TECHNICAL NOTE

The EuroTB programme for the surveillance of tuberculosis in Europe aims at improving the contribution of surveillance to tuberculosis control in the WHO European region through the provision of valid, comparable information on the epidemiology of tuberculosis. The programme, set up in 1996, is managed jointly by the Institut de Veille Sanitaire (InVS), France and the Royal Netherlands Tuberculosis Association (KNCV), the Netherlands, and is financially supported by the European Commission. All the 51 countries of the WHO European Region participate in EuroTB activities. Country participation is on a voluntary basis. Generally, a single national institution is appointed for participation in European TB surveillance activities and is 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].**

In order to allow for data validation and consolidation at national level, data are collected 10 to 12 months after the end of the calendar year of interest. Data reported for previous years are not routinely updated. Figures presented in this report may differ from those published by WHO **[3, 4]** which are collected earlier. For countries not reporting the total number of cases to EuroTB for a specific year, data published by WHO **[3]** have been used.

2.1 Data collection

Individual, anonymous data, according to a standardised data file specification are collected once a year on tuberculosis cases notified by clinicians (and / or laboratories where applicable) in each country in the previous calendar year. In countries unable to provide individual data, aggregate data by age group and sex, are collected according to standard Tables by geographic origin, status according to previous TB disease (new/recurrent case), bacteriological confirmation (culture and sputum smear results) and site of disease. Information on definitions used and on inclusion in notifications of cases diagnosed in specific population groups is collected through a specific questionnaire.

Results of drug susceptibility testing (DST) at the start of treatment for notified cases (collected for the first time for 1998) are provided either as individual data in the same data file containing other information on TB cases, or as aggregate Tables by age group and sex, by previous anti-TB treatment status (never treated / previously treated) and by geographic origin (national / foreigner). DST results are collected for isoniazid, rifampicin, ethambutol and streptomycin and 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. Information on laboratory practices for DST and on the proportion of cases with available DST results by region was collected through a specific questionnaire.

In some of the countries, DST results provided are not related to TB notifications, i.e. they may also include DST results for cases not notified in 1998, (e.g. cases never notified or recurrent cases notified in previous years). Data from these countries are presented separately.

2.2 Case definition and classification

2.2.1 TB 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 posi-

tive 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 a given calendar year are notifiable to EuroTB and are included in the data presented in this report.

2.2.2 Previous TB diagnosis

New case
A patient who has never had tuberculosis previously.

Recurrent case
A patient who has had a previous episode of tuberculosis.

Recurrent cases may include relapse, failure, return after default and chronic cases. The type of recurrent cases included in TB notifications varies across countries (see section 3.2). All new and recurrent cases starting treatment in the calendar year of interest should be notified to EuroTB and are included in the global figures presented in this report.

Recurrent cases ases should be notified only once in a given calendar year. For example, a patients who returns after default and starts treatment again in the same calendar year as the previous notified episode, should not be notified again in the same calendar year. Patients with a previous TB diagnosis (recurrent cases) but never treated (e.g. previous episode before availability of drugs) are variably classified as new or recurrent cases across countries.

2.2.3 Previous TB treatment

Never treated case
A patient who never received drug treatment for TB in the past or who received anti-tuberculosis drugs for less than one month.

Previously treated case
A patient who in a previous calendar year was diagnosed with tuberculosis and took anti-tuberculosis drugs (excluding preventive therapy) for at least one month.

This classification is mainly used for the analysis of drug resistance data. Drug resistance among cases never treated is an indicator of primary drug resistance, i.e. resistance in patient with active tuberculosis due to infection with resistant bacilli. Drug resistance among cases previously treated usually indicates acquired drug resistance, i.e. resistance emerging in a patient during treatment as a consequence of selection of drug resistant mutant bacilli. In countries providing individual data on both previous TB episodes and previous treatment, recurrent cases without information on previous treatment are classified as previously treated

2.2.4 Site of disease

For reporting to EuroTB, the *pulmonary* classification is recommended:

Pulmonary case
TB of the lung parenchyma and/or tracheo-bronchial tree.

Extrapulmonary case
TB affecting any site other than pulmonary as defined above, including pleural TB and intrathoracic lymphatic TB without involvement of the lung parenchyma.

Alternatively the respiratory classification can be used:

Respiratory case
All pulmonary cases (see above) plus pleural TB and intrathoracic lymphatic TB

Extra respiratory cases
TB affecting any site other than respiratory as defined above,

If pulmonary or respiratory TB is present the case is always classified as pulmonary or respiratory TB, including in cases of disseminated TB (i.e. TB involving more than two organs, miliary TB or isolate of *M. tuberculosis* complex from blood). In individual

data, information is provided on the major site and one minor site of disease. Pulmonary localisation, if present, is classified as major site by default, and other localisations may be classified as major or minor site of disease.

2.2.5 Geographic origin of the case

The recommended information to be provided on geographic origin of TB cases is the place of birth (born in the country / foreign born). As an alternative, information can be provided by citizenship (national / foreign citizen). Country of birth or of citizenship is collected in individual data. When presenting data by continent of origin, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan and Uzbekistan are classified in Europe, which therefore corresponds to the WHO European Region.

2.2.6 Drug resistance

For each drug on which information was collected (isoniazid, rifampicin, ethambutol and streptomicin), resistance is defined as resistance at the start of treatment to that drug alone or in any combination with resistance to the other three drugs. Concomitant resistance to at least isoniazid and rifampicin, with or without resistance to ethambutol and streptomycin, is defined as multidrug resistance (MDR).

2.3 Data presentation

Numbers of notified cases are shown by year of start of anti-TB treatment. Numbers of cases are not adjusted for underreporting which was estimated to vary between 0 and 40% for 1997 or for over-reporting (i.e. repeated counting of the same case, estimated to represent between 0-35% of notified cases) **[5]**.

Data by age group are presented only if provided according to the requested breakdown. For data which can be provided according to alternative classifications (geographic origin, site of disease), the type of classification provided is presented in the relevant Tables.

Country population denominators for calculation of notification rates are taken from United Nations demographic estimates (1994 update until 1997 **[6];** 1998 update for 1998 **[7]),** except for Andorra **[8].** National correspondents provided demographic estimates of the population by geographic origin (nationals/ foreigners) and regional populations (for Yugoslavia in 1998).

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;

- East: the 15 Newly Independent States of the former Soviet Union, including the Baltic countries (Estonia, Latvia, Lithuania);

- Centre: the 13 remaining countries of the WHO European Region: Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, the Former Yugoslav Republic (FYR) of Macedonia, Poland, Romania, Slovakia, Slovenia, Turkey, Yugoslavia.

The respective total populations of the three areas were 395, 292 and 187 million in 1998.

Drug susceptibility testing (DST) results are presented as proportion of cases resistant, calculated using as denominator cases with available DST results. Proportions of resistant cases are shown in a given country only for drugs for which DST results are provided for all tested cases.