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Tuberculosis: still a concern for all countries in Europe

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Tuberculosis (TB) is a matter of concern for all countries in the World Health Organization European Region, although the epidemiological situation of the disease varies widely between countries. The eastern part of the European Region has higher notification rates than most countries of the European Union (EU). Strategies to control TB should be defined accordingly, in order to decrease TB in countries with higher rates and to continue improving the situation in those enjoying more favourable circumstances. To mark World TB Day on 24 March 2007, the European Centre for Disease Prevention and Control (ECDC) will hold a scientific seminar at the European Parliament on 22 March (http://www.ecdc.eu.int/tbseminar) to increase awareness and share views and knowledge about the importance of TB control in Europe. Data from a newly published report from EuroTB (a collaborating centre of WHO for the surveillance of TB; http://www.eurotb.org) on cases of the disease notified during 2005 will be presented. This article summarises the main findings of the report [1].

In 2005, 426,717 tuberculosis cases were notified in WHO Europe, 72% by 12 ex-republics of the former Soviet Union (henceforth referred to as “the East”), 22% by countries of the enlarged European Union (“EU-27”) and Western Europe, and 6% by Turkey and other Balkan countries (Table).

Table. Tuberculosis surveillance data by geographic area, WHO European Region

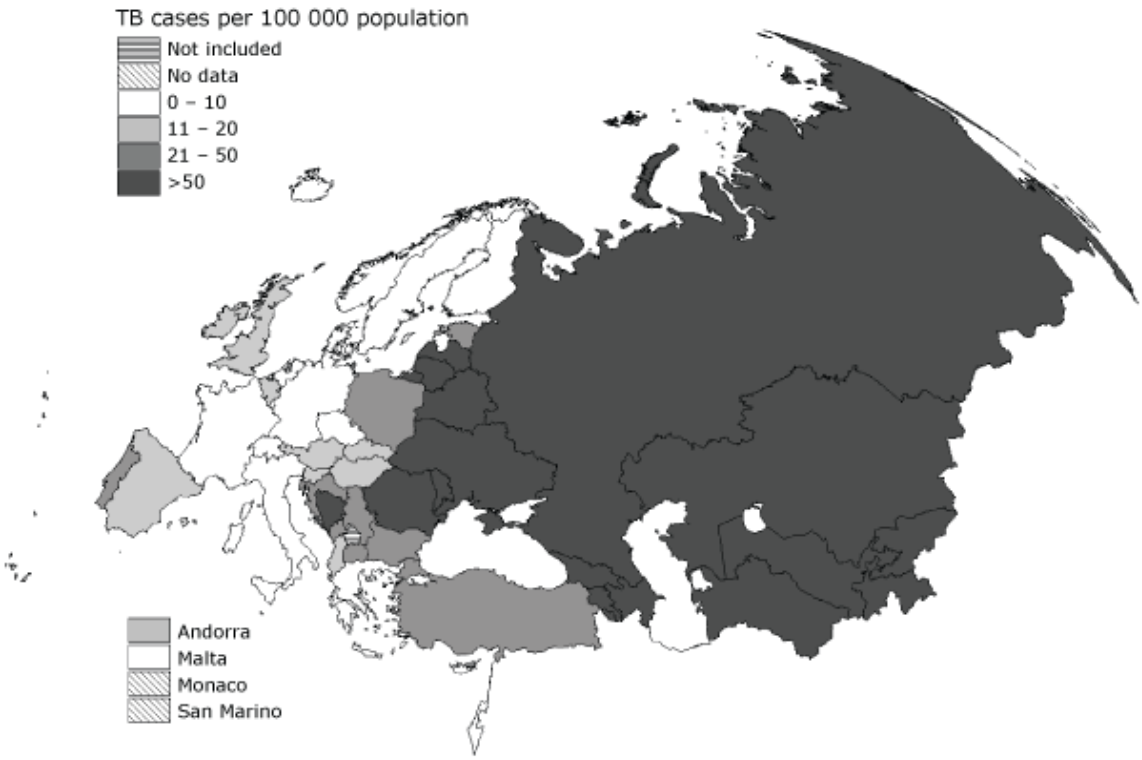
Surveillance data	Geographic area*							
	European Union & West		Balkans		East		Total	
	N		N		N		N	
Total population (millions)	34	509.8	7	94.9	12	277.6	53	882.3
Demographic and clinical features of TB cases, 2005								
Total number of cases	32	93,129	7	27,573	12	306,015	51	426,717
TB cases / 100,000 population	32	18.3	7	29.1	12	110.2	51	48.4
Mean annual % change in notification rate (2001-2005)	32	-2.5%	7	-0.5%	12	+4.3%	51	+2.1%
Foreign origin	32	20%	7	1%	12	0%	51	5%
Sex ratio (male to female), nationals	32	2.0	7	1.8	10	1.6	49	1.7
Sex ratio (male to female), foreign-born/citizens	32	1.4	7	1.3	3	3.1	42	1.4
Age over 64 years, nationals	32	21%	7	15%	10	7%	49	11%

Age over 64 years, foreign-born/citizens	32	9%	7	25%	2	1%	41	9%
Pulmonary disease	31	80%	7	76%	10	85%	48	83%
Pulmonary sputum smear positive cases / 100,000 population	31	7.1	7	11.7	10	34.5	48	15.0
No previous history of TB / TB treatment	32	80%	7	91%	12	77%	51	78%
Culture positive	32	50%	7	34%	6	20%	45	30%
HIV infection among TB cases (latest available data 2001-2005)	23	3.0%	4	0.2%	6	1.1%	33	1.7%
TB deaths / 100,000 population(median, latest available rates 2001-2004) ‡	29	0.7	4	3.4 §	6	19.4	39	0.8
Multidrug resistance (MDR), 2005 ‡								
Primary MDR (median)	21	1.2%	3	0.4%	1	6.8%	25	1.1%
Nationals, combined MDR (median)	21	0.5%	3	1.1%	1	15.4%	25	0.8%
Foreign-born/citizens, combined MDR (median)	20	1.7%	1	0.0%	0	-	21	1.6%
Outcome, new definite pulmonary cases, 2004 ‡								
Success (cure or treatment completion)	24	78%	2	79%	7	70%	33	75%
Death	24	6%	2	4%	7	5%	33	6%
Failure	24	2%	2	1%	7	9%	33	5%
Still on treatment	24	3%	2	0%	7	0%	33	2%
Loss to follow up (default, transfer, unknown)	24	11%	2	17%	7	16%	33	13%

** Mean value except where otherwise indicated (countries making up West, Balkans and East sub-regions listed in text)*
N Number of countries with available data and included in the statistics
‡ Including only countries with representative nationwide data.
§ Data from Serbia including Montenegro, now 2 separate countries
Primary MDR: among previously untreated cases; Combined MDR: among all cases tested (see http://www.eurotb.org)

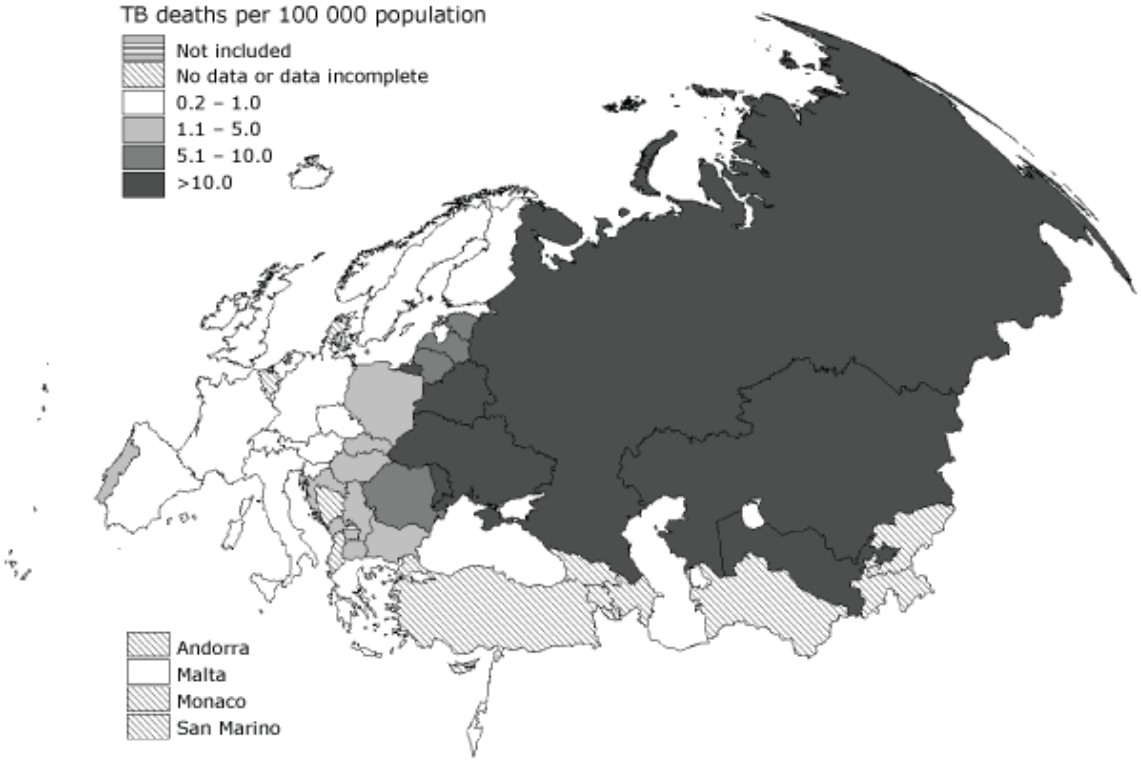
The overall notification rate averaged 48 cases per 100,000, with an incremental west-to-east gradient in recent years (Figure 1).

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



In general, TB mortality rates in recent years mirrored notification rates in their geographical distribution across the European Region (Figure 2, median overall rate: 0.8/100,000, 39 country range: 0.2-22.8).

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



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

TB notification, 2005

In the East, the Russian Federation reported more TB cases in 2005 than the other 11 countries combined. TB notification rates were however much higher in Kazakhstan (210/100,000), the Republic of Moldova (149/100,000), Georgia (144/100,000) and Kyrgyzstan (129/100,000) than in Armenia, Azerbaijan, Belarus, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan (65-110/100,000). The average annual increase in notification rates between 2001 and 2005 in the East was lower than that observed between 1995 and 2000 (4% versus 10%). Much of the increase in recent years is due to inclusion of previously treated cases as a result of expanding TB care programs in many of these countries.

In 2005, TB notification rates in the EU-27 (mean rate: 19/100,000 population) and Andorra, Iceland, Israel, Norway and Switzerland (henceforth referred to as “the West”) – no data was available from Monaco and San Marino – ranged from four to 135 per 100,000 population, and were highest in the new EU Member States (Romania and Bulgaria) and in the Baltic States. The enlargement of the EU in the last three years has dramatically changed the range of TB rates observed across its expanse. Rates in the 12 countries that have acceded to the EU since 2004 were nearly five times higher than those in the original 15 Member States. Although the mean TB rate in the EU has increased as a result of the expansion, rates in most Member States are decreasing. However, substantial increases in recent years among cases of foreign origin have driven up total TB rates in Sweden and United Kingdom. In the EU-27 and the West, cases of foreign origin represented 20% of TB cases reported in 2005, but ranged very widely (country range: 0-82%). Two-thirds of the cases of foreign origin were from Africa or Asia and 9% from the East.

Turkey alone reported 74% of cases notified by the Balkan countries (including Albania, Bosnia and Herzegovina, Croatia, F.Y.R. of Macedonia, Montenegro, and Serbia), and was the only country in this sub-region where rates had not decreased recently, due to efforts to improve the completeness of reporting.

HIV/TB

In the East, HIV prevalence among TB cases – an index of HIV progression in the general population – was 1% or lower in five countries in recent years, but was 2% in Armenia in 2005. Ukraine reported 2,243 AIDS cases with TB as initial identifying illness in 2005 (5% of TB cases reported by this country). In the EU, HIV prevalence among TB cases has increased steadily in Estonia and Latvia (6.4% and 3.5% respectively in 2005), and doubled in England and Wales between 2000 and 2003. It remains highest in Portugal (15%). In the Balkans, HIV prevalence among TB cases was under 1% in the four countries with data.

Anti-TB drug resistance

In Europe, resistance to isoniazid and rifampicin, the most powerful first line anti-TB antibiotics (multi-drug resistance,

MDR), is strongly associated with origin from the former Soviet Union. Nationwide and regional drug resistance surveys suggest a widespread problem in Eastern countries (for example, 15% total MDR in Georgia in 2005-2006 and 25% in Kazakhstan in 2001, regardless of prior treatment).

MDR was 10 times higher in the Baltic States than in other EU countries, where it was generally more common in cases of foreign origin. In three Balkan countries with complete data, MDR was present in 1-2% of patients notified. In Turkey, the prevalence was 5%, although this may not be representative of all TB cases reported.

Treatment outcomes (2004) and mortality

In countries of the East with complete nationwide data, the 85% success target for new pulmonary cases was achieved by Kyrgyzstan in 2004 but not by the other six countries (56-74%). A low proportion of cases completing treatment successfully, associated with a high proportion of cases failing to resolve disease (4-12%), may reflect the frequency of MDR. TB mortality rates were high, ranging from 10.4 to 22.8 per 100,000 (six countries, latest available complete data 2003-2004).

In six of 24 countries with complete data in the EU-27 and the West, 85-100% of new pulmonary TB cases finished treatment successfully, and in the rest, success ratio averaged 77%. Deaths represented 6% in those 24 countries (range: 0-12%). The TB mortality rates in the EU-27 and the West, however, were among the lowest in the European Region (29 countries, latest available data 2001-2004), ranging from 0.2 to 9.6 per 100,000.

In the Balkan countries, success ratios among new pulmonary cases (2004) were 85% or higher in Bosnia and Herzegovina, Serbia and Turkey, but lower in three other countries (43-84%). TB mortality rates were 3.3-3.8 per 100,000 (four countries, latest available complete data 2002-2004).

Conclusion

In the European Region, countries of the former Soviet Union have high TB notification and mortality rates and a large case-load of MDR-TB. This is often complicated by inadequate information, resources, capacity and training required for optimal TB control. These countries therefore remain the priority for TB control in the European Region.

Within the 27 EU Member States, EuroTB data identify different patterns that are important for priority-setting in both surveillance and control. In industrialised western countries anticipating TB elimination, immigrants and vulnerable sub-groups should be prioritised. The Baltic States should target MDR and also HIV (which has been contributing to an increasing proportion of the TB case-load in recent years). Central European countries – several of which have borders to countries with high TB prevalence – need to enhance their surveillance to avert a possible re-emergence of TB as it was seen in Western Europe in the early 1990s. EU candidate Member States should continue efforts to achieve effective TB surveillance throughout their territories.

References:

1. EuroTB and the national coordinators for tuberculosis surveillance in the WHO European Region. Surveillance of tuberculosis in Europe. Report on tuberculosis cases notified in 2005. Institut de veille sanitaire, Saint-Maurice, France. March 2007. Available from: http://www.eurotb.org/rapports/2005/full_report.pdf

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The Stop TB Partnership for Europe: aims and principles

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The Stop TB Partnership for Europe was launched on 10 October 2006 at a meeting of 25 leading European organisations held in Geneva. It is a regional-level entity established under the umbrella of the Global Partnership to Stop TB and aims to accelerate progress on tuberculosis control by promoting implementation of the Global Plan to Stop TB 2006-2015 in the European region.

The threat of drug-resistant tuberculosis and a rise in TB-HIV co-infection is of particular concern worldwide and in Europe. The initiative therefore aims to improve the diagnosis, treatment and cure of tuberculosis in the WHO Region Europe and to ensure a united European response to the global tuberculosis situation. Working together in partnership is both a challenge and an opportunity. The challenge is to work cooperatively towards common goals, without losing independence and the individual mandates and priorities of the constituencies represented. The opportunity is to learn from others, to draw on the comparative advantage of partner agencies, to avoid duplication and to evolve accordingly. The target of a future without tuberculosis for all Europeans should be achieved by pursuing the following principles and values: