Rapid communications

Stopping TB in Europe: some progress but still not there

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Overview of the epidemiological situation in 2006

The latest available information from countries in the World Health Organization (WHO) European Region carries important signals about the tuberculosis (TB) situation in this part of the world [1]. The total number of TB cases reported in the Region was slightly lower in 2006 than in 2005 (422,830 versus 426,457), reflecting a decrease in three-fourths of the reporting countries. Most TB cases in 2006 (73%) were reported by 12 former Soviet Union republics in the East, 21% by the European Union and West (EU and West) and 6% by the remaining countries in the Balkans (Table 1; for the composition of geographical areas see Box). National TB notification rates ranged from 4 to 282 per 100,000 population. The total TB notification rate for the whole Region has increased very slightly between 2002 and 2006,

Table 1

Tuberculosis surveillance indicators by geographic area, WHO European Region

Country	Geographic area*							
	European Union and West		Balkans		East		Total	
	N†		N†		N†		N†	
Total population (millions)	34	513.1	7	95.6	12	278.3	53	887.0
Demographic and clinical features of TB cases, 2006								
Total number of cases notified	32	89,032	7	26,911	12	306,887	51	422,830
Total TB notifications/100,000 population	32	17.4	7	28.1	12	110.3	51	47.7
Mean annual % change in notification rate (2002-2006)	32	-4.0%	7	-1.4%	12	+3.2%	51	+0.9%
Foreign origin	32	20%	7	1%	12	0%	51	4%
Age over 64 years, nationals	32	20%	7	15%	11	7%	50	10%
Age over 64 years, foreign born/citizens	32	9%	7	22%	2	2%	41	9%
Not previously treated (diagnosed) for TB	32	80%	7	90%	12	75%	51	77%
HIV infection among TB cases (latest available data 2003-2006)	23	2.5%	4	0.3%	9	1.9%	36	2.0%
TB deaths/100,000 (median, latest available rates 2002-2006) ‡	28	0.7	4	3.3§	5	22.0	37	0.8%
Multidrug-resistant TB (MDR TB), 2006 ‡								
Primary MDR TB (median)	23	1.1%	3	0.0%	1	6.8%	27	0.9%
Nationals, combined MDR TB (median)	23	0.5%	3	0.6%	1	15.4%	27	0.6%
Foreign-born/citizens, combined MDR TB (median)	23	1.8%	1	1.0%	0	-	24	1.7%
Outcome, new definite pulmonary cases, 2005 ‡#								
Success (cure or treatment completion)	25	79%	5	89%	8	74%	38	79%
Death	25	6%	5	3%	8	6%	38	5%
Failure	25	2%	5	1%	8	9%	38	4%
Still on treatment	25	2%	5	1%	8	2%	38	2%
Loss to follow up (default, transfer, unknown)	25	10%	5	6%	8	9%	38	9%

from 46 to 48 cases per 100,000, although rates of previously untreated TB cases appear to be on the decrease in both the East and West (Figure 1). We describe the main epidemiological features of TB cases notified in each of the abovementioned areas using surveillance data reported by the countries themselves.

East

While half of the TB cases in the East in 2006 were reported by the Russian Federation, the total notification rates per 100,000 population were higher in Kazakhstan (282), Moldova (160), Georgia (142) and Kyrgyzstan (127). The mean annual increase in total notification rates in 2002-2006 (+3%) was lower than that observed in 1998-2002 (+6%).

One fifth of cases in the East had been previously treated, but the proportion varied considerably between countries (6-46%), reflecting different practices in defining cases and recruiting patients. The number of previously untreated cases decreased between 2005 and 2006 in nine countries.

TB mortality rates were high (10-25/100,000 in 5 countries in 2003-2006).

HIV infection was reported in 1% or less of TB cases in seven countries (2003-2006), but was higher in the Russian Federation and Ukraine (1.7% and 5.1% respectively among new TB cases in 2006). Additionally, these two countries reported increasing numbers of AIDS cases diagnosed with TB as initial indicative illness between 2000 and 2006.

Recent data on drug resistance from nearly all Eastern countries reveal a widespread problem. In Georgia and certain regions of the Russian Federation and Ukraine, 7-16% of previously untreated TB cases surveyed in 2005-2006 had resistance to at least isoniazid and rifampicin (multidrug–resistant TB; MDR TB). MDR TB was more common in previously treated cases (16-61% in 10 countries with data in 2006).

Among previously untreated sputum smear-positive pulmonary cases in 2005, Kyrgyzstan and Turkmenistan reported achieving the WHO global target of 85% treatment success, while another nine countries had a lower success ratio (59-82%). High levels of failure or prolonged treatment (4-17% of cases) probably reflect the frequency of drug resistance in these countries.

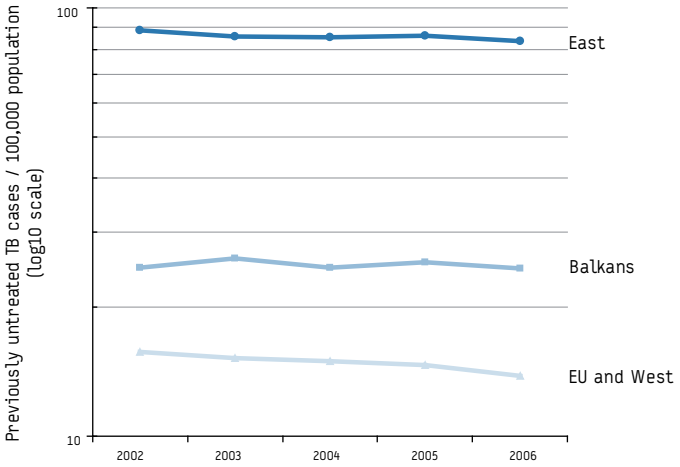
EU and West

The lowest TB mortality and incidence in the Region were reported by countries in the EU and West, but the rates were higher in the Baltic States (Estonia, Latvia and Lithuania), Bulgaria and Romania than elsewhere in this area. Fifteen countries had total notification rates lower than 10/100,000 in 2006. The mean rate in the 12 countries which joined the EU since 2004 was over four times higher than in the EU-15 Member States. Nonetheless, the average annual decrease in total notification rates in the EU and West between 2002 and 2006 was significantly larger than that observed between 1998 and 2002 (-4.0% versus -1.3% respectively).

Between 2000 and 2005, the number of TB cases reported in 'nationals' (as defined by place of birth or citizenship) decreased steadily but the number of cases of foreign origin increased slightly (pooled data for 24 countries, Figure 2). As a result, the proportion of foreigners among the total number of cases has increased over time. Between 2005 and 2006, the number of cases reported in foreigners decreased overall, although not in all countries. A sharp

Figure 1

Rates of previously undiagnosed tuberculosis cases, by geographic area, WHO European Region*, 2002–2006



Proportion of TB cases with previous treatment history unknown

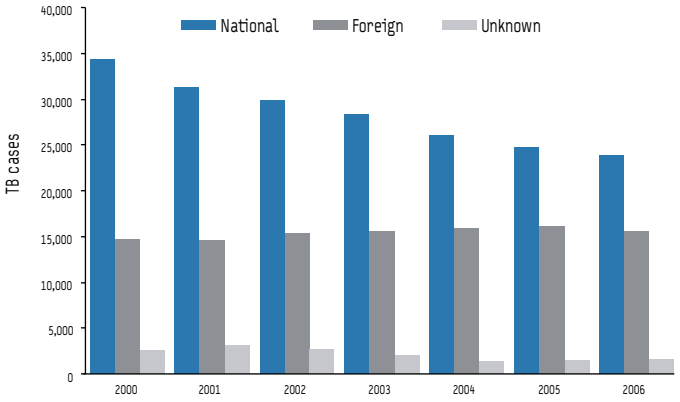
	2002	2003	2004	2005	2006
EU and West	9%	9%	7%	6%	7%
Balkans	2%	0%	0%	0%	0%
East	0%	0%	0%	0%	6%

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

All countries included reported data on previous treatment history of TB cases. Proportion of cases with unknown treatment history varied in certain countries in the EU and West over time, while in the East nearly all cases with unknown treatment history in 2006 were reported by Kazakhstan and the Russian Federation.

Figure 2

Total number of tuberculosis cases by geographic origin, European Union and West*, 2000–2006



* Excluding countries with incomplete data for any one year or change in criterion of origin: Andorra, Bulgaria, Cyprus, Greece, Luxembourg, Monaco, Poland, San Marino, and Spain. Cases from Romania (>25,000 yearly, <0.1% foreign) are not included.

drop in notifications in foreigners was reported between 2005 and 2006 in Austria, Denmark and Sweden, following an increase in the previous years, while a steadier decline occurred since at least 2003 in France, Germany, Israel, the Netherlands, Portugal and Switzerland. In contrast, the number of cases of foreign origin increased progressively and substantially in Italy and the United Kingdom since at least 2002.

HIV prevalence among TB cases increased between 2000 and 2006 in Estonia and Latvia (from less than 1% to 9% and 3% respectively) and doubled in the United Kingdom between 2000 and 2003 (from 4% to 8% in England and Wales; no further data reported since). In 2006, it was 0-1% in eight other countries, 2-7% in another nine, 15% in Iceland (2 cases), and 14% in Portugal. As in previous years, MDR TB remained more frequent in the Baltic States (combined MDR TB: 15-19%) than in the other countries (0-2% in 18 countries; 7% in Israel, and 14% in Malta – 2 cases), where it was generally more common in cases of foreign origin. In 25 countries with complete outcome data (2005), success was reported in 79% of new culture-positive pulmonary cases. Loss to follow up was more frequent among foreign cases than nationals (16% vs. 9% respectively; P<0.01) while death was less commonly reported (4% vs. 6%, P<0.01).

Balkans

In 2006, three-fourths of TB cases notified by the Balkan countries were reported by Turkey, where the total notification rate has stabilised recently as the national TB control programme expanded. Between 2002 and 2006, the total number of TB cases in the other Balkan countries decreased, and the notification rates declined by a mean of 4-11% yearly.

TB mortality rates have been moderate in recent years (2-4/100,000 in 4 countries providing data).

In 2006, HIV prevalence among TB cases was low (0.0-0.6% in 4 countries with data), and combined MDR TB was 0.4-1.9% in three countries with representative data. Treatment success ratios among new definite pulmonary cases in 2005 were 85-97% in Bosnia and Herzegovina, Serbia and Turkey, but lower in the rest of the area (30-84%) largely as a result of incomplete information on follow-up.

Conclusion

The stabilisation in TB incidence in the WHO European Region as a whole in the last few years marks a degree of progress in TB control. A 'birth cohort' effect partly explains this trend, particularly among the indigenous TB cases in western countries [2]. The TB caseload and incidence, however, vary considerably across the Region and weigh disproportionately on certain countries where information and resources are insufficient to implement the best-suited control measures. Rates are not decreasing everywhere, partly as a result of improved detection and fluxes in migration. These are major characteristics of the TB situation in the Region which will need increased attention in future. Moreover, our data indicate certain features which will have important implications for the direction of future surveillance and efforts in TB control. A high frequency of MDR TB as well as the presence of extensively drug-resistant TB (XDR TB), has now been well documented in patients presenting for treatment in most countries of the former Soviet Union [3]. A sizeable proportion of TB patients being detected in these countries require more intensive treatment and costly support. The response to this challenge will involve mobilisation of clinical, laboratory and public health capacity. Comprehensive monitoring of patients' outcomes becomes all the more necessary, requiring the prolongation of follow-up beyond 12 months and due vigilance for early recurrence [4]. The HIV epidemic in countries of the former Soviet Union, predominantly among injecting drug users, is having a perceptible impact on TB. Providing joint TB and HIV management for more patients in countries already burdened by drug-resistant TB will present a formidable challenge. While, with some exceptions, TB mortality rates in the EU are low, a recent study showed that TB still contributes heavily to death from infectious diseases in 12 EU countries in which the mean number of reported TB deaths in 2003-2004 was twice as high as that attributed to HIV infection [5].

It seems that the increasing trend of TB cases reported among persons of foreign origin in several western countries has reached a turning point, as numbers declined between 2005 and 2006. This has to be observed carefully over the next few years to see how the situation evolves, as it may be affected by access to care, immigration policy and factors influencing migration in the countries of origin. While the collection of data on foreigners with TB at European level has a long history and is appreciably well standardised, other sub-populations at increased risk of infection or unfavourable outcomes of treatment could benefit from targeted surveillance and outreach programmes. These include prisoners, injecting drug users and socially disadvantaged persons. The collection of data on these risks at the supranational level should be seriously considered as well.

Box

Countries of the WHO European Region by geographic area

EU and West:

EU: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom;

West: Andorra, Iceland, Israel, Monaco, Norway, San Marino, Switzerland.

Balkans: Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey.

East: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

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