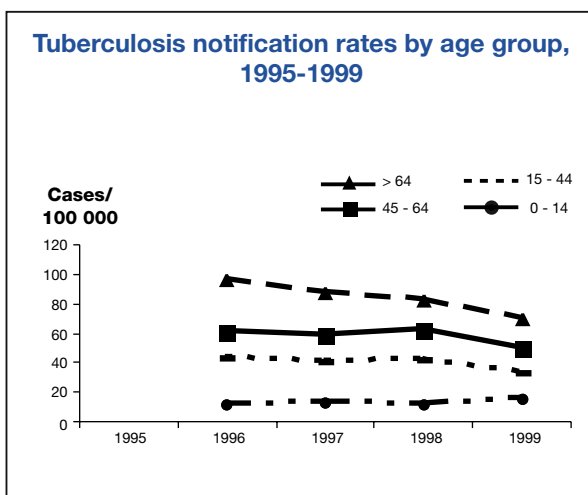
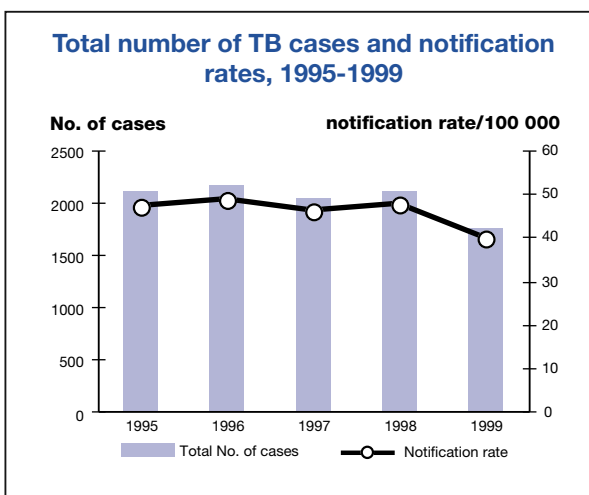
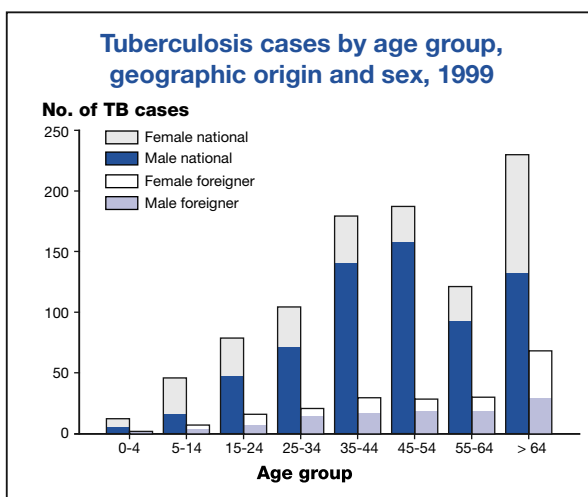
Linkage with TB notifications: yes (national sample)
 Geographic coverage: national
 Culture positive cases with DST* results: 861/866 (100%)

Note: data on a national sample of 1234 TB cases

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total N
	N	(%)	N	(%)	N	(%)	
Tested	761	-	93	-	7	-	861
Resistant to INH	14	(1.8)	3	(3.2)	1	(14.3)	18
Resistant to RMP	4	(0.5)	3	(3.2)	2	(28.6)	9
Multidrug resistant §	2	(0.3)	2	(2.2)	1	(14.3)	5

* Drug susceptibility testing; § resistant to at least INH and RMP



CZECH REPUBLIC

Tuberculosis case notifications, 1999

Type of data provided	Individual*	
Total number of cases	1 631	
Notification rate per 100 000	15.9	
Sex ratio (male/female)	1.5	
Median age (years)	59	
Individuals born abroad	135	(8.3%)
New (never treated)	1 431	(87.7%)
Culture positive	830	(50.9%)
Respiratory	1 330	(81.5%)
among which sputum smear positive	410	(30.8%)

* Except DST data

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	698/830 (84%)

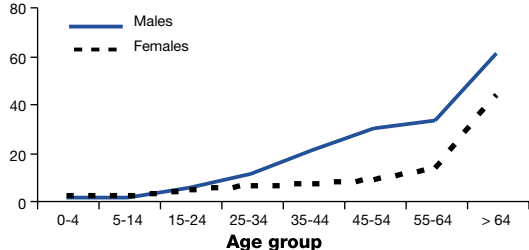
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	628	-	70	-	0	-	698
Resistant to INH	10	(1.6)	5	(7.1)	-	-	15
Resistant to RMP	5	(0.8)	3	(4.3)	-	-	8
Multidrug resistant §	2	(0.3)	2	(2.9)	-	-	4

* Drug susceptibility testing; § resistant to at least INH and RMP

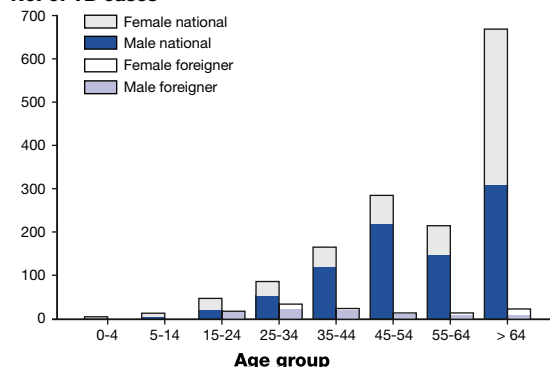
Tuberculosis notification rates by age group and sex, 1999

Cases/
100 000

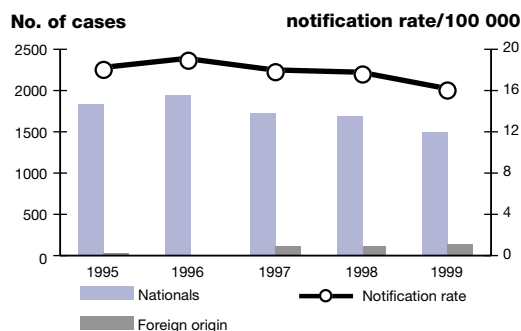


Tuberculosis cases by age group, geographic origin and sex, 1999

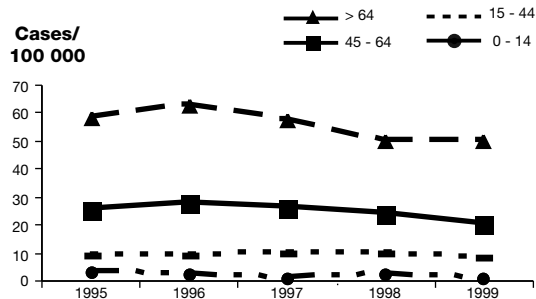
No. of TB cases



Number of TB cases by geographic origin and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



HUNGARY

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	3 914	
Notification rate per 100 000	38.8	
Sex ratio (male/female)	2.4	
Median age (years)	50	
Individuals born abroad	64	(1.6%)
New (never treated)	3 208	(82.0%)
Culture positive	1 206	(30.8%)
Pulmonary	3 682	(94.1%)
among which sputum smear positive	826	(22.4%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	559/1206 (46%)

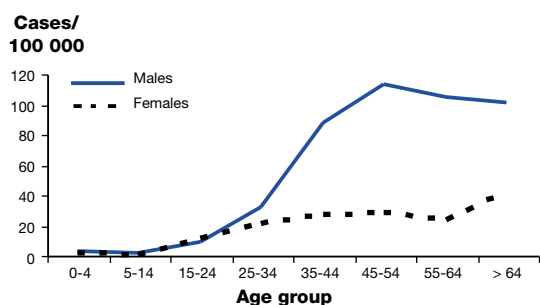
Note: culture and DST are performed on selected cases

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	456	-	103	-	0	-	559
Resistant to INH	33	(7.2)	19	(18.4)	-	-	52
Resistant to RMP	12	(2.6)	7	(6.8)	-	-	19
Multidrug resistant §	8	(1.8)	7	(6.8)	-	-	15

* Drug susceptibility testing; § resistant to at least INH and RMP

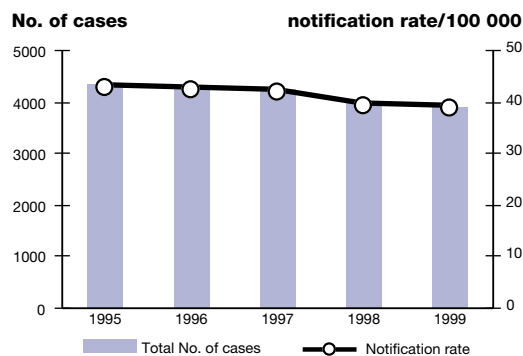
Tuberculosis notification rates by age group and sex, 1999



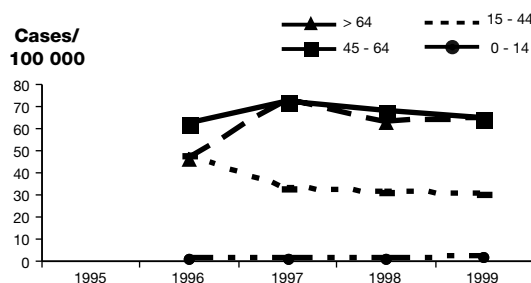
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



MACEDONIA, FYR

Tuberculosis case notifications, 1999

Type of data provided	Aggregate
Total number of cases	576
Notification rate per 100 000	28.6
Sex ratio (male/female)	1.6
Median age (years)	-
Foreign citizens / individuals born abroad *	-
New (never treated)	532 (92.4%)
Culture positive	-
Respiratory	489 (84.9%)
among which sputum smear positive	-

* Foreigners not included in TB notifications

Drug resistance surveillance, 1998

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	194/194 (100%)

Note: culture and DST not routinely done

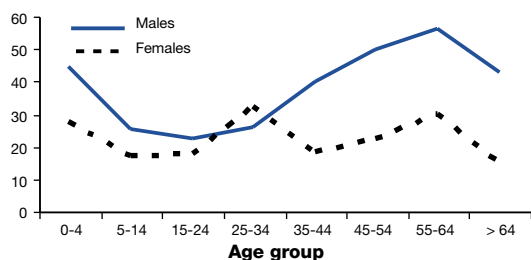
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	0	-	0	-	194	-	194
Resistant to INH	-	-	-	-	16	(8.2)	16
Resistant to RMP	-	-	-	-	5	(2.6)	5
Multidrug resistant §	-	-	-	-	3	(1.5)	3

* Drug susceptibility testing; § resistant to at least INH and RMP

Tuberculosis notification rates by age group and sex, 1999

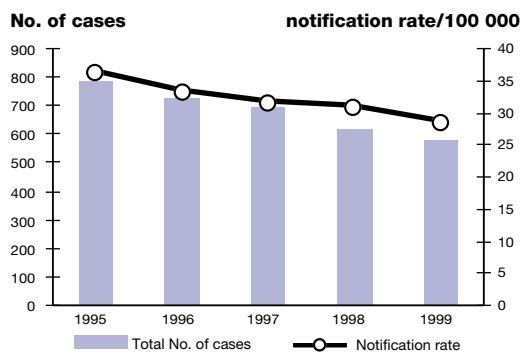
Cases/
100 000



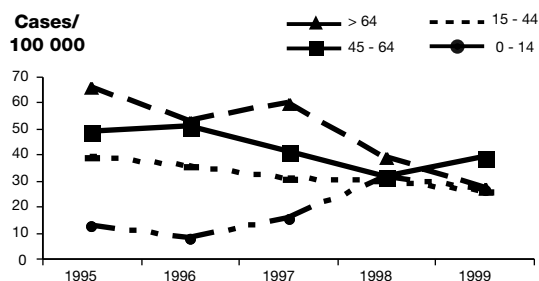
Tuberculosis cases by age group, geographic origin and sex, 1999

Foreigners not included in TB notifications

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



POLAND

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	12 179	
Notification rate per 100 000	31.4	
Sex ratio (male/female)	2.0	
Median age (years)	-	
Foreign citizens / individuals born abroad*	-	-
New (never treated)	10 709	(87.9%)
Culture positive	6 700	(55.0%)
Respiratory	11 641	(95.6%)
among which sputum smear positive	4 636	(39.8%)

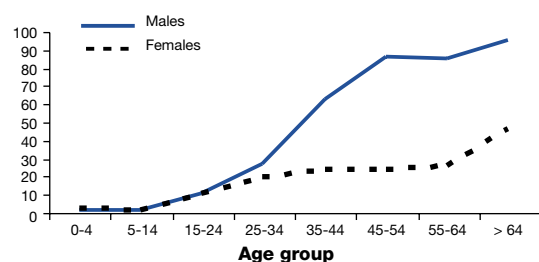
* Foreigners not included in TB notifications

Drug resistance surveillance, 1999

Not available

Tuberculosis notification rates by age group and sex, 1999

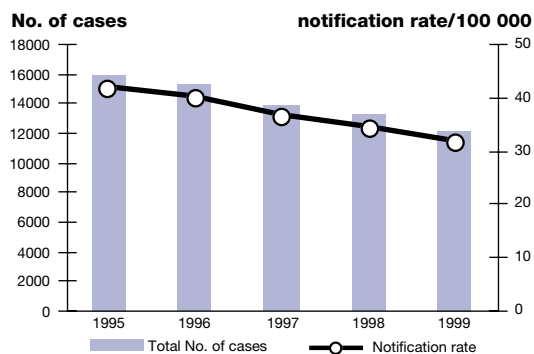
Cases/
100 000



Tuberculosis cases by age group, geographic origin and sex, 1999

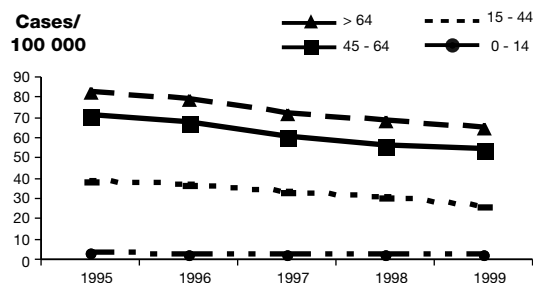
Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Cases/
100 000



ROMANIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	26 870	
Notification rate per 100 000	119.9	
Sex ratio (male/female)	2.3	
Median age (years)	40	
Foreign citizens	2	(0.0%)
New (never treated)	23 320	(86.8%)
Culture positive	13 495	(50.2%)
Pulmonary	23 149	(86.2%)
among which sputum smear positive	12 788	(55.2%)

Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	2 542/13 479 (19%)

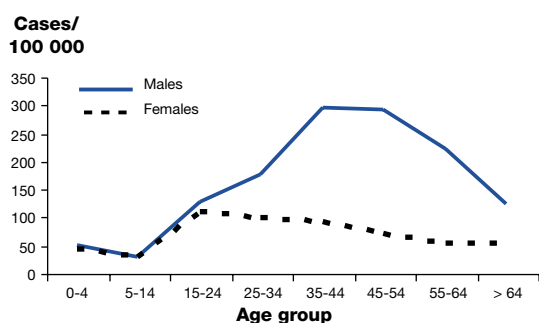
Note: Culture and DST are performed on selected cases

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	2 114	-	428	-	0	-	2 542
Resistant to INH	190	(9.0)	99	(23.1)	-	-	289
Resistant to RMP	111	(5.3)	63	(14.7)	-	-	174
Multidrug resistant §	76	(3.6)	49	(11.4)	-	-	125

* Drug susceptibility testing; § resistant to at least INH and RMP

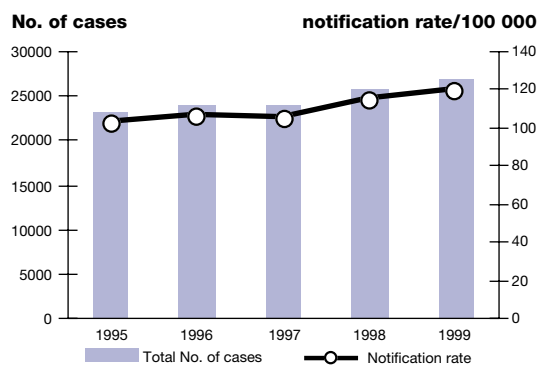
Tuberculosis notification rates by age group and sex, 1999



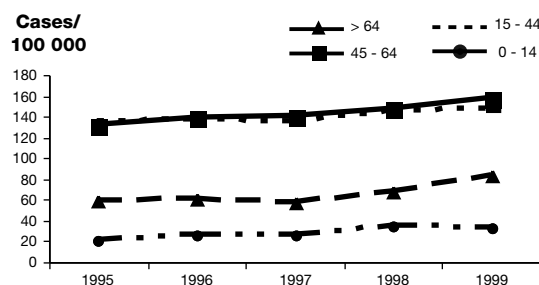
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



SLOVAKIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	1 218	
Notification rate per 100 000	22.6	
Sex ratio (male/female)	1.6	
Median age (years)	57	
Individuals born abroad	4	(0.3%)
New (never treated)	970	(79.6%)
Culture positive	645	(53.0%)
Pulmonary	993	(81.5%)
among which sputum smear positive	307	(30.9%)

Drug resistance surveillance, 1999

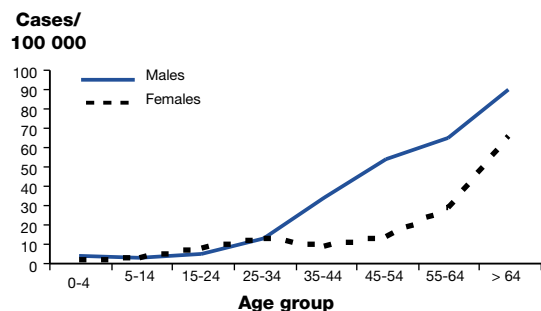
Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	578/645 (90%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	456	-	122	-	0	-	578
Resistant to INH	8	(1.8)	6	(4.9)	-	-	14
Resistant to RMP	5	(1.1)	5	(4.1)	-	-	10
Multidrug resistant §	3	(0.7)	3	(2.5)	-	-	6

* Drug susceptibility testing; § resistant to at least INH and RMP

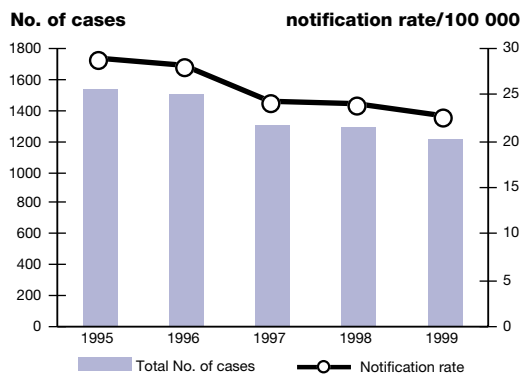
Tuberculosis notification rates by age group and sex, 1999



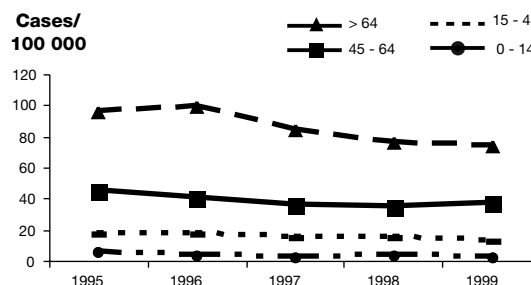
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



SLOVENIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	438	
Notification rate per 100 000	22.0	
Sex ratio (male/female)	1.6	
Median age (years)	47	
Individuals born abroad	103	(23.5%)
New (never treated)	391	(89.3%)
Culture positive	350	(79.9%)
Pulmonary	362	(82.6%)
among which sputum smear positive	191	(52.8%)

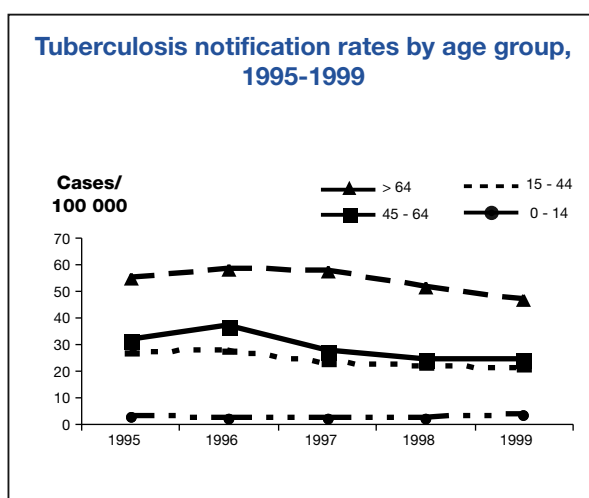
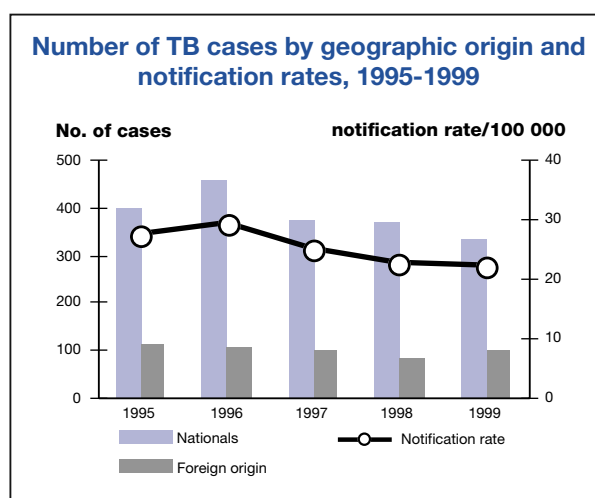
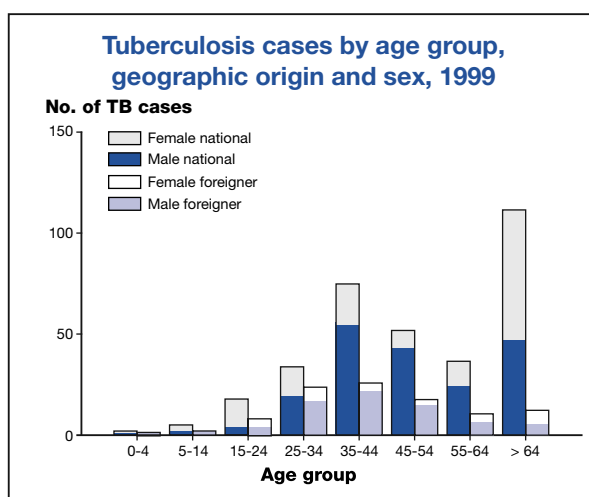
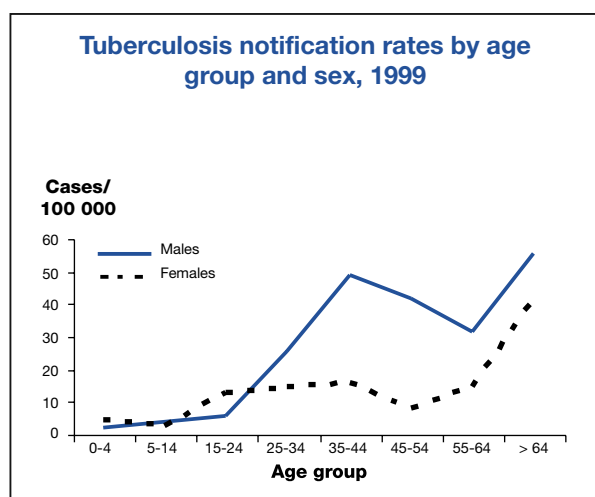
Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	339/350 (97%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	304	-	35	-	0	-	339
Resistant to INH	7	(2.3)	2	(5.7)	-	-	9
Resistant to RMP	0	(0.0)	2	(5.7)	-	-	2
Multidrug resistant §	0	(0.0)	2	(5.7)	-	-	2

* Drug susceptibility testing; § resistant to at least INH and RMP



TURKEY

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	22 088	
Notification rate per 100 000	33.7	
Sex ratio (male/female)	-	
Median age (years)	-	
Foreign citizens / individuals born abroad*	-	-
New (never treated)	18 752	(84.9%)
Culture positive	-	-
Respiratory	18 314	(82.9%)
among which sputum smear positive	7 460	(40.7%)

* Foreigners not included in TB notifications

Drug resistance surveillance, 1999

Not available

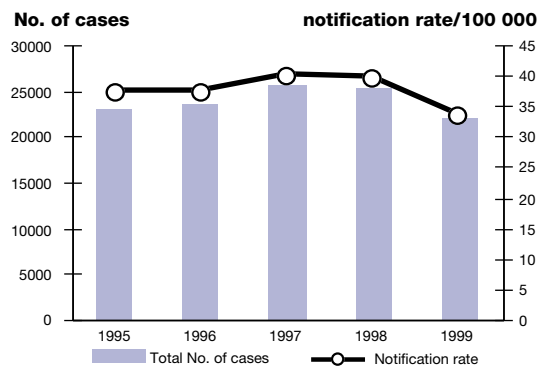
Tuberculosis notification rates by age group and sex, 1999

Not available

Tuberculosis cases by age group, geographic origin and sex, 1999

Foreigners not included in TB notification

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

YUGOSLAVIA

Tuberculosis case notifications*, 1999

Type of data provided	Aggregate	
Total number of cases	2 646	
Notification rate per 100 000	28.4*	
Sex ratio (male/female)	1.9	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	2 399	(90.7%)
Culture positive	-	-
Pulmonary	2 517	(95.1%)
among which sputum smear positive	-	-

* Without Kosovo and Metohija

Drug resistance surveillance, 1999

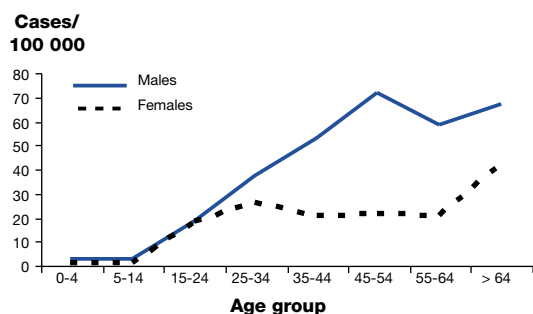
Linkage with TB notifications	yes
Geographic coverage	Belgrade region
Culture positive cases with DST* results	331/331 (100%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	290	-	41	-	0	-	331
Resistant to INH	2	(0.7)	2	(4.9)	-	-	4
Resistant to RMP	1	(0.3)	2	(4.9)	-	-	3
Multidrug resistant §	0	(0.0)	2	(4.9)	-	-	2

* Drug susceptibility testing; § resistant to at least INH and RMP

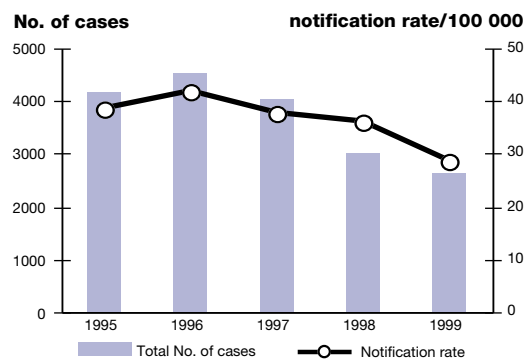
Tuberculosis notification rates by age group and sex, 1999



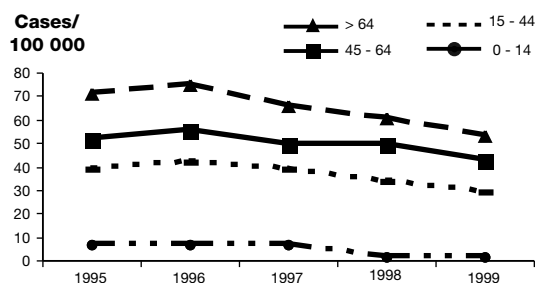
Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



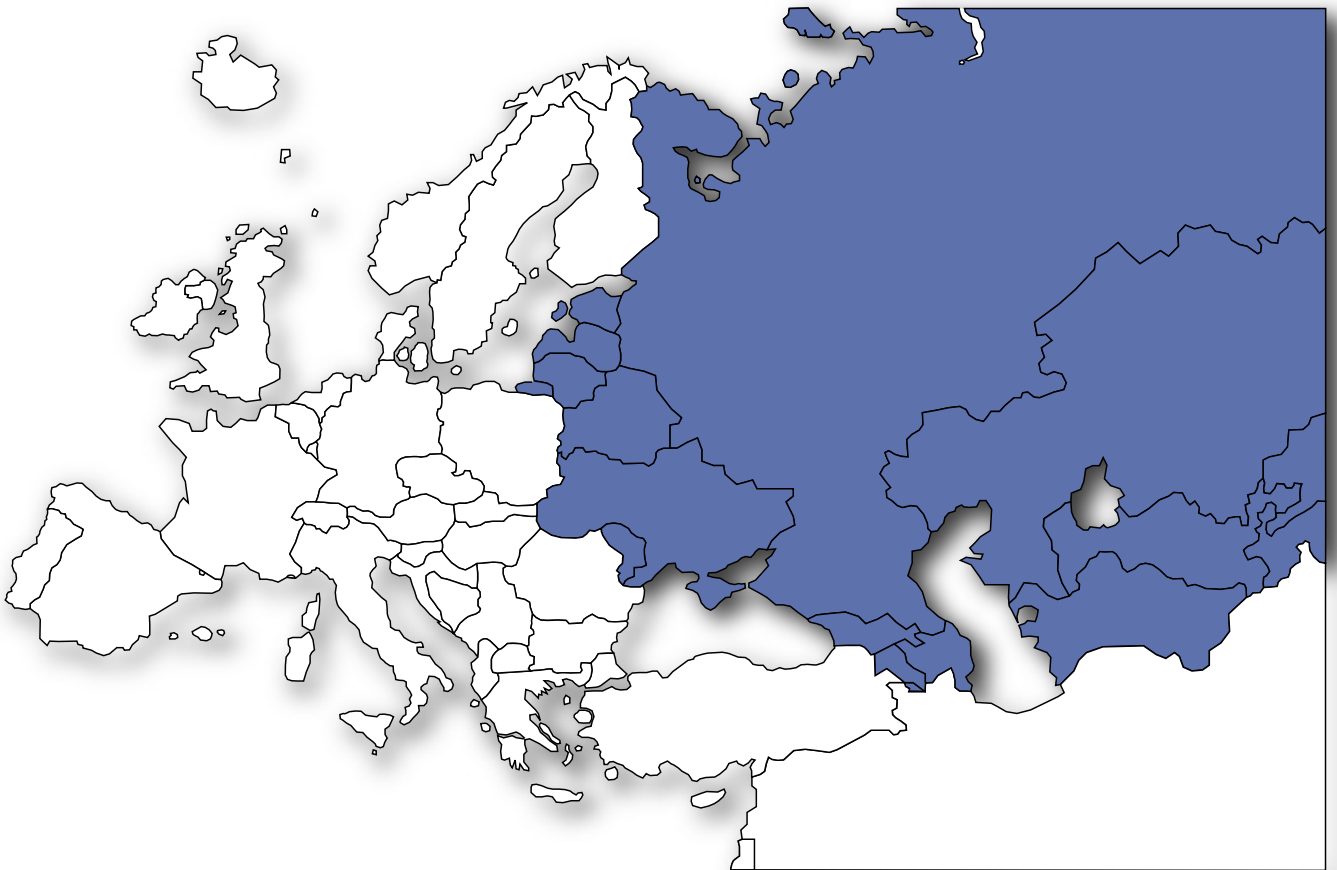
Tuberculosis notification rates by age group, 1995-1999



note : Since 1998, cases from Kosovo and Metohija not included

COUNTRY PROFILES

East



ARMENIA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	1 499	
Notification rate per 100 000	42.5	
Sex ratio (male/female)*	4.9	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	1 434	(95.7%)
Culture positive	576	(38.4%)
Pulmonary	1 232	(82.2%)
among which sputum smear positive	641	(52.0%)

* Provided on new cases only

Drug resistance surveillance, 1999

Linkage with TB notifications no
 Geographic coverage some areas
 Culture positive cases with DST* results -

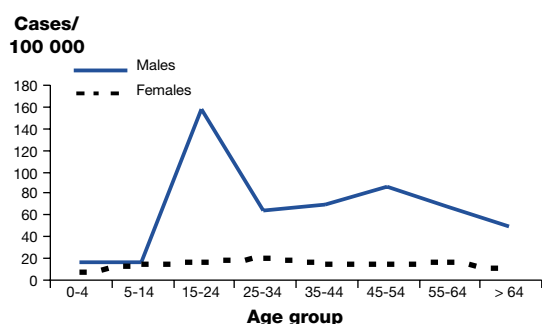
Note: Data on cases diagnosed at the National Reference Laboratory. Culture and DST not routinely performed

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	104	-	63	-	0	-	167
Resistant to INH	9	(8.7)	13	(20.6)	0	-	22
Resistant to RMP	7	(6.7)	23	(36.5)	0	-	30
Multidrug resistant §	3	(2.9)	8	(12.7)	0	-	11

* Drug susceptibility testing; § resistant to at least INH and RMP

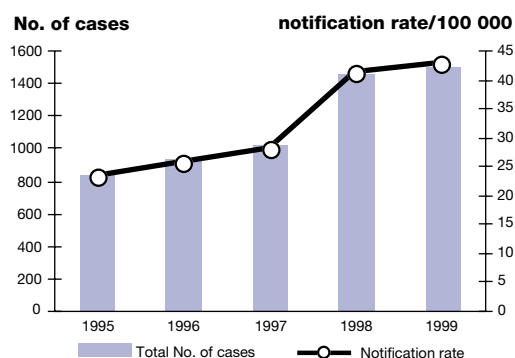
Tuberculosis notification rates by age group and sex, 1999



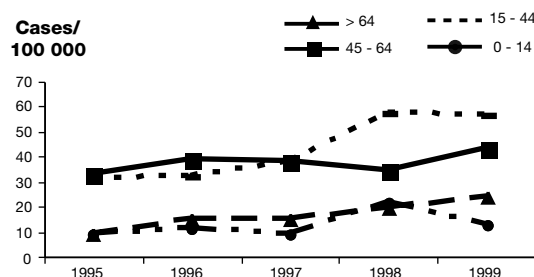
Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



AZERBAIJAN

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	4 629	
Notification rate per 100 000	61.0	
Sex ratio (male/female)	2.8	
Median age (years)	-	
Foreign citizens / individuals born abroad *	-	-
New (never treated)	4 559	(98.5%)
Culture positive	210	(4.5%)
Respiratory	3 693	(79.8%)
among which sputum smear positive	763	(20.7%)

* Not included in TB notifications

Drug resistance surveillance, 1999

Not available

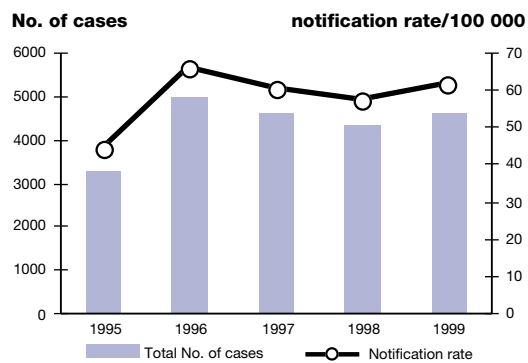
Tuberculosis notification rates by age group and sex, 1999

Not available

Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

BELARUS

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	7 339	
Notification rate per 100 000	71.4	
Sex ratio (male/female)*	3.2	
Median age (years)	-	
Foreign citizens / individuals born abroad**	-	-
New (never treated)	6 729	(91.7%)
Culture positive	-	-
Respiratory	6 869	(93.6%)
among which sputum smear positive	-	-

* New cases only; ** Foreigners not included in TB notifications

Drug resistance surveillance, 1999

Not available

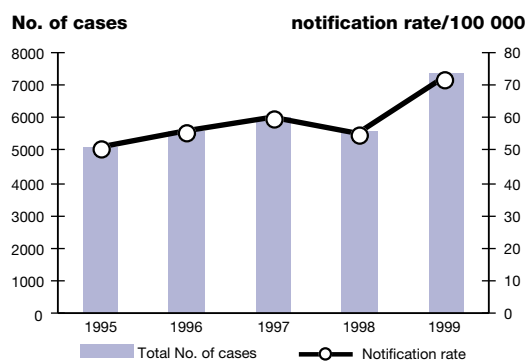
Tuberculosis notification rates by age group and sex, 1999

Not available

Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

ESTONIA

Tuberculosis case notifications, 1999

Type of data provided	Individual	
Total number of cases	754	
Notification rate per 100 000	53.4	
Sex ratio (male/female)	2.4	
Median age (years)	43	
Individuals born abroad	167	(22.1%)
New (never treated)	642	(85.1%)
Culture positive	528	(70.0%)
Pulmonary	687	(91.1%)
among which sputum smear positive	305	(44.4%)

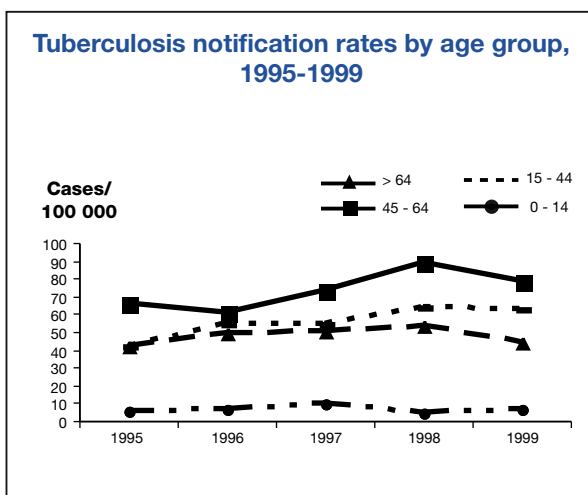
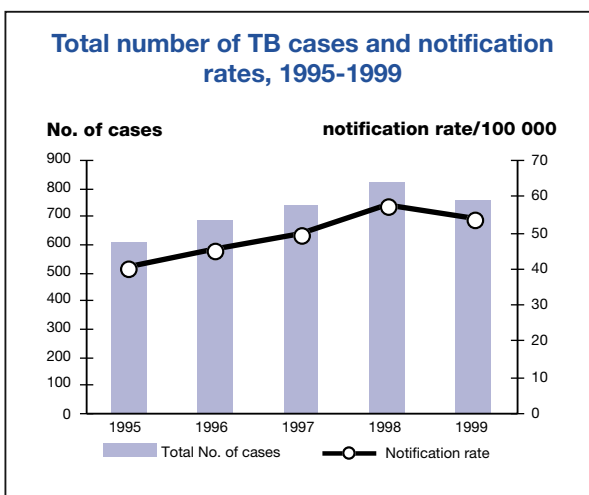
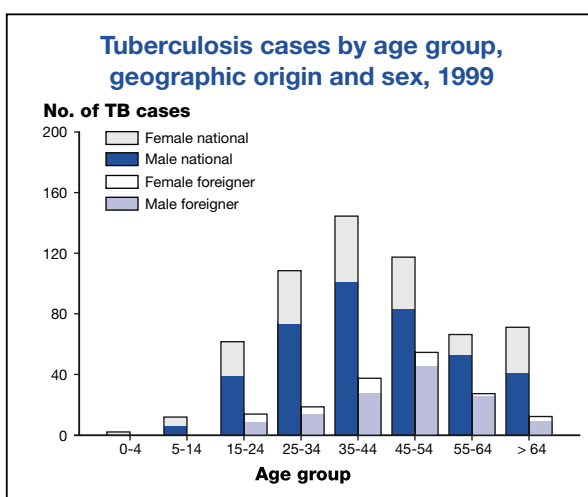
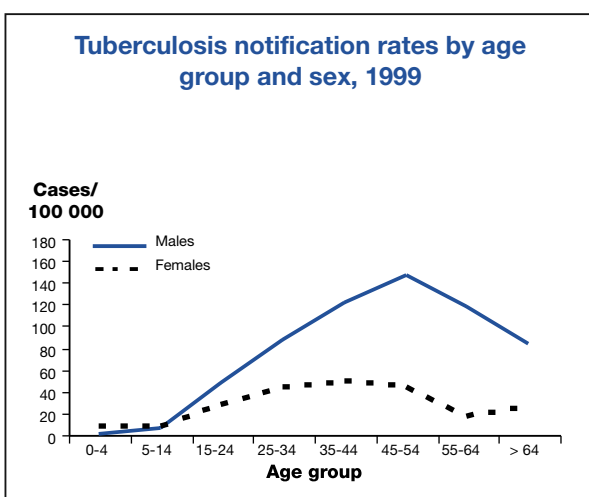
Drug resistance surveillance, 1999

Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	517/524 (99%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	428	-	89	-	0	-	517
Resistant to INH	117	(27.3)	48	(53.9)	-	-	165
Resistant to RMP	76	(17.8)	43	(48.3)	-	-	119
Multidrug resistant §	75	(17.5)	43	(48.3)	-	-	118

* Drug susceptibility testing; § resistant to at least INH and RMP



GEORGIA

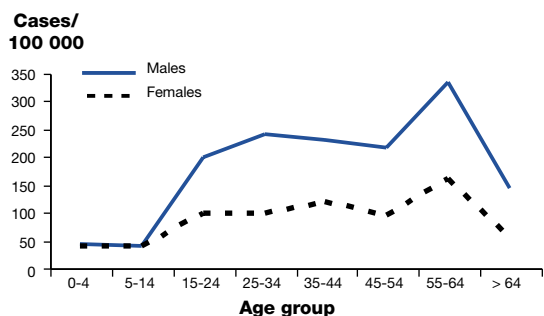
Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	6 546	
Notification rate per 100 000	130.8	
Sex ratio (male/female)	1.9	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	4 478	(68.4%)
Culture positive	1 147	(18%)
Pulmonary	4 827	(73.7%)
among which sputum smear positive	1 399	(29.0%)

Drug resistance surveillance, 1999

Not available

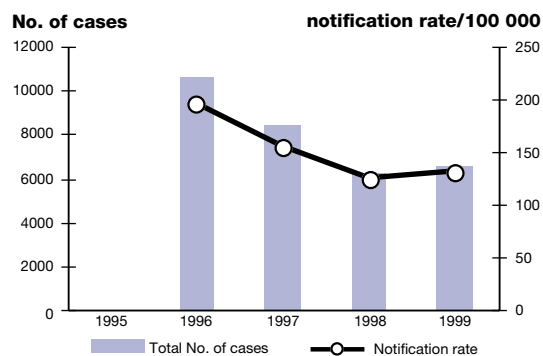
Tuberculosis notification rates by age group and sex, 1999



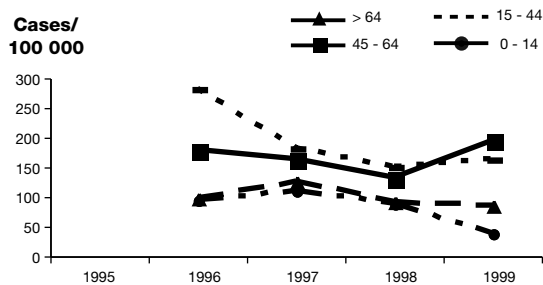
Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



KAZAKHSTAN

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	25 060	
Notification rate per 100 000	154.0	
Sex ratio (male/female)	1.3	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	20 912	(83.4%)
Culture positive	-	-
Respiratory	22 560	(90.0%)
among which sputum smear positive	9 801	(43.4%)

Drug resistance surveillance, 1999

Linkage with TB notifications no
 Geographic coverage national
 Culture positive cases with DST* results -

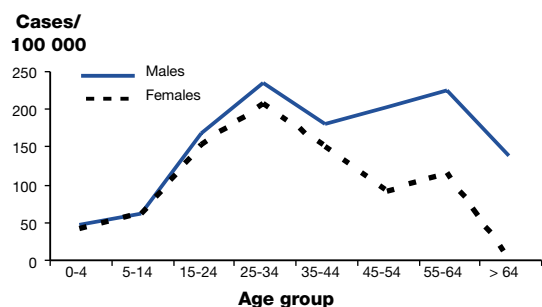
Note: culture and DST performed on selected cases

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	2 024	-	2 472	-	0	-	4 496
Resistant to INH	397	(19.6)	1 099	(44.5)	-	-	1 496
Resistant to RMP	186	(9.2)	717	(29.0)	-	-	903
Multidrug resistant §	110	(5.4)	511	(20.7)	-	-	621

* Drug susceptibility testing; § resistant to at least INH and RMP

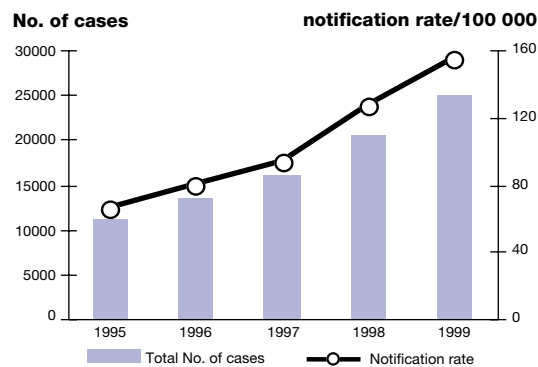
Tuberculosis notification rates by age group and sex, 1999



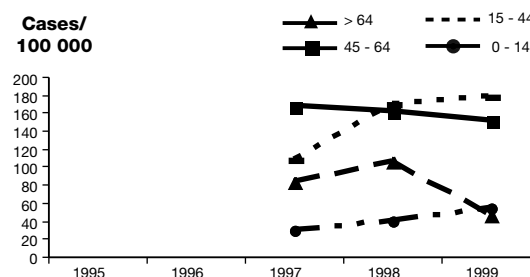
Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



KYRGYZSTAN

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	6 501	
Notification rate per 100 000	139.2	
Sex ratio (male/female)	1.7	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	6 376	(98.1%)
Culture positive	-	-
Respiratory	5 818	(91.2%)
among which sputum smear positive	1 642	(28.2%)

Drug resistance surveillance, 1999

Linkage with TB notifications	no
Geographic coverage	some areas
Culture positive cases with DST* results	-

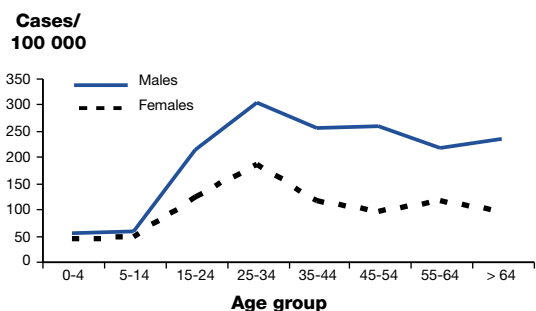
Note: cases diagnosed at the National Reference Laboratory. Culture and DST done on selected cases

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	141	-	81	-	96	-	318
Resistant to INH	33	(23.4)	43	(53.1)	39	(40.6)	115
Resistant to RMP	18	(12.8)	36	(44.4)	24	(25.0)	78
Multidrug resistant §	9	(6.4)	30	(37.0)	20	(20.8)	59

* Drug susceptibility testing; § resistant to at least INH and RMP

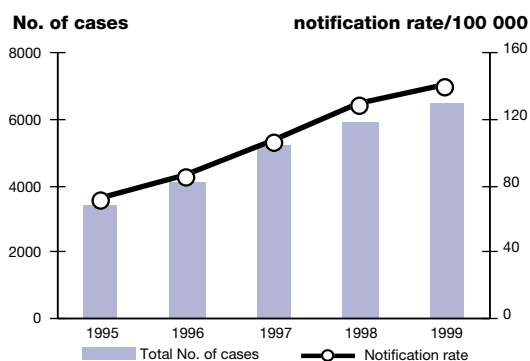
Tuberculosis notification rates by age group and sex, 1999



Tuberculosis cases by age group, geographic origin and sex, 1999

Foreigners not included in TB notifications

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

*Data provided on new cases only

LATVIA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	1 968	
Notification rate per 100 000	82.4	
Sex ratio (male/female)	2.4	
Median age (years)	-	
Individuals born abroad	39	(2.3%)
New (never treated)	1 673	(85.0%)
Culture positive	1 227	(62.3%)
Respiratory	1 867	(94.9%)
among which sputum smear positive	780	(41.8%)

* Not included in TB notifications

Drug resistance surveillance, 1999

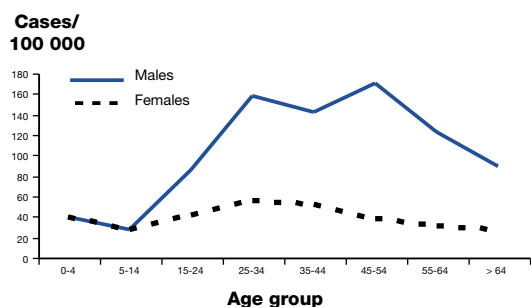
Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	1015/1227 (83%)

Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	825	-	190	-	0	-	1 015
Resistant to INH	229	(27.8)	60	(31.6)	-	-	289
Resistant to RMP	86	(10.4)	53	(27.9)	-	-	139
Multidrug resistant §	86	(10.4)	51	(26.8)	-	-	137

* Drug susceptibility testing; § resistant to at least INH and RMP

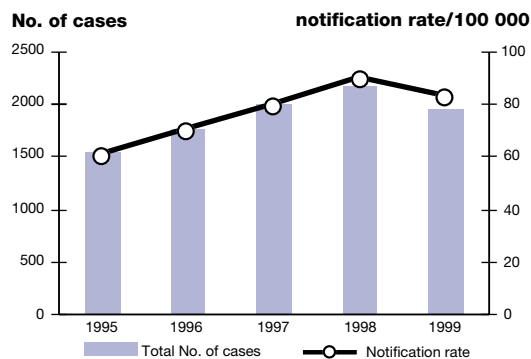
Tuberculosis notification rates by age group and sex, 1999



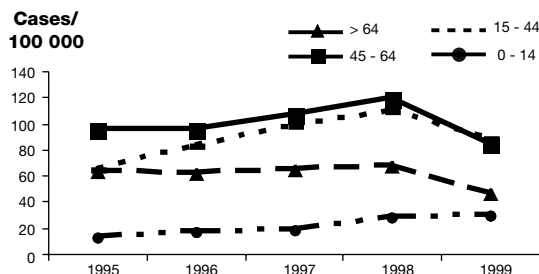
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



*Data provided on new cases only

LITHUANIA

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	2 903	
Notification rate per 100 000	78.8	
Sex ratio (male/female)	1.8	
Median age (years)	-	
Individuals born abroad	146	(5.0%)
New (never treated)	2 558	(88.1%)
Culture positive	1 420	(48.9%)
Pulmonary	2 273	(78.3%)
among which sputum smear positive	984	(43.3%)

Drug resistance surveillance, 1999

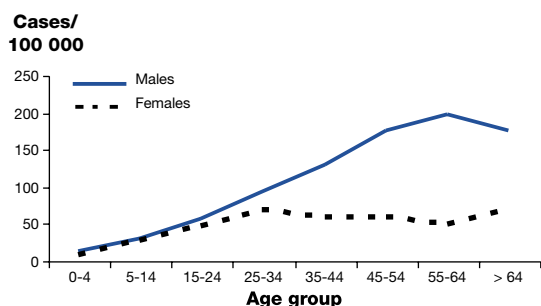
Linkage with TB notifications	yes
Geographic coverage	national
Culture positive cases with DST* results	986/1420 (69%)

Resistant cases by previous anti-TB treatment status

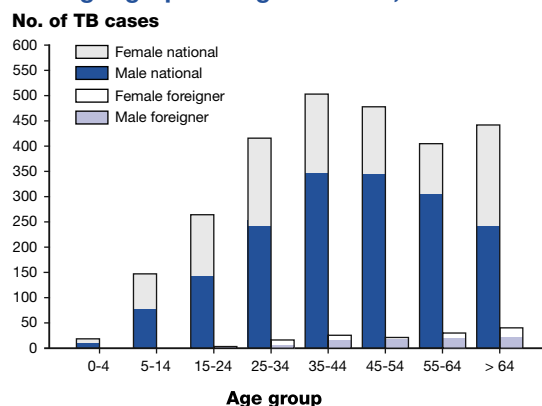
	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	819	-	167	-	0	-	986
Resistant to INH	178	(21.7)	90	(53.9)	-	-	268
Resistant to RMP	83	(10.1)	77	(46.1)	-	-	160
Multidrug resistant §	64	(7.8)	71	(42.5)	-	-	135

* Drug susceptibility testing; § resistant to at least INH and RMP

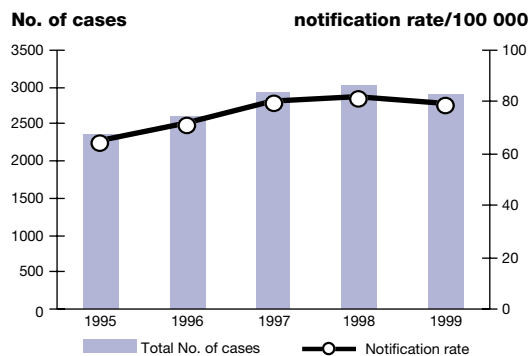
Tuberculosis notification rates by age group and sex, 1999



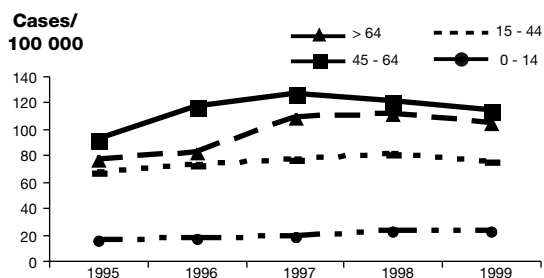
Tuberculosis cases by age group, geographic origin and sex, 1999



Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



MOLDOVA, REPUBLIC OF

Tuberculosis case notifications, 1999

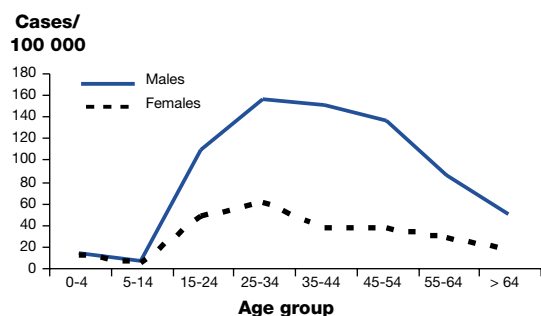
Type of data provided	Aggregate
Total number of cases	2 947
Notification rate per 100 000	67.3
Sex ratio (male/female)*	2.7
Median age (years)	–
Foreign citizens	47 (1.7%)
New (never treated)	2 648 (89.9%)
Culture positive	1 026 (37.8%)
Respiratory	2 530 (86%)
among which sputum smear positive	764 (30.2%)

* Provided on new cases only

Drug resistance surveillance, 1999

Not available

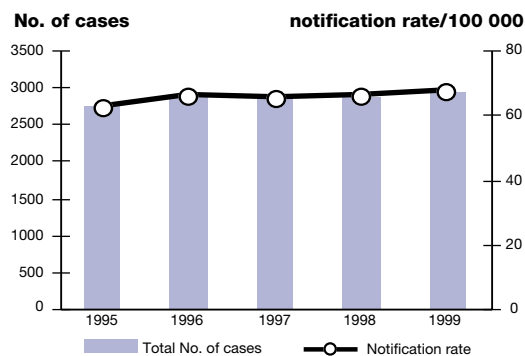
Tuberculosis notification rates by age group and sex, 1999



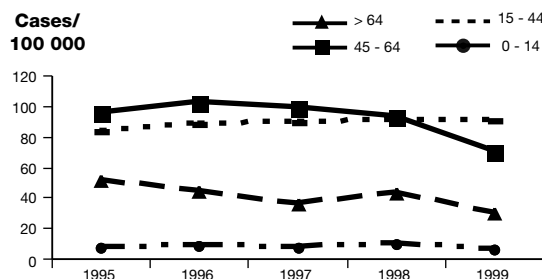
Tuberculosis cases by age group, geographic origin and sex, 1999

< 5% of TB cases of foreign origin

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999



*Data provided on new cases only

TAJIKISTAN

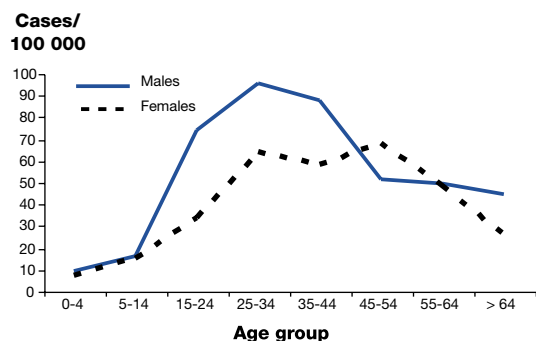
Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	2 553	
Notification rate per 100 000	41.8	
Sex ratio (male/female)	1.4	
Median age (years)	-	
Foreign citizens / individuals born abroad	-	-
New (never treated)	-	-
Culture positive	-	-
Respiratory	-	-
among which sputum smear positive	-	-

Drug resistance surveillance, 1999

Not available

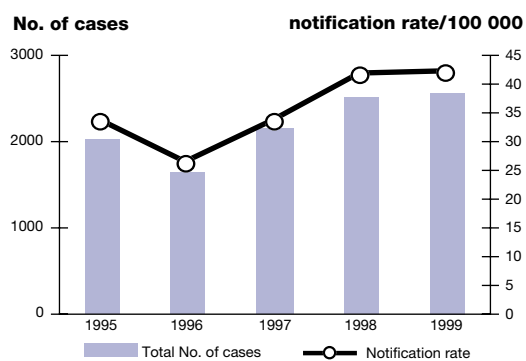
Tuberculosis notification rates by age group and sex, 1999



Tuberculosis cases by age group, geographic origin and sex, 1999

Not available

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

TURKMENISTAN

Tuberculosis case notifications, 1999

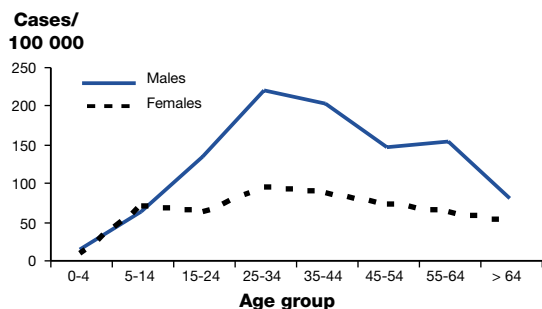
Type of data provided	Aggregate	
Total number of cases	4 092	
Notification rate per 100 000	93.3	
Sex ratio (male/female)	1.8	
Median age (years)	-	
Foreign citizens / individuals born abroad *	-	-
New (never treated)	4 010	(98.0%)
Culture positive	-	-
Respiratory	3 889	(95.0%)
among which sputum smear positive	992	(25.5%)

* Foreigners not included in TB notifications

Drug resistance surveillance, 1999

Not available

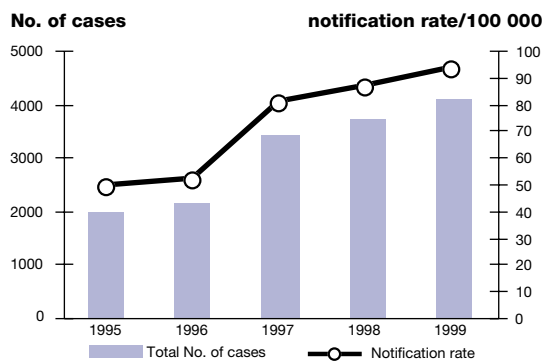
Tuberculosis notification rates by age group and sex, 1999



Tuberculosis cases by age group, geographic origin and sex, 1999

Foreigners not included in TB notifications

Total number of TB cases and notification rates, 1995-1999



Tuberculosis notification rates by age group, 1995-1999

Not available

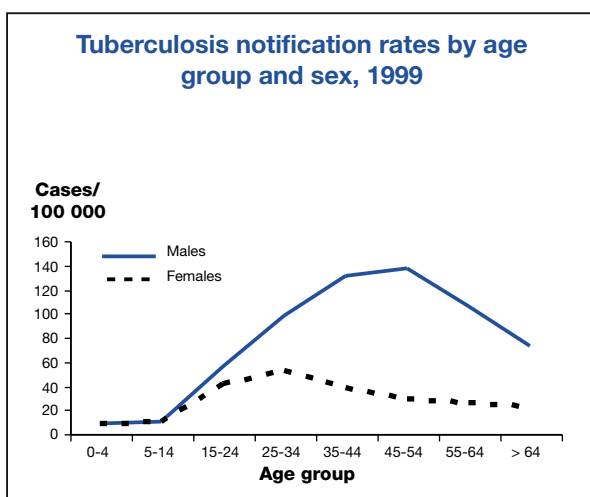
*Data provided on new cases only

UKRAINE

Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	32 879	
Notification rate per 100 000	64.9	
Sex ratio (male/female) *	2.4	
Median age (years)	-	
Foreign citizens / individuals born abroad **	-	-
New (never treated)	27 118	(82.5%)
Culture positive	-	-
Respiratory	31 187	(94.9%)
among which sputum smear positive	-	-

* New cases only; ** Foreigners not included in TB notifications



Drug resistance surveillance, 1999

Linkage with TB notifications: no
 Geographic coverage: Kiev region
 Culture positive cases with DST* results: -

**Note: data from one laboratory in Kiev.
 Culture and DST not routinely performed**

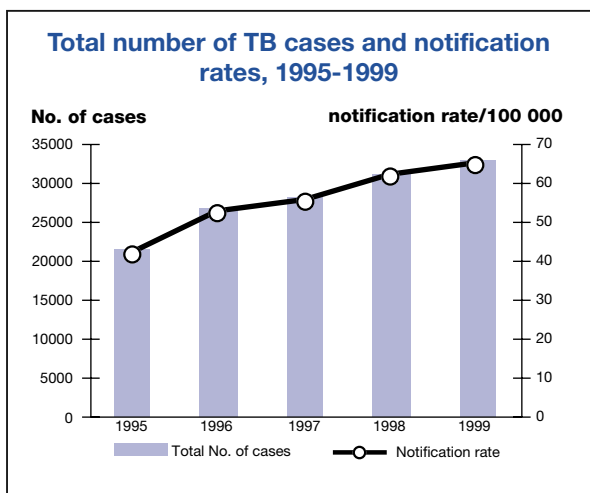
Resistant cases by previous anti-TB treatment status

	New		Previously treated		Unknown		Total
	N	(%)	N	(%)	N	(%)	
Tested	245	-	239	-	0	-	484
Resistant to INH	30	(12.2)	86	(36.0)	-	-	116
Resistant to RMP	27	(11.0)	75	(31.4)	-	-	102
Multidrug resistant §	19	(7.8)	67	(28.0)	-	-	86

* Drug susceptibility testing; § resistant to at least INH and RMP

**Tuberculosis cases by age group,
 geographic origin and sex, 1999**

**Foreigners not included
 in TB notifications**



**Tuberculosis notification rates by age group,
 1995-1999**

Not available

*Data provided on new cases only

UZBEKISTAN

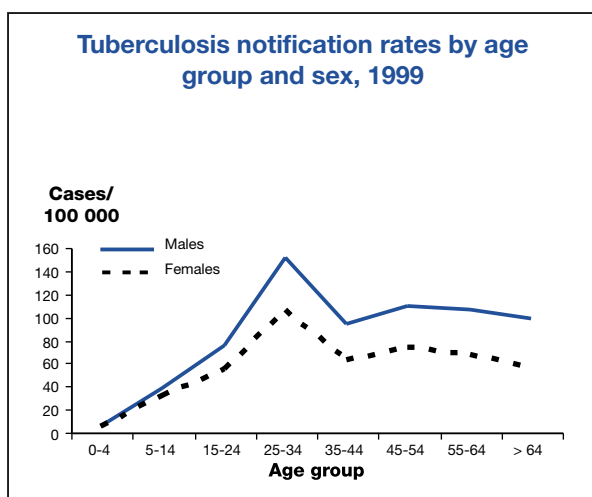
Tuberculosis case notifications, 1999

Type of data provided	Aggregate	
Total number of cases	16 959	
Notification rate per 100 000	70.8	
Sex ratio (male/female)*	1.4	
Median age (years)	-	
Foreign citizens / individuals born abroad**	-	-
New (never treated)	15 080	(88.9%)
Culture positive	-	-
Respiratory	15 195	(89.6%)
among which sputum smear positive	4 096	(27.0%)

* New cases only; ** Foreigners not included in TB notifications

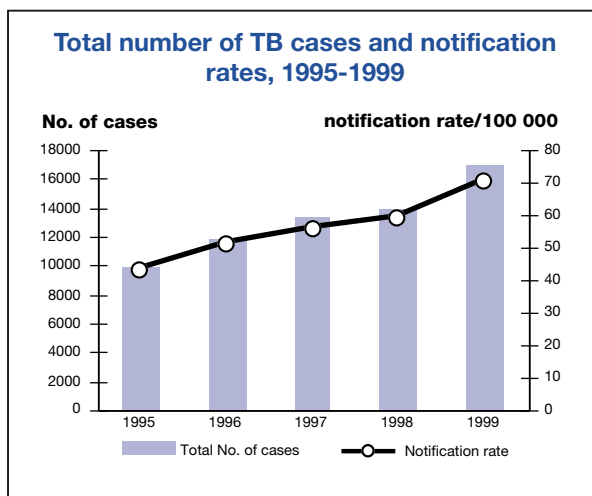
Drug resistance surveillance, 1999

Not available



Tuberculosis cases by age group, geographic origin and sex, 1999

Foreigners not included in TB notifications



Tuberculosis notification rates by age group, 1995-1999

Not available

*Data provided on new cases only